May 11, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019519

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 25, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N019519-001, N019519-002, N019519-003, N019519-004, N019519-005, N019519-006 and N019519-013 due to matrix interference. Samples were analyzed at lower dilution however retention time criteria and/or matrix spike were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N019519-002, N019519-004, N019519-010 and N019519-013 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese on QC samples N019494-002B-MS and N019494-002B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *11-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019519
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019519-001A	MW-22-Q216	Groundwater	4/25/2016 2:49:00 PM	4/25/2016	5/11/2016
N019519-001B	MW-22-Q216	Groundwater	4/25/2016 2:49:00 PM	4/25/2016	5/11/2016
N019519-002A	MW-27-085-Q216	Groundwater	4/25/2016 12:57:00 PM	4/25/2016	5/11/2016
N019519-002B	MW-27-085-Q216	Groundwater	4/25/2016 12:57:00 PM	4/25/2016	5/11/2016
N019519-002C	MW-27-085-Q216	Groundwater	4/25/2016 12:57:00 PM	4/25/2016	5/11/2016
N019519-003A	MW-32-035-Q216	Groundwater	4/25/2016 1:00:00 PM	4/25/2016	5/11/2016
N019519-003B	MW-32-035-Q216	Groundwater	4/25/2016 1:00:00 PM	4/25/2016	5/11/2016
N019519-004A	MW-52D-Q216	Groundwater	4/25/2016 4:15:00 PM	4/25/2016	5/11/2016
N019519-004B	MW-52D-Q216	Groundwater	4/25/2016 4:15:00 PM	4/25/2016	5/11/2016
N019519-005A	MW-52M-Q216	Groundwater	4/25/2016 3:44:00 PM	4/25/2016	5/11/2016
N019519-005B	MW-52M-Q216	Groundwater	4/25/2016 3:44:00 PM	4/25/2016	5/11/2016
N019519-006A	MW-52S-Q216	Groundwater	4/25/2016 3:35:00 PM	4/25/2016	5/11/2016
N019519-006B	MW-52S-Q216	Groundwater	4/25/2016 3:35:00 PM	4/25/2016	5/11/2016
N019519-007A	MW-702-Q216	Groundwater	4/25/2016 1:20:00 PM	4/25/2016	5/11/2016
N019519-008A	MW-703-Q216	Groundwater	4/25/2016 1:25:00 PM	4/25/2016	5/11/2016
N019519-009A	MW-701-Q216	Groundwater	4/25/2016 4:15:00 PM	4/25/2016	5/11/2016
N019519-010A	MW-66-230-Q216	Groundwater	4/25/2016 12:57:00 PM	4/25/2016	5/11/2016
N019519-010B	MW-66-230-Q216	Groundwater	4/25/2016 12:57:00 PM	4/25/2016	5/11/2016
N019519-010C	MW-66-230-Q216	Groundwater	4/25/2016 12:57:00 PM	4/25/2016	5/11/2016
N019519-011A	MW-69-195-Q216	Groundwater	4/25/2016 3:16:00 PM	4/25/2016	5/11/2016
N019519-011B	MW-69-195-Q216	Groundwater	4/25/2016 3:16:00 PM	4/25/2016	5/11/2016
N019519-011C	MW-69-195-Q216	Groundwater	4/25/2016 3:16:00 PM	4/25/2016	5/11/2016
N019519-012A	MW-66-165-Q216	Groundwater	4/25/2016 1:30:00 PM	4/25/2016	5/11/2016
N019519-012B	MW-66-165-Q216	Groundwater	4/25/2016 1:30:00 PM	4/25/2016	5/11/2016
N019519-012C	MW-66-165-Q216	Groundwater	4/25/2016 1:30:00 PM	4/25/2016	5/11/2016
N019519-013A	MW-906-Q216	Groundwater	4/25/2016 1:07:00 PM	4/25/2016	5/11/2016
N019519-013B	MW-906-Q216	Groundwater	4/25/2016 1:07:00 PM	4/25/2016	5/11/2016
N019519-013C	MW-906-Q216	Groundwater	4/25/2016 1:07:00 PM	4/25/2016	5/11/2016
N019519-014A	MW-27-085-EB-Q216	Groundwater	4/25/2016 1:20:00 PM	4/25/2016	5/11/2016

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019519
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019519-014B	MW-27-085-EB-Q216	Groundwater	4/25/2016 1:20:00 PM	4/25/2016	5/11/2016
N019519-015A	MW-32-035-EB-Q216	Groundwater	4/25/2016 1:15:00 PM	4/25/2016	5/11/2016
N019519-015B	MW-32-035-EB-Q216	Groundwater	4/25/2016 1:15:00 PM	4/25/2016	5/11/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	4/29/2016 01:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 08:32 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 12:57:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	4/29/2016 04:10 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 08:37 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	4/29/2016 04:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 08:43 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 4:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	4/29/2016 04:48 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/4/2016 12:21 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52M-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 3:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	4/29/2016 05:07 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 08:59 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 3:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	4/29/2016 05:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 09:05 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-702-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/29/2016 06:09 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-703-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/29/2016 06:30 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-701-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 4:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/29/2016 06:49 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 12:57:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	7500	66	200		µg/L	1000	5/2/2016 03:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	6700	0.97	50		µg/L	50	5/4/2016 12:43 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 3:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	660	6.6	20		µg/L	100	4/29/2016 07:27 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	660	0.096	5.0		µg/L	5	5/4/2016 01:00 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 1:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	660	6.6	20		µg/L	100	4/29/2016 08:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	600	0.096	5.0		µg/L	5	5/4/2016 01:05 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019519
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019519-013

Client Sample ID: MW-906-Q216
Collection Date: 4/25/2016 1:07:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/2/2016 02:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 09:38 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-EB-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/29/2016 08:43 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 09:44 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-EB-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/29/2016 09:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 09:49 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R107188**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **PBW**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310787**

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

Sample ID **LCS-R107188**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **LCSW**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.011	0.20	5.000	0	100	90	110				

Sample ID **N019519-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	1.0						0	0	20	

Sample ID **N019519-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.367	1.0	5.000	0	107	90	110				

Sample ID **N019519-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.422	1.0	5.000	0	108	90	110	5.367	1.02	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019535-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.389	0.20	5.000	6.256	103	90	110				

Sample ID **N019519-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.183	1.0	5.000	0	104	90	110				

Sample ID **N019519-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.327	1.0	5.000	0.3840	98.9	90	110				

Sample ID **N019519-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.244	1.0	5.000	0	105	90	110				

Sample ID **N019519-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.235	1.0	5.000	0.3490	97.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019519-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.1073	102	90	110				

Sample ID **N019519-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.158	0.20	1.000	0.1192	104	90	110				

Sample ID **N019519-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.09320	105	90	110				

Sample ID **N019519-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1197.060	20	500.0	664.9	106	90	110				

Sample ID **N019519-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1179.770	20	500.0	661.8	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019519-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0.08970	101	90	110				

Sample ID **N019519-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.08840	105	90	110				

Sample ID **N019519-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.987	1.0	5.000	0	99.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R107222**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **PBW**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312938**

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

Sample ID **LCS-R107222**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **LCSW**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.039	0.20	5.000	0	101	90	110				

Sample ID **N019519-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.447	1.0	5.000	0	109	90	110				

Sample ID **N019519-010ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7175.200	200						7496	4.38	20	

Sample ID **N019519-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12115.800	200	5000	7496	92.4	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019519-010AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12220.100	200	5000	7496	94.5	90	110	12120	0.857	20	

Sample ID **N019533-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.722	0.20	5.000	5.638	102	90	110				

Sample ID **N019533-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.267	1.0	5.000	6.090	104	90	110				

Sample ID **N019533-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36.273	1.0	25.00	10.42	103	90	110				

Sample ID **N019533-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.638	1.0	25.00	15.63	96.0	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019533-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.599	1.0	25.00	23.72	99.5	90	110				

Sample ID **N019533-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	35.643	1.0	25.00	10.97	98.7	90	110				

Sample ID **N019533-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0.1006	97.8	90	110				

Sample ID **N019533-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.028	0.20	1.000	0	103	90	110				

Sample ID **N019533-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.1092	99.3	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019533-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107222
Client ID:	ZZZZZZ	Batch ID:	R107222	TestNo:	EPA 218.6			Analysis Date:	5/2/2016	SeqNo:	2312979

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.179	0.20	1.000	0.1398	104	90	110				

Sample ID	N019533-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107222
Client ID:	ZZZZZZ	Batch ID:	R107222	TestNo:	EPA 218.6			Analysis Date:	5/2/2016	SeqNo:	2318029

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	29.467	1.0	25.00	4.208	101	90	110				

Sample ID	N019533-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107222
Client ID:	ZZZZZZ	Batch ID:	R107222	TestNo:	EPA 218.6			Analysis Date:	5/2/2016	SeqNo:	2318031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.275	1.0	5.000	0	105	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-57203	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/27/2016	RunNo:	107240
Client ID:	PBW	Batch ID:	57203	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/3/2016	SeqNo:	2313917

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-57203	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/27/2016	RunNo:	107240
Client ID:	LCSW	Batch ID:	57203	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/3/2016	SeqNo:	2313918

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.354	1.0	10.00	0	93.5	85	115				

Sample ID	N019494-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/27/2016	RunNo:	107240
Client ID:	ZZZZZZ	Batch ID:	57203	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/3/2016	SeqNo:	2313922

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.305	1.0	10.00	6.980	93.3	75	125				

Sample ID	N019494-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/27/2016	RunNo:	107240
Client ID:	ZZZZZZ	Batch ID:	57203	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/3/2016	SeqNo:	2313923

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.301	1.0	10.00	6.980	93.2	75	125	16.31	0.0269	20	

Sample ID	N019519-004B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/27/2016	RunNo:	108248
Client ID:	ZZZZZZ	Batch ID:	57203	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315121

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.610	5.0	10.00	0	86.1	75	125				

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 12:57:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 12:57:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	23	0.44	1.0		mg/L	20	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 3:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	21	0.44	1.0		mg/L	20	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 1:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	33	0.44	1.0		mg/L	20	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R108307	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	PBW	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317895

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

Sample ID	LCS-R108307	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	LCSW	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.7	85	115				

Sample ID	N019613-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	ZZZZZZ	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317901

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID	N019613-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	ZZZZZZ	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317902

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.495	0.050	0.5000	0	98.9	75	125				

Sample ID	N019613-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	ZZZZZZ	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317903

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.497	0.050	0.5000	0	99.3	75	125	0.4945	0.444	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R108308	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	PBW	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318759

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

Sample ID	LCS-R108308	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	LCSW	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.492	0.050	0.5000	0	98.4	85	115				

Sample ID	N019519-013CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	ZZZZZZ	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318762

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.03580	0	20	

Sample ID	N019519-013CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	ZZZZZZ	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318763

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0.03580	92.9	75	125				

Sample ID	N019519-013CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	ZZZZZZ	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318764

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0.03580	91.5	75	125	0.5005	1.45	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019519
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019519-001

Client Sample ID: MW-22-Q216
Collection Date: 4/25/2016 2:49:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Arsenic	13	0.025	0.10		µg/L	1	5/3/2016 08:32 PM
Manganese	1700	0.55	5.0		µg/L	10	5/4/2016 12:05 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019519
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019519-002

Client Sample ID: MW-27-085-Q216
Collection Date: 4/25/2016 12:57:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Arsenic	1.3	0.025	0.10		µg/L	1	5/3/2016 08:37 PM
Manganese	83	0.055	0.50		µg/L	1	5/3/2016 08:37 PM
Molybdenum	16	0.19	2.5		µg/L	5	5/4/2016 12:10 PM
Selenium	ND	0.028	0.50		µg/L	1	5/3/2016 08:37 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019519
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019519-003

Client Sample ID: MW-32-035-Q216
Collection Date: 4/25/2016 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Arsenic	27	0.025	0.10		µg/L	1	5/3/2016 08:43 PM
Manganese	820	0.28	2.5		µg/L	5	5/4/2016 12:16 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 4:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160504B**	QC Batch: **57203**				PrepDate	**4/27/2016**	Analyst: **CEI**
Arsenic	2.3	0.12	0.50		µg/L	5	5/4/2016 12:21 PM
Manganese	280	0.28	2.5		µg/L	5	5/4/2016 12:21 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019519
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019519-005

Client Sample ID: MW-52M-Q216
Collection Date: 4/25/2016 3:44:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Arsenic	0.92	0.025	0.10		µg/L	1	5/3/2016 08:59 PM
Manganese	150	0.055	0.50		µg/L	1	5/3/2016 08:59 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q216
Lab Order:	N019519	**Collection Date:**	4/25/2016 3:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019519-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503B**	QC Batch: **57203**			PrepDate	**4/27/2016**	Analyst: **CEI**	
Arsenic	0.38	0.025	0.10		µg/L	1	5/3/2016 09:05 PM
Manganese	1400	0.55	5.0		µg/L	10	5/4/2016 12:32 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019519
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019519-010

Client Sample ID: MW-66-230-Q216
Collection Date: 4/25/2016 12:57:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504B**	QC Batch: **57203**			PrepDate	**4/27/2016**	Analyst: **CEI**	
Arsenic	4.3	0.12	0.50		µg/L	5	5/4/2016 12:38 PM
Manganese	3.6	0.055	0.50		µg/L	1	5/3/2016 09:21 PM
Molybdenum	80	0.19	2.5		µg/L	5	5/4/2016 12:38 PM
Selenium	18	0.14	2.5		µg/L	5	5/4/2016 12:38 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019519
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019519-011

Client Sample ID: MW-69-195-Q216
Collection Date: 4/25/2016 3:16:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	5/3/2016 09:27 PM
Manganese	ND	0.055	0.50		µg/L	1	5/3/2016 09:27 PM
Molybdenum	80	0.039	0.50		µg/L	1	5/3/2016 09:27 PM
Selenium	13	0.028	0.50		µg/L	1	5/3/2016 09:27 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019519
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019519-012

Client Sample ID: MW-66-165-Q216
Collection Date: 4/25/2016 1:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Arsenic	1.1	0.025	0.10		µg/L	1	5/3/2016 09:33 PM
Manganese	ND	0.055	0.50		µg/L	1	5/3/2016 09:33 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	5/3/2016 09:33 PM
Selenium	32	0.028	0.50		µg/L	1	5/3/2016 09:33 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019519
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019519-013

Client Sample ID: MW-906-Q216
Collection Date: 4/25/2016 1:07:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57203**			PrepDate	**4/27/2016**		Analyst: **CEI**
Arsenic	1.3	0.025	0.10		µg/L	1	5/3/2016 09:38 PM
Manganese	82	0.055	0.50		µg/L	1	5/3/2016 09:38 PM
Molybdenum	16	0.19	2.5		µg/L	5	5/4/2016 01:11 PM
Selenium	ND	0.028	0.50		µg/L	1	5/3/2016 09:38 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57203**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2016**	RunNo: **107241**
Client ID: **PBW**	Batch ID: **57203**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2314922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Sample ID **LCS-57203**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2016**	RunNo: **107241**
Client ID: **LCSW**	Batch ID: **57203**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2314923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.395	0.10	10.00	0	93.9	85	115				
Manganese	92.612	0.50	100.0	0	92.6	85	115				
Molybdenum	9.313	0.50	10.00	0	93.1	85	115				
Selenium	9.399	0.50	10.00	0	94.0	85	115				

Sample ID **N019494-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2016**	RunNo: **107241**
Client ID: **ZZZZZZ**	Batch ID: **57203**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2314927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.118	0.10	10.00	2.312	98.1	75	125				
Molybdenum	33.342	0.50	10.00	23.25	101	75	125				
Selenium	9.599	0.50	10.00	0	96.0	75	125				

Sample ID **N019494-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2016**	RunNo: **107241**
Client ID: **ZZZZZZ**	Batch ID: **57203**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2314928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.876	0.10	10.00	2.312	95.6	75	125	12.12	2.02	20	
Molybdenum	33.456	0.50	10.00	23.25	102	75	125	33.34	0.341	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019519
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N019494-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2016**	RunNo: **107241**
Client ID: **ZZZZZZ**	Batch ID: **57203**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2314928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.394	0.50	10.00	0	93.9	75	125	9.599	2.16	20	

Sample ID **N019494-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2016**	RunNo: **108249**
Client ID: **ZZZZZZ**	Batch ID: **57203**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2315164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	2052.756	12	100.0	2049	3.61	75	125				S

Sample ID **N019494-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2016**	RunNo: **108249**
Client ID: **ZZZZZZ**	Batch ID: **57203**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2315166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	2078.497	12	100.0	2049	29.4	75	125	2053	1.25	20	S

Sample ID **N019519-004B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/27/2016**	RunNo: **108249**
Client ID: **ZZZZZZ**	Batch ID: **57203**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2315177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.872	0.50	10.00	2.285	95.9	75	125				
Manganese	364.037	2.5	100.0	280.2	83.9	75	125				
Molybdenum	90.335	2.5	10.00	79.71	106	75	125				
Selenium	8.932	2.5	10.00	0	89.3	75	125				

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y / N): 1. Chilled; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 1.4°C
Submitted By:		Phone: 949-727-1400, ext 200 Fax:	
Title: sample Tech	Phone: 916-786-3302 Fax:		
Signature: Date: 4/25/16 *I hereby authorize ASSET Labs to perform the tests indicated below.*	Sampled By: Jacob Mathews *I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*	Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface	Courier: Tracking No.:
Project Name: PG&E Topock - GMP	Signature: Date: 4/25/16		
Project Number: RC000753.0801			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2 X 250 mL poly)	Metals Dissolved (6020AFF) As; HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Cr; HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Mn; HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Mo; HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Se; HNO3 (500 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019519 - 01	MW-22-Q216	4/25/2016	1449		X		X	X	X				E	2	P	BN	
2	- 02	MW-27-085-Q216	4/25/2016	1257			X	X	X	X	X	X	X	E	4	P	BN	
3	- 03	MW-32-035-Q216	4/25/2016	1300			X	X	X	X				E	3	P	BN	
4	- 04	MW-52D-Q216	4/25/2016	1615			X	X	X	X				E	3	P	BN	
5	- 05	MW-52M-Q216	4/25/2016	1544			X	X	X	X				E	3	P	BN	
6	- 06	MW-52S-Q216	4/25/2016	1535			X	X	X	X				E	3	P	BN	
7	- 07	MW-702-Q216	4/25/2016	1320		X								E	1	P	B	
8	- 08	MW-703-Q216	4/25/2016	1325		X								E	1	P	B	
9	- 09	MW-701-Q216	4/25/2016	1615		X								E	1	P	B	
10	- 10	MW-66-230-Q216	4/25/2016	1257		X		X	X	X	X	X	X	E	3	P	BN	
11	- 11	MW-69-195-Q216	4/25/2016	1516		X		X	X	X	X	X	X	E	3	P	BN	
12	- 12	MW-66-165-Q216	4/25/2016	1330		X		X	X	X	X	X	X	E	3	P	BN	
13	- 13	MW-906-Q216	4/25/2016	1307			X	X	X	X	X	X	X	E	4	P	BN	
14	- 14	MW-27-085-EB-Q216	4/25/2016	1320		X			X					E	2	P	BN	
15	- 15	MW-32-035-EB-Q216	4/25/2016	1315		X			X					E	2	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time:	Relinquished by (Signature and Printed Name)	Date/Time:
Nora Tay	4/25/16 1655		4/25/16 1655
	4/25/16 1905		4/25/16 1905

Turn Around Time (TAT)

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

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

Special Instruction:

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

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/25/2016	Workorder:	N019519
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments:

Checklist Completed By: HG For: 4/27/2016

Reviewed By: 05/05/16

ASSET Laboratories

WORK ORDER Summary

26-Apr-16

WorkOrder: N019519

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019519-001A	MW-22-Q216	4/25/2016 2:49:00 PM	5/9/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-001B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-002A	MW-27-085-Q216	4/25/2016 12:57:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-002B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-002C			5/9/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019519-003A	MW-32-035-Q216	4/25/2016 1:00:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-003B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-004A	MW-52D-Q216	4/25/2016 4:15:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-004B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-005A	MW-52M-Q216	4/25/2016 3:44:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-005B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-006A	MW-52S-Q216	4/25/2016 3:35:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-16

WorkOrder: N019519

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019519-006B	MW-52S-Q216	4/25/2016 3:35:00 PM	5/9/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-007A	MW-702-Q216	4/25/2016 1:20:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-008A	MW-703-Q216	4/25/2016 1:25:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-009A	MW-701-Q216	4/25/2016 4:15:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-010A	MW-66-230-Q216	4/25/2016 12:57:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-010B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-010C			5/9/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019519-011A	MW-69-195-Q216	4/25/2016 3:16:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-011B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-011C			5/9/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019519-012A	MW-66-165-Q216	4/25/2016 1:30:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-012B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-012C			5/9/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-16

WorkOrder: N019519

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019519-013A	MW-906-Q216	4/25/2016 1:07:00 PM	5/9/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-013B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-013C			5/9/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019519-014A	MW-27-085-EB-Q216	4/25/2016 1:20:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-014B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-015A	MW-32-035-EB-Q216	4/25/2016 1:15:00 PM	5/9/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019519-015B			5/9/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019519-016A	FOLDER		5/9/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/9/2016		Folder	Folder	☐	☐	☐	LAB

May 12, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019533

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 26, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N019533-001, N019533-003 ,N019533-008 and N019533-015 due to matrix interference. Samples were analyzed at lower dilution however retention time criteria and matrix spike were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N019533-002, N019533-003, N019533-004, N019533-007, N019533-008 and N019533-015 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) is outside recovery criteria for some analytes on QC sample N019533-011B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Manganese on QC sample N019533-011B-MS since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) is outside recovery criteria on QC sample N019533-001CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *12-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019533
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019533-001A	MW-33-040-Q216	Groundwater	4/26/2016 12:00:00 PM	4/26/2016	5/12/2016
N019533-001B	MW-33-040-Q216	Groundwater	4/26/2016 12:00:00 PM	4/26/2016	5/12/2016
N019533-001C	MW-33-040-Q216	Groundwater	4/26/2016 12:00:00 PM	4/26/2016	5/12/2016
N019533-002A	MW-33-090-Q216	Groundwater	4/26/2016 12:01:00 PM	4/26/2016	5/12/2016
N019533-002B	MW-33-090-Q216	Groundwater	4/26/2016 12:01:00 PM	4/26/2016	5/12/2016
N019533-002C	MW-33-090-Q216	Groundwater	4/26/2016 12:01:00 PM	4/26/2016	5/12/2016
N019533-003A	MW-33-150-Q216	Groundwater	4/26/2016 10:50:00 AM	4/26/2016	5/12/2016
N019533-003B	MW-33-150-Q216	Groundwater	4/26/2016 10:50:00 AM	4/26/2016	5/12/2016
N019533-003C	MW-33-150-Q216	Groundwater	4/26/2016 10:50:00 AM	4/26/2016	5/12/2016
N019533-004A	MW-33-210-Q216	Groundwater	4/26/2016 10:48:00 AM	4/26/2016	5/12/2016
N019533-004B	MW-33-210-Q216	Groundwater	4/26/2016 10:48:00 AM	4/26/2016	5/12/2016
N019533-004C	MW-33-210-Q216	Groundwater	4/26/2016 10:48:00 AM	4/26/2016	5/12/2016
N019533-005A	MW-47-055-Q216	Groundwater	4/26/2016 9:48:00 AM	4/26/2016	5/12/2016
N019533-005B	MW-47-055-Q216	Groundwater	4/26/2016 9:48:00 AM	4/26/2016	5/12/2016
N019533-006A	MW-47-115-Q216	Groundwater	4/26/2016 9:47:00 AM	4/26/2016	5/12/2016
N019533-006B	MW-47-115-Q216	Groundwater	4/26/2016 9:47:00 AM	4/26/2016	5/12/2016
N019533-007A	MW-46-175-Q216	Groundwater	4/26/2016 1:23:00 PM	4/26/2016	5/12/2016
N019533-007B	MW-46-175-Q216	Groundwater	4/26/2016 1:23:00 PM	4/26/2016	5/12/2016
N019533-007C	MW-46-175-Q216	Groundwater	4/26/2016 1:23:00 PM	4/26/2016	5/12/2016
N019533-008A	MW-46-205-Q216	Groundwater	4/26/2016 1:10:00 PM	4/26/2016	5/12/2016
N019533-008B	MW-46-205-Q216	Groundwater	4/26/2016 1:10:00 PM	4/26/2016	5/12/2016
N019533-009A	MW-28-025-Q216	Groundwater	4/26/2016 2:40:00 PM	4/26/2016	5/12/2016
N019533-009B	MW-28-025-Q216	Groundwater	4/26/2016 2:40:00 PM	4/26/2016	5/12/2016
N019533-009C	MW-28-025-Q216	Groundwater	4/26/2016 2:40:00 PM	4/26/2016	5/12/2016
N019533-010A	MW-28-090-Q216	Groundwater	4/26/2016 2:40:00 PM	4/26/2016	5/12/2016
N019533-010B	MW-28-090-Q216	Groundwater	4/26/2016 2:40:00 PM	4/26/2016	5/12/2016
N019533-010C	MW-28-090-Q216	Groundwater	4/26/2016 2:40:00 PM	4/26/2016	5/12/2016
N019533-011A	MW-29-Q216	Groundwater	4/26/2016 3:45:00 PM	4/26/2016	5/12/2016
N019533-011B	MW-29-Q216	Groundwater	4/26/2016 3:45:00 PM	4/26/2016	5/12/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019533
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019533-011C	MW-29-Q216	Groundwater	4/26/2016 3:45:00 PM	4/26/2016	5/12/2016
N019533-012A	MW-28-090-EB-Q216	Groundwater	4/26/2016 2:02:00 PM	4/26/2016	5/12/2016
N019533-012B	MW-28-090-EB-Q216	Groundwater	4/26/2016 2:02:00 PM	4/26/2016	5/12/2016
N019533-013A	MW-29-EB-Q216	Groundwater	4/26/2016 2:55:00 PM	4/26/2016	5/12/2016
N019533-013B	MW-29-EB-Q216	Groundwater	4/26/2016 2:55:00 PM	4/26/2016	5/12/2016
N019533-014A	MW-34-080-Q216	Groundwater	4/26/2016 2:54:00 PM	4/26/2016	5/12/2016
N019533-014B	MW-34-080-Q216	Groundwater	4/26/2016 2:54:00 PM	4/26/2016	5/12/2016
N019533-015A	MW-34-100-Q216	Groundwater	4/26/2016 2:56:00 PM	4/26/2016	5/12/2016
N019533-015B	MW-34-100-Q216	Groundwater	4/26/2016 2:56:00 PM	4/26/2016	5/12/2016
N019533-015C	MW-34-100-Q216	Groundwater	4/26/2016 2:56:00 PM	4/26/2016	5/12/2016

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

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 12:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/2/2016 10:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 10:06 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	5.6	0.066	0.20		µg/L	1	5/2/2016 04:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	5.2	0.019	1.0		µg/L	1	5/3/2016 11:01 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	6.1	0.33	1.0		µg/L	5	5/2/2016 05:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	5.2	0.019	1.0		µg/L	1	5/3/2016 11:07 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	10	0.33	1.0		µg/L	5	5/2/2016 05:57 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	10	0.096	5.0		µg/L	5	5/4/2016 01:27 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	16	0.33	1.0		µg/L	5	5/2/2016 06:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	5/3/2016 11:18 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 9:47:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	24	0.33	1.0		µg/L	5	5/2/2016 06:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	22	0.019	1.0		µg/L	1	5/3/2016 11:23 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 1:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	11	0.33	1.0		µg/L	5	5/2/2016 07:12 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	11	0.096	5.0		µg/L	5	5/4/2016 01:33 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 1:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160506A**	QC Batch: **R108314**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	1.2	0.33	1.0		µg/L	5	5/6/2016 02:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/4/2016 01:38 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 07:49 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 11:51 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 08:08 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2016 11:57 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160506A**	QC Batch: **R108314**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/6/2016 01:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 01:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-EB-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:02:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 09:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 12:13 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 09:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 12:19 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160506A**	QC Batch: **R108314**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/6/2016 01:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 12:25 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:56:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160502A**	QC Batch: **R107222**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	4.2	0.33	1.0		µg/L	5	5/2/2016 10:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503A**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	4.6	0.019	1.0		µg/L	1	5/4/2016 12:30 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R107222**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **PBW**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312938**

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

Sample ID **LCS-R107222**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **LCSW**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.039	0.20	5.000	0	101	90	110				

Sample ID **N019519-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.447	1.0	5.000	0	109	90	110				

Sample ID **N019519-010ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7175.200	200						7496	4.38	20	

Sample ID **N019519-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12115.800	200	5000	7496	92.4	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019519-010AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107222**
Client ID: **ZZZZZZ** Batch ID: **R107222** TestNo: **EPA 218.6** Analysis Date: **5/2/2016** SeqNo: **2312949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12220.100	200	5000	7496	94.5	90	110	12120	0.857	20	

Sample ID **N019533-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107222**
Client ID: **ZZZZZZ** Batch ID: **R107222** TestNo: **EPA 218.6** Analysis Date: **5/2/2016** SeqNo: **2312951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.722	0.20	5.000	5.638	102	90	110				

Sample ID **N019533-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107222**
Client ID: **ZZZZZZ** Batch ID: **R107222** TestNo: **EPA 218.6** Analysis Date: **5/2/2016** SeqNo: **2312956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.267	1.0	5.000	6.090	104	90	110				

Sample ID **N019533-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107222**
Client ID: **ZZZZZZ** Batch ID: **R107222** TestNo: **EPA 218.6** Analysis Date: **5/2/2016** SeqNo: **2312959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36.273	1.0	25.00	10.42	103	90	110				

Sample ID **N019533-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107222**
Client ID: **ZZZZZZ** Batch ID: **R107222** TestNo: **EPA 218.6** Analysis Date: **5/2/2016** SeqNo: **2312961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.638	1.0	25.00	15.63	96.0	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019533-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.599	1.0	25.00	23.72	99.5	90	110				

Sample ID **N019533-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	35.643	1.0	25.00	10.97	98.7	90	110				

Sample ID **N019533-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0.1006	97.8	90	110				

Sample ID **N019533-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.028	0.20	1.000	0	103	90	110				

Sample ID **N019533-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.1092	99.3	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019533-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.179	0.20	1.000	0.1398	104	90	110				

Sample ID **N019533-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2318029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	29.467	1.0	25.00	4.208	101	90	110				

Sample ID **N019533-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107222**
Client ID: **ZZZZZZ**	Batch ID: **R107222**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2318031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.275	1.0	5.000	0	105	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R108314**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108314**
Client ID: **PBW**	Batch ID: **R108314**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318305**

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

Sample ID **LCS-R108314**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108314**
Client ID: **LCSW**	Batch ID: **R108314**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.066	0.20	5.000	0	101	90	110				

Sample ID **N019644-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108314**
Client ID: **ZZZZZZ**	Batch ID: **R108314**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.670	0.20						0.6732	0.521	20	

Sample ID **N019644-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108314**
Client ID: **ZZZZZZ**	Batch ID: **R108314**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.811	0.20	5.000	0.6732	103	90	110				

Sample ID **N019644-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108314**
Client ID: **ZZZZZZ**	Batch ID: **R108314**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.779	0.20	5.000	0.6732	102	90	110	5.811	0.547	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019533-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108314**
Client ID: **ZZZZZZ**	Batch ID: **R108314**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.179	0.20	1.000	0.1297	105	90	110				

Sample ID **N019533-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108314**
Client ID: **ZZZZZZ**	Batch ID: **R108314**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.136	0.20	1.000	0.1070	103	90	110				

Sample ID **N019533-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108314**
Client ID: **ZZZZZZ**	Batch ID: **R108314**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	26.375	1.0	25.00	1.181	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-57208**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **107240**
Client ID: **PBW**	Batch ID: **57208**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2313947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.141	1.0									

Sample ID **LCS-57208**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **107240**
Client ID: **LCSW**	Batch ID: **57208**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2313948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.763	1.0	10.00	0	97.6	85	115				

Sample ID **N019533-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **107240**
Client ID: **ZZZZZZ**	Batch ID: **57208**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2313957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.461	1.0	10.00	0.1155	83.5	75	125				

Sample ID **N019533-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **107240**
Client ID: **ZZZZZZ**	Batch ID: **57208**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2313958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.530	1.0	10.00	0.1155	84.1	75	125	8.461	0.808	20	

Sample ID **N019533-011B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108248**
Client ID: **ZZZZZZ**	Batch ID: **57208**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2315139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	6.842	1.0	10.00	0	68.4	75	125				S

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 12:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.5	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.7	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 1:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.21	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:56:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R108305	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108305
Client ID:	PBW	Batch ID:	R108305	TestNo:	SM4500-NO3			Analysis Date:	4/29/2016	SeqNo:	2317821

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

Sample ID	LCS-R108305	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108305
Client ID:	LCSW	Batch ID:	R108305	TestNo:	SM4500-NO3			Analysis Date:	4/29/2016	SeqNo:	2317823

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID	N019533-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108305
Client ID:	ZZZZZZ	Batch ID:	R108305	TestNo:	SM4500-NO3			Analysis Date:	4/29/2016	SeqNo:	2317826

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID	N019533-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108305
Client ID:	ZZZZZZ	Batch ID:	R108305	TestNo:	SM4500-NO3			Analysis Date:	4/29/2016	SeqNo:	2317828

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.635	0.050	0.5000	0	127	75	125				S

Sample ID	N019533-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108305
Client ID:	ZZZZZZ	Batch ID:	R108305	TestNo:	SM4500-NO3			Analysis Date:	4/29/2016	SeqNo:	2317829

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.614	0.050	0.5000	0	123	75	125	0.6354	3.49	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019533
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019533-001

Client Sample ID: MW-33-040-Q216
Collection Date: 4/26/2016 12:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Arsenic	12	0.025	0.10		µg/L	1	5/3/2016 10:06 PM
Manganese	13	0.056	0.50		µg/L	1	5/3/2016 10:06 PM
Molybdenum	110	0.039	0.50		µg/L	1	5/3/2016 10:06 PM
Selenium	ND	0.028	0.50		µg/L	1	5/3/2016 10:06 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019533
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019533-002

Client Sample ID: MW-33-090-Q216
Collection Date: 4/26/2016 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Arsenic	1.0	0.025	0.10		µg/L	1	5/3/2016 11:01 PM
Manganese	3.2	0.056	0.50		µg/L	1	5/3/2016 11:01 PM
Molybdenum	10	0.19	2.5		µg/L	5	5/4/2016 01:17 PM
Selenium	ND	0.14	2.5		µg/L	5	5/4/2016 01:17 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019533
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019533-003

Client Sample ID: MW-33-150-Q216
Collection Date: 4/26/2016 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504B**	QC Batch: **57208**			PrepDate	**4/28/2016**	Analyst: **CEI**	
Arsenic	1.3	0.12	0.50		µg/L	5	5/4/2016 01:22 PM
Manganese	0.97	0.056	0.50		µg/L	1	5/3/2016 11:07 PM
Molybdenum	42	0.19	2.5		µg/L	5	5/4/2016 01:22 PM
Selenium	ND	0.14	2.5		µg/L	5	5/4/2016 01:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160504B**	QC Batch: **57208**				PrepDate	**4/28/2016**	Analyst: **CEI**
Arsenic	1.0	0.12	0.50		µg/L	5	5/4/2016 02:56 PM
Manganese	ND	0.28	2.5		µg/L	5	5/4/2016 01:27 PM
Molybdenum	16	0.19	2.5		µg/L	5	5/4/2016 01:27 PM
Selenium	ND	0.14	2.5		µg/L	5	5/4/2016 01:27 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019533
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019533-005

Client Sample ID: MW-47-055-Q216
Collection Date: 4/26/2016 9:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57208**			PrepDate	**4/28/2016**	Analyst: **CEI**	
Arsenic	1.1	0.025	0.10		µg/L	1	5/3/2016 11:18 PM
Manganese	ND	0.056	0.50		µg/L	1	5/3/2016 11:18 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 1:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504B**	QC Batch: **57208**			PrepDate	**4/28/2016**		Analyst: **CEI**
Molybdenum	150	0.19	2.5		µg/L	5	5/4/2016 01:33 PM
Selenium	ND	0.14	2.5		µg/L	5	5/4/2016 01:33 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160503B**	QC Batch: **57208**				PrepDate	**4/28/2016**	Analyst: **CEI**
Arsenic	1.0	0.025	0.10		µg/L	1	5/3/2016 11:51 PM
Manganese	9.6	0.056	0.50		µg/L	1	5/3/2016 11:51 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/11/2016 01:30 PM
Selenium	ND	0.028	0.50		µg/L	1	5/3/2016 11:51 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019533
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019533-010

Client Sample ID: MW-28-090-Q216
Collection Date: 4/26/2016 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57208**			PrepDate	**4/28/2016**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/3/2016 11:57 PM
Manganese	240	0.28	2.5		µg/L	5	5/4/2016 01:44 PM
Molybdenum	23	0.039	0.50		µg/L	1	5/3/2016 11:57 PM
Selenium	ND	0.028	0.50		µg/L	1	5/3/2016 11:57 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019533
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019533-011

Client Sample ID: MW-29-Q216
Collection Date: 4/26/2016 3:45:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160503B** QC Batch: **57208** PrepDate **4/28/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	13	0.025	0.10		µg/L	1	5/4/2016 12:02 AM
Manganese	450	0.28	2.5		µg/L	5	5/4/2016 02:11 PM
Molybdenum	20	0.039	0.50		µg/L	1	5/4/2016 12:02 AM
Selenium	4.9	0.028	0.50		µg/L	1	5/4/2016 12:02 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q216
Lab Order:	N019533	**Collection Date:**	4/26/2016 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019533-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160503B**	QC Batch: **57208**				PrepDate	**4/28/2016**	Analyst: **CEI**
Arsenic	1.3	0.025	0.10		µg/L	1	5/4/2016 12:25 AM
Manganese	38	0.056	0.50		µg/L	1	5/4/2016 12:25 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019533
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019533-015

Client Sample ID: MW-34-100-Q216
Collection Date: 4/26/2016 2:56:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160503B**	QC Batch: **57208**			PrepDate	**4/28/2016**	Analyst: **CEI**	
Arsenic	1.1	0.025	0.10		µg/L	1	5/4/2016 12:30 AM
Manganese	57	0.056	0.50		µg/L	1	5/4/2016 12:30 AM
Molybdenum	41	0.19	2.5		µg/L	5	5/4/2016 02:23 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2016 12:30 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57208**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **107241**
Client ID: **PBW**	Batch ID: **57208**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2314952**

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

Sample ID **LCS-57208**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **107241**
Client ID: **LCSW**	Batch ID: **57208**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2314953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.731	0.10	10.00	0	97.3	85	115				
Manganese	94.080	0.50	100.0	0	94.1	85	115				
Molybdenum	9.392	0.50	10.00	0	93.9	85	115				
Selenium	9.857	0.50	10.00	0	98.6	85	115				

Sample ID **N019533-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **107241**
Client ID: **ZZZZZZ**	Batch ID: **57208**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2314962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.955	0.10	10.00	11.91	90.4	75	125				
Manganese	97.828	0.50	100.0	12.54	85.3	75	125				
Molybdenum	120.152	0.50	10.00	111.9	82.5	75	125				
Selenium	9.086	0.50	10.00	0.1888	89.0	75	125				

Sample ID **N019533-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **107241**
Client ID: **ZZZZZZ**	Batch ID: **57208**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2016**	SeqNo: **2314963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.973	0.10	10.00	11.91	90.6	75	125	20.95	0.0864	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019533
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019533-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	107241
Client ID:	ZZZZZZ	Batch ID:	57208	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/3/2016	SeqNo:	2314963

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	97.388	0.50	100.0	12.54	84.8	75	125	97.83	0.451	20	
Molybdenum	120.024	0.50	10.00	111.9	81.2	75	125	120.2	0.107	20	
Selenium	9.118	0.50	10.00	0.1888	89.3	75	125	9.086	0.349	20	

Sample ID	N019533-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	107241
Client ID:	ZZZZZZ	Batch ID:	57208	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2314976

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.677	0.10	10.00	13.20	44.8	75	125				S
Molybdenum	23.967	0.50	10.00	20.45	35.2	75	125				S
Selenium	10.819	0.50	10.00	4.907	59.1	75	125				S

Sample ID	N019533-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108249
Client ID:	ZZZZZZ	Batch ID:	57208	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	452.058	2.5	100.0	450.7	1.39	75	125				S

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Others ✓ (Specify: RWQCB)
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RWQCB ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Global ID:
Submitted By:		Phone: 949-727-1400, ext 200 Fax:	Specify State:
Title:	Phone: 916-786-3302 Fax:		Sample Temp: 3.1
Signature: Date: 4/26/16 *I hereby authorize ASSET Labs to perform the tests indicated below.*	Sampled By: Nara Tey *I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*		
Project Name: PG&E Topock - GMP	Signature: Date: 4/26/16		
Project Number: RC000753.0801			

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	2 X 250 mL poly Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	500 mL poly Metals Dissolved (6020AFF) As; HNO3	500 mL poly Metals Dissolved (6020AFF) Cr; HNO3	500 mL poly Metals Dissolved (6020AFF) Mn; HNO3	500 mL poly Metals Dissolved (6020AFF) Mo; HNO3	500 mL poly Metals Dissolved (6020AFF) Se; HNO3	125 mL poly Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019533 - 01	MW-33-040-Q216	4/26/2016	1200			X	X	X	X	X	X	X	E	4	P	BNS	
2	- 02	MW-33-090-Q216	4/26/2016	1201		X		X	X	X	X	X	X	E	3	P	BNS	
3	- 03	MW-33-150-Q216	4/26/2016	1050		X		X	X	X	X	X	X	E	3	P	BNS	
4	- 04	MW-33-210-Q216	4/26/2016	1048		X		X	X	X	X	X	X	E	3	P	BNS	
5	- 05	MW-47-055-Q216	4/26/2016	0948		X		X	X	X				E	2	P	BN	
6	- 06	MW-47-115-Q216	4/26/2016	0947		X			X					E	2	P	BN	
7	- 07	MW-46-175-Q216	4/26/2016	1323		X			X		X	X	X	E	3	P	BNS	
8	- 08	MW-46-205-Q216	4/26/2016	1310		X			X					E	2	P	BN	
9	- 09	MW-28-025-Q216	4/26/2016	1440			X	X	X	X	X	X	X	E	4	P	BNS	
10	- 10	MW-28-090-Q216	4/26/2016	1440			X	X	X	X	X	X	X	E	4	P	BNS	
11	- 11	MW-29-Q216	4/26/2016	1545			X	X	X	X	X	X	X	E	4	P	BNS	
12	- 12	MW-28-090-EB-Q216	4/26/2016	1402		X			X					E	2	P	BN	
13	- 13	MW-29-EB-Q216	4/26/2016	1455		X			X					E	2	P	BN	
14	- 14	MW-34-080-Q216	4/26/2016	1454			X	X	X	X				E	3	P	BN	
15	- 15	MW-34-100-Q216	4/26/2016	1456		X		X	X	X	X	X	X	E	3	P	BNS	

Courier:
Tracking No.:

Reliquished by (Signature and Printed Name):	Date/Time: 4/26/16 1700
Reliquished by (Signature and Printed Name):	Date/Time: 4/26/16 1700
Reliquished by (Signature and Printed Name):	Date/Time: 4/26/16 1912
Reliquished by (Signature and Printed Name):	Date/Time: 4/26/16 1912
Reliquished by (Signature and Printed Name):	Date/Time:
Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

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

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

Special Instruction:

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

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

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

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/26/2016	Workorder:	N019533
Rep sample Temp (Deg C):	3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments:

Checklist Completed By: HG 4/28/2016

Reviewed By: 05/05/16

ASSET Laboratories

WORK ORDER Summary

27-Apr-16

WorkOrder: N019533

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019533-001A	MW-33-040-Q216	4/26/2016 12:00:00 PM	5/10/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-001B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-001C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019533-002A	MW-33-090-Q216	4/26/2016 12:01:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-002B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-002C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019533-003A	MW-33-150-Q216	4/26/2016 10:50:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-003B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-003C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019533-004A	MW-33-210-Q216	4/26/2016 10:48:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-004B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-004C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019533-005A	MW-47-055-Q216	4/26/2016 9:48:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-16

WorkOrder: N019533

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019533-005B	MW-47-055-Q216	4/26/2016 9:48:00 AM	5/10/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-006A	MW-47-115-Q216	4/26/2016 9:47:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-006B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-007A	MW-46-175-Q216	4/26/2016 1:23:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-007B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-007C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019533-008A	MW-46-205-Q216	4/26/2016 1:10:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-008B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-009A	MW-28-025-Q216	4/26/2016 2:40:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-009B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-009C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019533-010A	MW-28-090-Q216		5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-010B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-16

WorkOrder: N019533

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019533-010B	MW-28-090-Q216	4/26/2016 2:40:00 PM	5/10/2016	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-010C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019533-011A	MW-29-Q216	4/26/2016 3:45:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-011B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-011C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019533-012A	MW-28-090-EB-Q216	4/26/2016 2:02:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-012B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-013A	MW-29-EB-Q216	4/26/2016 2:55:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-013B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-014A	MW-34-080-Q216	4/26/2016 2:54:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-014B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-015A	MW-34-100-Q216	4/26/2016 2:56:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019533-015B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-16

WorkOrder: N019533

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019533-015B	MW-34-100-Q216	4/26/2016 2:56:00 PM	5/10/2016	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019533-015C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019533-016A	FOLDER		5/10/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/10/2016		Folder	Folder	☐	☐	☐	LAB

May 12, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019534

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 26, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.6 ug/L) and hexavalent chromium (0.44 ug/L) for sample N019534-004 (MW-42-055-Q216) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (15 ug/L) and hexavalent chromium (0 ug/L) for sample N019534-006 (MW-44-070-Q216) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (5.9 ug/L) for sample N019534-008 (MW-44-125-Q216) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N019534-003, N019534-007, N019534-008 and N019534-010 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.6 ug/L) and hexavalent chromium (0.44 ug/L) for sample N019534-004 (MW-42-055-Q216) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.7 and 1.9 ug/L, respectively. Since these

data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (15 ug/L) and hexavalent chromium (0 ug/L) for sample N019534-006 (MW-44-070-Q216) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 17 and 16 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (5.9 ug/L) for sample N019534-008 (MW-44-125-Q216) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 14 and 15 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) is outside recovery criteria on QC sample N019533-001CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *12-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019534
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019534-001A	MW-36-090-Q216	Groundwater	4/26/2016 12:12:00 PM	4/26/2016	5/12/2016
N019534-001B	MW-36-090-Q216	Groundwater	4/26/2016 12:12:00 PM	4/26/2016	5/12/2016
N019534-002A	MW-36-100-Q216	Groundwater	4/26/2016 12:25:00 PM	4/26/2016	5/12/2016
N019534-002B	MW-36-100-Q216	Groundwater	4/26/2016 12:25:00 PM	4/26/2016	5/12/2016
N019534-002C	MW-36-100-Q216	Groundwater	4/26/2016 12:25:00 PM	4/26/2016	5/12/2016
N019534-003A	MW-39-100-Q216	Groundwater	4/26/2016 3:45:00 PM	4/26/2016	5/12/2016
N019534-003B	MW-39-100-Q216	Groundwater	4/26/2016 3:45:00 PM	4/26/2016	5/12/2016
N019534-003C	MW-39-100-Q216	Groundwater	4/26/2016 3:45:00 PM	4/26/2016	5/12/2016
N019534-004A	MW-42-055-Q216	Groundwater	4/26/2016 1:30:00 PM	4/26/2016	5/12/2016
N019534-004B	MW-42-055-Q216	Groundwater	4/26/2016 1:30:00 PM	4/26/2016	5/12/2016
N019534-005A	MW-42-065-Q216	Groundwater	4/26/2016 1:30:00 PM	4/26/2016	5/12/2016
N019534-005B	MW-42-065-Q216	Groundwater	4/26/2016 1:30:00 PM	4/26/2016	5/12/2016
N019534-006A	MW-44-070-Q216	Groundwater	4/26/2016 11:01:00 AM	4/26/2016	5/12/2016
N019534-006B	MW-44-070-Q216	Groundwater	4/26/2016 11:01:00 AM	4/26/2016	5/12/2016
N019534-007A	MW-44-115-Q216	Groundwater	4/26/2016 9:54:00 AM	4/26/2016	5/12/2016
N019534-007B	MW-44-115-Q216	Groundwater	4/26/2016 9:54:00 AM	4/26/2016	5/12/2016
N019534-007C	MW-44-115-Q216	Groundwater	4/26/2016 9:54:00 AM	4/26/2016	5/12/2016
N019534-008A	MW-44-125-Q216	Groundwater	4/26/2016 9:55:00 AM	4/26/2016	5/12/2016
N019534-008B	MW-44-125-Q216	Groundwater	4/26/2016 9:55:00 AM	4/26/2016	5/12/2016
N019534-008C	MW-44-125-Q216	Groundwater	4/26/2016 9:55:00 AM	4/26/2016	5/12/2016
N019534-009A	MW-907-Q216	Groundwater	4/26/2016 12:10:00 PM	4/26/2016	5/12/2016
N019534-009B	MW-907-Q216	Groundwater	4/26/2016 12:10:00 PM	4/26/2016	5/12/2016
N019534-009C	MW-907-Q216	Groundwater	4/26/2016 12:10:00 PM	4/26/2016	5/12/2016
N019534-010A	MW-909-Q216	Groundwater	4/26/2016 3:50:00 PM	4/26/2016	5/12/2016
N019534-010B	MW-909-Q216	Groundwater	4/26/2016 3:50:00 PM	4/26/2016	5/12/2016
N019534-010C	MW-909-Q216	Groundwater	4/26/2016 3:50:00 PM	4/26/2016	5/12/2016
N019534-011A	MW-706-Q216	Groundwater	4/26/2016 4:30:00 PM	4/26/2016	5/12/2016
N019534-012A	MW-704-Q216	Groundwater	4/26/2016 4:30:00 PM	4/26/2016	5/12/2016
N019534-013A	MW-705-Q216	Groundwater	4/26/2016 3:30:00 PM	4/26/2016	5/12/2016

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019534
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019534-014A	MW-707-Q216	Groundwater	4/26/2016 4:00:00 PM	4/26/2016	5/12/2016
N019534-015A	MW-33-040-EB-Q216	Groundwater	4/26/2016 11:30:00 AM	4/26/2016	5/12/2016
N019534-015B	MW-33-040-EB-Q216	Groundwater	4/26/2016 11:30:00 AM	4/26/2016	5/12/2016

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 12:12:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 01:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 06:45 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	38	0.66	2.0		µg/L	10	5/2/2016 04:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	42	0.019	1.0		µg/L	1	5/4/2016 07:12 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	81	0.66	2.0		µg/L	10	5/2/2016 04:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	79	0.019	1.0		µg/L	1	5/4/2016 07:18 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 1:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	0.44	0.066	0.20		µg/L	1	5/2/2016 03:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	1.6	0.019	1.0		µg/L	1	5/4/2016 07:23 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 1:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 03:57 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 07:40 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-006

Client Sample ID: MW-44-070-Q216
Collection Date: 4/26/2016 11:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 05:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	5/4/2016 07:46 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 9:54:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	24	0.33	1.0		µg/L	5	5/2/2016 05:42 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	23	0.019	1.0		µg/L	1	5/4/2016 07:51 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	5.9	0.066	0.20		µg/L	1	5/2/2016 06:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	5/4/2016 07:57 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-009

Client Sample ID: MW-907-Q216
Collection Date: 4/26/2016 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2016 10:26 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 08:02 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	77	1.6	5.0		µg/L	25	5/3/2016 08:11 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	79	0.019	1.0		µg/L	1	5/4/2016 08:08 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-706-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 4:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 07:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-704-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 4:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2016 11:27 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-705-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 08:01 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-707-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 08:21 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-EB-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160502A**	QC Batch: **R107211**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2016 08:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 08:13 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R107211	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107211		
Client ID:	PBW	Batch ID:	R107211	TestNo:	EPA 218.6			Analysis Date:	5/2/2016	SeqNo:	2312046		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	LCS-R107211	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107211		
Client ID:	LCSW	Batch ID:	R107211	TestNo:	EPA 218.6			Analysis Date:	5/2/2016	SeqNo:	2312047		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.049	0.20	5.000	0	101	90	110						

Sample ID	N019534-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107211		
Client ID:	ZZZZZZ	Batch ID:	R107211	TestNo:	EPA 218.6			Analysis Date:	5/2/2016	SeqNo:	2312049		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	0.083	0.20						0.1360	0	20			

Sample ID	N019534-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107211		
Client ID:	ZZZZZZ	Batch ID:	R107211	TestNo:	EPA 218.6			Analysis Date:	5/2/2016	SeqNo:	2312050		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.157	0.20	1.000	0.1360	102	90	110						

Sample ID	N019534-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107211		
Client ID:	ZZZZZZ	Batch ID:	R107211	TestNo:	EPA 218.6			Analysis Date:	5/2/2016	SeqNo:	2312051		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.150	0.20	1.000	0.1360	101	90	110	1.157	0.555	20			

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019534-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.448	0.20	1.000	0.4395	101	90	110				

Sample ID **N019534-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.174	0.20	1.000	0.1009	107	90	110				

Sample ID **N019534-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	87.411	2.0	50.00	37.86	99.1	90	110				

Sample ID **N019534-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	132.246	2.0	50.00	81.09	102	90	110				

Sample ID **N019534-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0.1127	98.6	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019534-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.815	1.0	25.00	23.70	100	90	110				

Sample ID **N019534-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.150	0.20	1.000	0.08680	106	90	110				

Sample ID **N019534-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.1609	98.1	90	110				

Sample ID **N019534-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.138	0.20	1.000	0.1021	104	90	110				

Sample ID **N019534-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107211**
Client ID: **ZZZZZZ**	Batch ID: **R107211**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2312080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0.08100	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019534-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107211
Client ID:	ZZZZZZ	Batch ID:	R107211	TestNo:	EPA 218.6			Analysis Date:	5/2/2016	SeqNo:	2312083

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.200	0.20	5.000	5.930	105	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R107236	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	PBW	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313751

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

Sample ID	LCS-R107236	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	LCSW	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.796	0.20	5.000	0	95.9	90	110				

Sample ID	N019534-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID	N019534-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0.1054	94.4	90	110				

Sample ID	N019542-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313772

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.893	0.20	5.000	12.89	100	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019542-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313778

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	922.350	20	500.0	454.8	93.5	90	110				

Sample ID	N019542-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313780

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.223	1.0	25.00	23.51	98.8	90	110				

Sample ID	N019542-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313782

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	49.439	1.0	25.00	25.25	96.8	90	110				

Sample ID	N019542-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313790

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.218	1.0	5.000	0	104	90	110				

Sample ID	N019542-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313792

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11960.300	200	5000	6886	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019542-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1166.450	20	500.0	705.7	92.1	90	110				

Sample ID **N019542-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2964.260	40	1000	2003	96.2	90	110				

Sample ID **N019542-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3155.060	40	1000	2202	95.3	90	110				

Sample ID **N019542-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13696.000	200	5000	9073	92.5	90	110				

Sample ID **N019534-010ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	75.090	5.0						76.62	2.02	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019534-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313813

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.950	5.0	125.0	76.62	97.9	90	110				

Sample ID	N019534-010AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313814

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	199.185	5.0	125.0	76.62	98.0	90	110	199.0	0.118	20	

Sample ID	N019542-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313816

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.808	5.0	25.00	0	103	90	110				

Sample ID	N019542-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313818

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	202.165	5.0	125.0	77.13	100	90	110				

Sample ID	N019542-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313824

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.300	1.0	5.000	1.310	99.8	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019542-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313826

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.170	1.0	5.000	12.90	105	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-57209	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108270
Client ID:	PBW	Batch ID:	57209	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-57209	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108270
Client ID:	LCSW	Batch ID:	57209	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316496

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.307	1.0	10.00	0	93.1	85	115				

Sample ID	N019534-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108270
Client ID:	ZZZZZZ	Batch ID:	57209	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316500

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.846	1.0	10.00	0.05940	87.9	75	125				

Sample ID	N019534-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108270
Client ID:	ZZZZZZ	Batch ID:	57209	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316501

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.982	1.0	10.00	0.05940	89.2	75	125	8.846	1.52	20	

Sample ID	N019534-015B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108270
Client ID:	ZZZZZZ	Batch ID:	57209	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316514

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.341	1.0	10.00	0	93.4	75	125				

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.075	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 9:54:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R108305**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **PBW**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317821**

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

Sample ID **LCS-R108305**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **LCSW**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID **N019533-001CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **ZZZZZZ**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N019533-001CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **ZZZZZZ**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.635	0.050	0.5000	0	127	75	125				S

Sample ID **N019533-001CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **ZZZZZZ**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.614	0.050	0.5000	0	123	75	125	0.6354	3.49	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R108306**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **PBW**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317860**

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

Sample ID **LCS-R108306**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **LCSW**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.480	0.050	0.5000	0	96.0	85	115				

Sample ID **N019543-001EDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **ZZZZZZ**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.398	0.050						0.3993	0.251	20	

Sample ID **N019543-001EMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **ZZZZZZ**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.881	0.050	0.5000	0.3993	96.3	75	125				

Sample ID **N019543-001EMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **ZZZZZZ**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.932	0.050	0.5000	0.3993	106	75	125	0.8810	5.57	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-001

Client Sample ID: MW-36-090-Q216
Collection Date: 4/26/2016 12:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57209**			PrepDate	**4/28/2016**	Analyst: **CEI**	
Arsenic	7.2	0.025	0.10		µg/L	1	5/4/2016 06:45 PM
Manganese	79	0.056	0.50		µg/L	1	5/4/2016 06:45 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-002

Client Sample ID: MW-36-100-Q216
Collection Date: 4/26/2016 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Arsenic	6.5	0.025	0.10		µg/L	1	5/4/2016 07:12 PM
Manganese	240	0.28	2.5		µg/L	5	5/6/2016 05:03 PM
Molybdenum	22	0.039	0.50		µg/L	1	5/4/2016 07:12 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2016 07:12 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-003

Client Sample ID: MW-39-100-Q216
Collection Date: 4/26/2016 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Arsenic	2.5	0.025	0.10		µg/L	1	5/4/2016 07:18 PM
Manganese	8.2	0.056	0.50		µg/L	1	5/4/2016 07:18 PM
Molybdenum	7.5	0.19	2.5		µg/L	5	5/6/2016 05:09 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2016 07:18 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 1:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160504D**	QC Batch: **57209**				PrepDate	**4/28/2016**	Analyst: **CEI**
Arsenic	28	0.025	0.10		µg/L	1	5/4/2016 07:23 PM
Manganese	19	0.056	0.50		µg/L	1	5/4/2016 07:23 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-005

Client Sample ID: MW-42-065-Q216
Collection Date: 4/26/2016 1:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57209**			PrepDate	**4/28/2016**	Analyst: **CEI**	
Arsenic	5.1	0.025	0.10		µg/L	1	5/4/2016 07:40 PM
Manganese	350	0.28	2.5		µg/L	5	5/6/2016 05:14 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-006

Client Sample ID: MW-44-070-Q216
Collection Date: 4/26/2016 11:01:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57209**			PrepDate	**4/28/2016**	Analyst: **CEI**	
Arsenic	4.1	0.025	0.10		µg/L	1	5/4/2016 07:46 PM
Manganese	160	0.056	0.50		µg/L	1	5/4/2016 07:46 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q216
Lab Order:	N019534	**Collection Date:**	4/26/2016 9:54:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019534-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160504D**	QC Batch: **57209**				PrepDate	**4/28/2016**	Analyst: **CEI**
Arsenic	6.0	0.025	0.10		µg/L	1	5/4/2016 07:51 PM
Manganese	5.9	0.056	0.50		µg/L	1	5/4/2016 07:51 PM
Molybdenum	90	0.19	2.5		µg/L	5	5/6/2016 05:20 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2016 07:51 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-008

Client Sample ID: MW-44-125-Q216
Collection Date: 4/26/2016 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57209**			PrepDate	**4/28/2016**	Analyst: **CEI**	
Arsenic	4.0	0.025	0.10		µg/L	1	5/4/2016 07:57 PM
Manganese	450	0.28	2.5		µg/L	5	5/6/2016 05:25 PM
Molybdenum	110	0.19	2.5		µg/L	5	5/6/2016 05:25 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2016 07:57 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-009

Client Sample ID: MW-907-Q216
Collection Date: 4/26/2016 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Arsenic	12	0.025	0.10		µg/L	1	5/4/2016 08:02 PM
Manganese	15	0.056	0.50		µg/L	1	5/4/2016 08:02 PM
Molybdenum	120	0.039	0.50		µg/L	1	5/4/2016 08:02 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2016 08:02 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019534
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019534-010

Client Sample ID: MW-909-Q216
Collection Date: 4/26/2016 3:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Arsenic	2.6	0.12	0.50		µg/L	5	5/6/2016 05:36 PM
Manganese	8.2	0.056	0.50		µg/L	1	5/4/2016 08:08 PM
Molybdenum	8.1	0.19	2.5		µg/L	5	5/6/2016 05:36 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2016 08:08 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57209**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108271**
Client ID: **PBW**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.093	0.50									
Selenium	0.032	0.50									

Sample ID **LCS-57209**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108271**
Client ID: **LCSW**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.522	0.10	10.00	0	95.2	85	115				
Manganese	90.678	0.50	100.0	0	90.7	85	115				
Molybdenum	9.704	0.50	10.00	0	97.0	85	115				
Selenium	9.083	0.50	10.00	0	90.8	85	115				

Sample ID **N019534-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108271**
Client ID: **ZZZZZZ**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.701	0.10	10.00	7.203	95.0	75	125				
Manganese	162.098	0.50	100.0	79.29	82.8	75	125				
Molybdenum	19.625	0.50	10.00	8.941	107	75	125				
Selenium	8.590	0.50	10.00	0.04728	85.4	75	125				

Sample ID **N019534-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108271**
Client ID: **ZZZZZZ**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.014	0.10	10.00	7.203	98.1	75	125	16.70	1.86	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019534
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019534-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108271
Client ID:	ZZZZZZ	Batch ID:	57209	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316432

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	162.788	0.50	100.0	79.29	83.5	75	125	162.1	0.425	20	
Molybdenum	19.845	0.50	10.00	8.941	109	75	125	19.63	1.12	20	
Selenium	8.938	0.50	10.00	0.04728	88.9	75	125	8.590	3.97	20	

Sample ID	N019534-015B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108271
Client ID:	ZZZZZZ	Batch ID:	57209	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316445

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.413	0.10	10.00	0	94.1	75	125				
Manganese	91.051	0.50	100.0	0.08378	91.0	75	125				
Molybdenum	9.915	0.50	10.00	0.1102	98.0	75	125				
Selenium	8.617	0.50	10.00	0	86.2	75	125				

Qualifiers:

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

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y N): 1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 3.5 / 2.9°C
Submitted By:		Phone: 949-727-1400, ext 200 Fax:	
Title:	Phone: 916-786-3302 Fax:		

Signature: Date: 4/26/16
I hereby authorize ASSET Labs to perform the tests indicated below.

Sampled By: Dana Tepp
I attest to the validity and authenticity of this sample, I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Signature: Date: 4/26/16

Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

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

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019534 - 01	MW-36-090-Q216	4/26/2016	1212		X		X	X	X				E	2	P	BN	
2	- 02	MW-36-100-Q216	4/26/2016	1225		X		X	X	X	X	X	X	E	3	P	BNS	
3	- 03	MW-39-100-Q216	4/26/2016	1545		X		X	X	X	X	X	X	E	3	P	BNS	
4	- 04	MW-42-055-Q216	4/26/2016	1330			X	X	X	X				E	3	P	BN	
5	- 05	MW-42-065-Q216	4/26/2016	1330			X	X	X	X				E	3	P	BN	
6	- 06	MW-44-070-Q216	4/26/2016	1101			X	X	X	X				E	3	P	BN	
7	- 07	MW-44-115-Q216	4/26/2016	0954		X		X	X	X	X	X	X	E	3	P	BNS	
8	- 08	MW-44-125-Q216	4/26/2016	0955			X	X	X	X	X	X	X	E	4	P	BNS	
9	- 09	MW-907-Q216	4/26/2016	1210			X	X	X	X	X	X	X	E	4	P	BNS	
10	- 10	MW-909-Q216	4/26/2016	1550		X		X	X	X	X	X	X	E	3	P	BNS	
11	- 11	MW-706-Q216	4/26/2016	1630		X								E	1	P	B	
12	- 12	MW-704-Q216	4/26/2016	1630		X								E	1	P	B	
13	- 13	MW-705-Q216	4/26/2016	1530		X								E	1	P	B	
14	- 14	MW-707-Q216	4/26/2016	1600		X								E	1	P	B	
15	- 15	MW-33-040-EB-Q216	4/26/2016	1130		X			X					E	2	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
	4/26/16 1700		4/26/16 1700
	4/26/16 1912		4/26/16 1912

Turn Around Time (TAT)

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

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

Special Instruction:

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

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/26/2016	Workorder:	N019534
Rep sample Temp (Deg C):	3.5/2.9	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

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

Sample Receipt Checklist

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

Comments:

Checklist Completed By: HG 4/28/2016

Reviewed By: 05/05/16

ASSET Laboratories

WORK ORDER Summary

27-Apr-16

WorkOrder: N019534

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019534-001A	MW-36-090-Q216	4/26/2016 12:12:00 PM	5/10/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-001B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-002A	MW-36-100-Q216	4/26/2016 12:25:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-002B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-002C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019534-003A	MW-39-100-Q216	4/26/2016 3:45:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-003B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-003C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019534-004A	MW-42-055-Q216	4/26/2016 1:30:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-004B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-005A	MW-42-065-Q216		5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-005B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-16

WorkOrder: N019534

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019534-005B	MW-42-065-Q216	4/26/2016 1:30:00 PM	5/10/2016	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-006A	MW-44-070-Q216	4/26/2016 11:01:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-006B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-007A	MW-44-115-Q216	4/26/2016 9:54:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-007B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-007C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019534-008A	MW-44-125-Q216	4/26/2016 9:55:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-008B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-008C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019534-009A	MW-907-Q216	4/26/2016 12:10:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-009B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-009C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019534-010A	MW-909-Q216	4/26/2016 3:50:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-16

WorkOrder: N019534

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019534-010B	MW-909-Q216	4/26/2016 3:50:00 PM	5/10/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-010C			5/10/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019534-011A	MW-706-Q216	4/26/2016 4:30:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-012A	MW-704-Q216		5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-013A	MW-705-Q216	4/26/2016 3:30:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-014A	MW-707-Q216	4/26/2016 4:00:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-015A	MW-33-040-EB-Q216	4/26/2016 11:30:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019534-015B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019534-016A	FOLDER		5/10/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/10/2016		Folder	Folder	☐	☐	☐	LAB

May 12, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019535

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 26, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (6.3 ug/L) for sample N019535-007 (MW-910-Q216) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for sample N019535-007 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (6.3 ug/L) for sample N019535-007 (MW-910-Q216) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 15 and 16 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) is outside recovery criteria on QC sample N019533-001CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *12-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019535
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019535-001A	MW-34-080-EB-Q216	Groundwater	4/26/2016 2:20:00 PM	4/26/2016	5/12/2016
N019535-001B	MW-34-080-EB-Q216	Groundwater	4/26/2016 2:20:00 PM	4/26/2016	5/12/2016
N019535-002A	MW-42-055-EB-Q216	Groundwater	4/26/2016 12:55:00 PM	4/26/2016	5/12/2016
N019535-002B	MW-42-055-EB-Q216	Groundwater	4/26/2016 12:55:00 PM	4/26/2016	5/12/2016
N019535-003A	MW-42-065-EB-Q216	Groundwater	4/26/2016 1:00:00 PM	4/26/2016	5/12/2016
N019535-003B	MW-42-065-EB-Q216	Groundwater	4/26/2016 1:00:00 PM	4/26/2016	5/12/2016
N019535-004A	MW-44-070-EB-Q216	Groundwater	4/26/2016 10:30:00 AM	4/26/2016	5/12/2016
N019535-004B	MW-44-070-EB-Q216	Groundwater	4/26/2016 10:30:00 AM	4/26/2016	5/12/2016
N019535-005A	MW-44-125-EB-Q216	Groundwater	4/26/2016 9:20:00 AM	4/26/2016	5/12/2016
N019535-005B	MW-44-125-EB-Q216	Groundwater	4/26/2016 9:20:00 AM	4/26/2016	5/12/2016
N019535-006A	MW-28-025-EB-Q216	Groundwater	4/26/2016 2:00:00 PM	4/26/2016	5/12/2016
N019535-006B	MW-28-025-EB-Q216	Groundwater	4/26/2016 2:00:00 PM	4/26/2016	5/12/2016
N019535-007A	MW-910-Q216	Groundwater	4/26/2016 10:00:00 AM	4/26/2016	5/12/2016
N019535-007B	MW-910-Q216	Groundwater	4/26/2016 10:00:00 AM	4/26/2016	5/12/2016
N019535-007C	MW-910-Q216	Groundwater	4/26/2016 10:00:00 AM	4/26/2016	5/12/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

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

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-EB-Q216
Lab Order:	N019535	**Collection Date:**	4/26/2016 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019535-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160428A**	QC Batch: **R107172**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2016 05:45 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 08:24 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-EB-Q216
Lab Order:	N019535	**Collection Date:**	4/26/2016 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019535-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160428A**	QC Batch: **R107172**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2016 06:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 08:30 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-EB-Q216
Lab Order:	N019535	**Collection Date:**	4/26/2016 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019535-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160428A**	QC Batch: **R107172**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2016 06:42 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 08:47 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-EB-Q216
Lab Order:	N019535	**Collection Date:**	4/26/2016 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019535-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160428A**	QC Batch: **R107172**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2016 07:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 08:52 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-EB-Q216
Lab Order:	N019535	**Collection Date:**	4/26/2016 9:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019535-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160428A**	QC Batch: **R107172**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2016 07:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 08:58 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-EB-Q216
Lab Order:	N019535	**Collection Date:**	4/26/2016 2:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019535-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160428A**	QC Batch: **R107172**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2016 07:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 09:03 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q216
Lab Order:	N019535	**Collection Date:**	4/26/2016 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019535-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160429A**	QC Batch: **R107188**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	6.3	0.066	0.20		µg/L	1	4/29/2016 01:39 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	5/4/2016 09:09 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R107172	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107172
Client ID:	PBW	Batch ID:	R107172	TestNo:	EPA 218.6			Analysis Date:	4/28/2016	SeqNo:	2310120

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

Sample ID	LCS-R107172	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107172
Client ID:	LCSW	Batch ID:	R107172	TestNo:	EPA 218.6			Analysis Date:	4/28/2016	SeqNo:	2310121

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.038	0.20	5.000	0	101	90	110				

Sample ID	N019527-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107172
Client ID:	ZZZZZZ	Batch ID:	R107172	TestNo:	EPA 218.6			Analysis Date:	4/28/2016	SeqNo:	2310123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.209	0.20						0.2299	9.67	20	

Sample ID	N019527-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107172
Client ID:	ZZZZZZ	Batch ID:	R107172	TestNo:	EPA 218.6			Analysis Date:	4/28/2016	SeqNo:	2310124

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.283	0.20	5.000	0.2299	101	90	110				

Sample ID	N019527-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107172
Client ID:	ZZZZZZ	Batch ID:	R107172	TestNo:	EPA 218.6			Analysis Date:	4/28/2016	SeqNo:	2310125

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.165	0.20	5.000	0.2299	98.7	90	110	5.283	2.26	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019535-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107172**
Client ID: **ZZZZZZ** Batch ID: **R107172** TestNo: **EPA 218.6** Analysis Date: **4/28/2016** SeqNo: **2310138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.114	0.20	1.000	0.09700	102	90	110				

Sample ID **N019535-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107172**
Client ID: **ZZZZZZ** Batch ID: **R107172** TestNo: **EPA 218.6** Analysis Date: **4/28/2016** SeqNo: **2310140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.128	0.20	1.000	0.1052	102	90	110				

Sample ID **N019535-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107172**
Client ID: **ZZZZZZ** Batch ID: **R107172** TestNo: **EPA 218.6** Analysis Date: **4/28/2016** SeqNo: **2310144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.110	0.20	1.000	0.1091	100	90	110				

Sample ID **N019535-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107172**
Client ID: **ZZZZZZ** Batch ID: **R107172** TestNo: **EPA 218.6** Analysis Date: **4/28/2016** SeqNo: **2310146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.146	0.20	1.000	0.08970	106	90	110				

Sample ID **N019535-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **107172**
Client ID: **ZZZZZZ** Batch ID: **R107172** TestNo: **EPA 218.6** Analysis Date: **4/28/2016** SeqNo: **2310148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.147	0.20	1.000	0.09790	105	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019535-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107172
Client ID:	ZZZZZZ	Batch ID:	R107172	TestNo:	EPA 218.6			Analysis Date:	4/28/2016	SeqNo:	2310150

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.145	0.20	1.000	0.1157	103	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R107188	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188		
Client ID:	PBW	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310787		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R107188	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188		
Client ID:	LCSW	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310788		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.011	0.20	5.000	0	100	90	110					

Sample ID	N019519-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188		
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310790		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	1.0						0	0	20		

Sample ID	N019519-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188		
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310791		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.367	1.0	5.000	0	107	90	110					

Sample ID	N019519-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188		
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310792		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.422	1.0	5.000	0	108	90	110	5.367	1.02	20		

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019535-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310794

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.389	0.20	5.000	6.256	103	90	110				

Sample ID	N019519-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310800

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.183	1.0	5.000	0	104	90	110				

Sample ID	N019519-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310802

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.327	1.0	5.000	0.3840	98.9	90	110				

Sample ID	N019519-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310805

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.244	1.0	5.000	0	105	90	110				

Sample ID	N019519-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310807

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.235	1.0	5.000	0.3490	97.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019519-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.1073	102	90	110				

Sample ID **N019519-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.158	0.20	1.000	0.1192	104	90	110				

Sample ID **N019519-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.09320	105	90	110				

Sample ID **N019519-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1197.060	20	500.0	664.9	106	90	110				

Sample ID **N019519-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107188**
Client ID: **ZZZZZZ**	Batch ID: **R107188**	TestNo: **EPA 218.6**		Analysis Date: **4/29/2016**	SeqNo: **2310821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1179.770	20	500.0	661.8	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019519-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310823

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0.08970	101	90	110				

Sample ID	N019519-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310825

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.08840	105	90	110				

Sample ID	N019519-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107188
Client ID:	ZZZZZZ	Batch ID:	R107188	TestNo:	EPA 218.6			Analysis Date:	4/29/2016	SeqNo:	2310826

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.987	1.0	5.000	0	99.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-57209**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108270**
Client ID: **PBW**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-57209**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108270**
Client ID: **LCSW**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.307	1.0	10.00	0	93.1	85	115				

Sample ID **N019534-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.846	1.0	10.00	0.05940	87.9	75	125				

Sample ID **N019534-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.982	1.0	10.00	0.05940	89.2	75	125	8.846	1.52	20	

Sample ID **N019534-015B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.341	1.0	10.00	0	93.4	75	125				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q216
Lab Order:	N019535	**Collection Date:**	4/26/2016 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019535-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.12	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R108306**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **PBW**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317860**

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

Sample ID **LCS-R108306**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **LCSW**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.480	0.050	0.5000	0	96.0	85	115				

Sample ID **N019543-001EDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **ZZZZZZ**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.398	0.050						0.3993	0.251	20	

Sample ID **N019543-001EMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **ZZZZZZ**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.881	0.050	0.5000	0.3993	96.3	75	125				

Sample ID **N019543-001EMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **ZZZZZZ**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.932	0.050	0.5000	0.3993	106	75	125	0.8810	5.57	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019535
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019535-007

Client Sample ID: MW-910-Q216
Collection Date: 4/26/2016 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57209**			PrepDate	**4/28/2016**		Analyst: **CEI**
Arsenic	4.0	0.025	0.10		µg/L	1	5/4/2016 09:09 PM
Manganese	460	0.28	2.5		µg/L	5	5/6/2016 05:42 PM
Molybdenum	120	0.19	2.5		µg/L	5	5/6/2016 05:42 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2016 09:09 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57209**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108271**
Client ID: **PBW**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.093	0.50									
Selenium	0.032	0.50									

Sample ID **LCS-57209**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108271**
Client ID: **LCSW**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.522	0.10	10.00	0	95.2	85	115				
Manganese	90.678	0.50	100.0	0	90.7	85	115				
Molybdenum	9.704	0.50	10.00	0	97.0	85	115				
Selenium	9.083	0.50	10.00	0	90.8	85	115				

Sample ID **N019534-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108271**
Client ID: **ZZZZZZ**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.701	0.10	10.00	7.203	95.0	75	125				
Manganese	162.098	0.50	100.0	79.29	82.8	75	125				
Molybdenum	19.625	0.50	10.00	8.941	107	75	125				
Selenium	8.590	0.50	10.00	0.04728	85.4	75	125				

Sample ID **N019534-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/28/2016**	RunNo: **108271**
Client ID: **ZZZZZZ**	Batch ID: **57209**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.014	0.10	10.00	7.203	98.1	75	125	16.70	1.86	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019535
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019534-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108271
Client ID:	ZZZZZZ	Batch ID:	57209	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316432

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	162.788	0.50	100.0	79.29	83.5	75	125	162.1	0.425	20	
Molybdenum	19.845	0.50	10.00	8.941	109	75	125	19.63	1.12	20	
Selenium	8.938	0.50	10.00	0.04728	88.9	75	125	8.590	3.97	20	

Sample ID	N019534-015B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/28/2016	RunNo:	108271
Client ID:	ZZZZZZ	Batch ID:	57209	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316445

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.413	0.10	10.00	0	94.1	75	125				
Manganese	91.051	0.50	100.0	0.08378	91.0	75	125				
Molybdenum	9.915	0.50	10.00	0.1102	98.0	75	125				
Selenium	8.617	0.50	10.00	0	86.2	75	125				

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓ (Specify: RWQCB); Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 3; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 3.5°C
Submitted By:		Phone: 949-727-1400, ext 200 Fax:	
Title:	Phone: 916-786-3302 Fax:		

Signature: [signature] Date: 4/26/16
I hereby authorize ASSET Labs to perform the tests indicated below.

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

Signature: [signature] Date: 4/26/16

Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

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

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019535 - 01	MW-34-080-EB-Q216	4/26/2016	1420		X			X					E	2	P	BN	
2	- 02	MW-42-055-EB-Q216	4/26/2016	1255		X			X					E	2	P	BN	
3	- 03	MW-42-065-EB-Q216	4/26/2016	1300		X			X					E	2	P	BN	
4	- 04	MW-44-070-EB-Q216	4/26/2016	1030		X			X					E	2	P	BN	
5	- 05	MW-44-125-EB-Q216	4/26/2016	920		X			X					E	2	P	BN	
6	- 06	MW-28-025-EB-Q216	4/26/2016	1400		X			X					E	2	P	BN	
7	- 07	MW-910-Q216	4/26/2016	1000			X	X	X	X	X	X	X	E	4	P	BNS	
8																		
9																		
10																		
11																		
12																		
13		~~MW-53D-Q216~~																
14		~~MW-53M-Q216~~																
15																		

Relinquished by (Signature and Printed Name): [signature] Date/Time: 4/26/16 1700	Relinquished by (Signature and Printed Name): [signature] Date/Time: 4/26/16 1700
Relinquished by (Signature and Printed Name): [signature] Date/Time: 4/26/16 1912	Relinquished by (Signature and Printed Name): [signature] Date/Time: 4/26/16 1912
Relinquished by (Signature and Printed Name): Date/Time:	Relinquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

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

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

Special Instruction:

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

Preservatives:

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

Container Type:

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

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/26/2016	Workorder:	N019535
Rep sample Temp (Deg C):	3.5	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments:

Checklist Completed By: HG 4/28/2016

Reviewed By: 05/05/16

ASSET Laboratories

WORK ORDER Summary

27-Apr-16

WorkOrder: N019535

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019535-001A	MW-34-080-EB-Q216	4/26/2016 2:20:00 PM	5/10/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019535-001B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019535-002A	MW-42-055-EB-Q216	4/26/2016 12:55:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019535-002B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019535-003A	MW-42-065-EB-Q216	4/26/2016 1:00:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019535-003B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019535-004A	MW-44-070-EB-Q216	4/26/2016 10:30:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019535-004B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019535-005A	MW-44-125-EB-Q216	4/26/2016 9:20:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019535-005B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019535-006A	MW-28-025-EB-Q216	4/26/2016 2:00:00 PM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019535-006B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019535-007A	MW-910-Q216	4/26/2016 10:00:00 AM	5/10/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019535-007B			5/10/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-16

WorkOrder: N019535

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019535-007C	MW-910-Q216	4/26/2016 10:00:00 AM	5/10/2016	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019535-008A	FOLDER		5/10/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/10/2016		Folder	Folder	☐	☐	☐	LAB

May 16, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019542

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 27, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N019542-001, N019542-002, N019542-009 and N019542-010 due to matrix interference. Samples were analyzed at lower dilution however retention time criteria and matrix spike were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N019542-001, N019542-002, N019542-007, N019542-009, N019542-010 and N019542-015 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese on QC samples N019542-001B-MS and N019542-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N019542-001B-MS and N019542-001B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *16-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019542
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019542-001A	MW-53D-Q216	Groundwater	4/27/2016 8:37:00 AM	4/27/2016	5/16/2016
N019542-001B	MW-53D-Q216	Groundwater	4/27/2016 8:37:00 AM	4/27/2016	5/16/2016
N019542-002A	MW-53M-Q216	Groundwater	4/27/2016 8:38:00 AM	4/27/2016	5/16/2016
N019542-002B	MW-53M-Q216	Groundwater	4/27/2016 8:38:00 AM	4/27/2016	5/16/2016
N019542-003A	MW-50-095-Q216	Groundwater	4/27/2016 12:56:00 PM	4/27/2016	5/16/2016
N019542-003B	MW-50-095-Q216	Groundwater	4/27/2016 12:56:00 PM	4/27/2016	5/16/2016
N019542-004A	MW-50-200-Q216	Groundwater	4/27/2016 12:18:00 PM	4/27/2016	5/16/2016
N019542-004B	MW-50-200-Q216	Groundwater	4/27/2016 12:18:00 PM	4/27/2016	5/16/2016
N019542-005A	MW-19-Q216	Groundwater	4/27/2016 1:35:00 PM	4/27/2016	5/16/2016
N019542-005B	MW-19-Q216	Groundwater	4/27/2016 1:35:00 PM	4/27/2016	5/16/2016
N019542-006A	MW-35-060-Q216	Groundwater	4/27/2016 11:20:00 AM	4/27/2016	5/16/2016
N019542-006B	MW-35-060-Q216	Groundwater	4/27/2016 11:20:00 AM	4/27/2016	5/16/2016
N019542-006C	MW-35-060-Q216	Groundwater	4/27/2016 11:20:00 AM	4/27/2016	5/16/2016
N019542-007A	MW-35-135-Q216	Groundwater	4/27/2016 10:30:00 AM	4/27/2016	5/16/2016
N019542-007B	MW-35-135-Q216	Groundwater	4/27/2016 10:30:00 AM	4/27/2016	5/16/2016
N019542-007C	MW-35-135-Q216	Groundwater	4/27/2016 10:30:00 AM	4/27/2016	5/16/2016
N019542-008A	MW-25-Q216	Groundwater	4/27/2016 2:15:00 PM	4/27/2016	5/16/2016
N019542-008B	MW-25-Q216	Groundwater	4/27/2016 2:15:00 PM	4/27/2016	5/16/2016
N019542-008C	MW-25-Q216	Groundwater	4/27/2016 2:15:00 PM	4/27/2016	5/16/2016
N019542-009A	MW-37D-Q216	Groundwater	4/27/2016 2:54:00 PM	4/27/2016	5/16/2016
N019542-009B	MW-37D-Q216	Groundwater	4/27/2016 2:54:00 PM	4/27/2016	5/16/2016
N019542-009C	MW-37D-Q216	Groundwater	4/27/2016 2:54:00 PM	4/27/2016	5/16/2016
N019542-010A	MW-41D-Q216	Groundwater	4/27/2016 11:45:00 AM	4/27/2016	5/16/2016
N019542-010B	MW-41D-Q216	Groundwater	4/27/2016 11:45:00 AM	4/27/2016	5/16/2016
N019542-010C	MW-41D-Q216	Groundwater	4/27/2016 11:45:00 AM	4/27/2016	5/16/2016
N019542-011A	MW-14-Q216	Groundwater	4/27/2016 10:46:00 AM	4/27/2016	5/16/2016
N019542-011B	MW-14-Q216	Groundwater	4/27/2016 10:46:00 AM	4/27/2016	5/16/2016
N019542-011C	MW-14-Q216	Groundwater	4/27/2016 10:46:00 AM	4/27/2016	5/16/2016
N019542-012A	MW-31-060-Q216	Groundwater	4/27/2016 2:51:00 PM	4/27/2016	5/16/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019542
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019542-012B	MW-31-060-Q216	Groundwater	4/27/2016 2:51:00 PM	4/27/2016	5/16/2016
N019542-013A	MW-20-070-Q216	Groundwater	4/27/2016 1:30:00 PM	4/27/2016	5/16/2016
N019542-013B	MW-20-070-Q216	Groundwater	4/27/2016 1:30:00 PM	4/27/2016	5/16/2016
N019542-013C	MW-20-070-Q216	Groundwater	4/27/2016 1:30:00 PM	4/27/2016	5/16/2016
N019542-014A	MW-20-100-Q216	Groundwater	4/27/2016 2:13:00 PM	4/27/2016	5/16/2016
N019542-014B	MW-20-100-Q216	Groundwater	4/27/2016 2:13:00 PM	4/27/2016	5/16/2016
N019542-014C	MW-20-100-Q216	Groundwater	4/27/2016 2:13:00 PM	4/27/2016	5/16/2016
N019542-015A	MW-20-130-Q216	Groundwater	4/27/2016 12:48:00 PM	4/27/2016	5/16/2016
N019542-015B	MW-20-130-Q216	Groundwater	4/27/2016 12:48:00 PM	4/27/2016	5/16/2016
N019542-015C	MW-20-130-Q216	Groundwater	4/27/2016 12:48:00 PM	4/27/2016	5/16/2016
N019542-016A	MW-51-Q216	Groundwater	4/27/2016 3:31:00 PM	4/27/2016	5/16/2016
N019542-016B	MW-51-Q216	Groundwater	4/27/2016 3:31:00 PM	4/27/2016	5/16/2016
N019542-016C	MW-51-Q216	Groundwater	4/27/2016 3:31:00 PM	4/27/2016	5/16/2016
N019542-017A	MW-709-Q216	Groundwater	4/27/2016 3:50:00 PM	4/27/2016	5/16/2016
N019542-018A	MW-708-Q216	Groundwater	4/27/2016 3:05:00 PM	4/27/2016	5/16/2016
N019542-019A	MW-908-Q216	Groundwater	4/27/2016 11:30:00 AM	4/27/2016	5/16/2016
N019542-019B	MW-908-Q216	Groundwater	4/27/2016 11:30:00 AM	4/27/2016	5/16/2016
N019542-019C	MW-908-Q216	Groundwater	4/27/2016 11:30:00 AM	4/27/2016	5/16/2016
N019542-020A	MW-74-240-Q216	Groundwater	4/27/2016 2:40:00 PM	4/27/2016	5/16/2016
N019542-020B	MW-74-240-Q216	Groundwater	4/27/2016 2:40:00 PM	4/27/2016	5/16/2016
N019542-020C	MW-74-240-Q216	Groundwater	4/27/2016 2:40:00 PM	4/27/2016	5/16/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 8:37:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	1.6	5.0		µg/L	25	5/3/2016 08:51 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/6/2016 06:33 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-002

Client Sample ID: MW-53M-Q216
Collection Date: 4/27/2016 8:38:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/3/2016 04:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 06:56 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-095-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 12:56:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	13	0.066	0.20		µg/L	1	5/3/2016 01:27 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	5/6/2016 07:01 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-200-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 12:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	6900	66	200		µg/L	1000	5/3/2016 04:49 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	7600	0.97	50		µg/L	50	5/7/2016 01:34 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-19-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 1:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	450	6.6	20		µg/L	100	5/3/2016 02:27 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	500	0.096	5.0		µg/L	5	5/7/2016 01:39 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 11:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	24	0.33	1.0		µg/L	5	5/3/2016 02:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	23	0.019	1.0		µg/L	1	5/6/2016 07:29 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	25	0.33	1.0		µg/L	5	5/3/2016 03:07 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	27	0.019	1.0		µg/L	1	5/6/2016 07:34 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	77	1.6	5.0		µg/L	25	5/3/2016 09:11 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	77	0.019	1.0		µg/L	1	5/6/2016 07:40 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504A**	QC Batch: **R108255**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	7.7	0.33	1.0		µg/L	5	5/4/2016 11:22 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	7.7	0.019	1.0		µg/L	1	5/6/2016 07:45 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 11:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	1.3	0.33	1.0		µg/L	5	5/3/2016 10:11 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	1.3	0.019	1.0		µg/L	1	5/6/2016 07:51 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-011

Client Sample ID: MW-14-Q216
Collection Date: 4/27/2016 10:46:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	13	0.33	1.0		µg/L	5	5/3/2016 10:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	5/6/2016 07:56 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	710	6.6	20		µg/L	100	5/3/2016 06:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	740	0.096	5.0		µg/L	5	5/7/2016 02:02 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-013

Client Sample ID: MW-20-070-Q216
Collection Date: 4/27/2016 1:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	2000	13	40		µg/L	200	5/3/2016 06:51 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	2300	0.48	25		µg/L	25	5/7/2016 02:52 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:13:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	2200	13	40		µg/L	200	5/3/2016 07:11 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	2300	0.48	25		µg/L	25	5/7/2016 02:57 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 12:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160503A**	QC Batch: **R107236**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	9100	66	200		µg/L	1000	5/3/2016 07:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	9400	1.9	100		µg/L	100	5/7/2016 03:03 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-016

Client Sample ID: MW-51-Q216
Collection Date: 4/27/2016 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504A**	QC Batch: **R108255**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	4800	66	200		µg/L	1000	5/4/2016 11:42 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	5000	0.97	50		µg/L	50	5/7/2016 03:08 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-709-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504A**	QC Batch: **R108255**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 12:02 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-708-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504A**	QC Batch: **R108255**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 12:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504A**	QC Batch: **R108255**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	25	0.33	1.0		µg/L	5	5/4/2016 03:20 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	24	0.019	1.0		µg/L	1	5/6/2016 09:08 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504A**	QC Batch: **R108255**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 01:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 09:13 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R107236**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **PBW**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313751**

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

Sample ID **LCS-R107236**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **LCSW**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.796	0.20	5.000	0	95.9	90	110				

Sample ID **N019534-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID **N019534-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0.1054	94.4	90	110				

Sample ID **N019542-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.893	0.20	5.000	12.89	100	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019542-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313778

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	922.350	20	500.0	454.8	93.5	90	110				

Sample ID	N019542-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313780

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.223	1.0	25.00	23.51	98.8	90	110				

Sample ID	N019542-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313782

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	49.439	1.0	25.00	25.25	96.8	90	110				

Sample ID	N019542-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313790

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.218	1.0	5.000	0	104	90	110				

Sample ID	N019542-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313792

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11960.300	200	5000	6886	101	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019542-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1166.450	20	500.0	705.7	92.1	90	110				

Sample ID **N019542-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2964.260	40	1000	2003	96.2	90	110				

Sample ID **N019542-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3155.060	40	1000	2202	95.3	90	110				

Sample ID **N019542-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13696.000	200	5000	9073	92.5	90	110				

Sample ID **N019534-010ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **107236**
Client ID: **ZZZZZZ**	Batch ID: **R107236**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2016**	SeqNo: **2313812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	75.090	5.0						76.62	2.02	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019534-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313813

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.950	5.0	125.0	76.62	97.9	90	110				

Sample ID	N019534-010AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313814

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	199.185	5.0	125.0	76.62	98.0	90	110	199.0	0.118	20	

Sample ID	N019542-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313816

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.808	5.0	25.00	0	103	90	110				

Sample ID	N019542-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313818

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	202.165	5.0	125.0	77.13	100	90	110				

Sample ID	N019542-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313824

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.300	1.0	5.000	1.310	99.8	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019542-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	107236
Client ID:	ZZZZZZ	Batch ID:	R107236	TestNo:	EPA 218.6			Analysis Date:	5/3/2016	SeqNo:	2313826

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.170	1.0	5.000	12.90	105	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108255	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255		
Client ID:	PBW	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315566		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	LCS-R108255	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255		
Client ID:	LCSW	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315567		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.990	0.20	5.000	0	99.8	90	110						

Sample ID	N019597-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255		
Client ID:	ZZZZZZ	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315571		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.195	0.20						1.108	7.62	20			

Sample ID	N019597-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255		
Client ID:	ZZZZZZ	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315572		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	6.388	0.20	5.000	1.108	106	90	110						

Sample ID	N019597-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255		
Client ID:	ZZZZZZ	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315573		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	6.171	0.20	5.000	1.108	101	90	110	6.388	3.46	20			

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019542-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255
Client ID:	ZZZZZZ	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	32.978	1.0	25.00	7.720	101	90	110				

Sample ID	N019542-016AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255
Client ID:	ZZZZZZ	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315584

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9710.100	200	5000	4780	98.6	90	110				

Sample ID	N019542-017AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255
Client ID:	ZZZZZZ	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315586

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.114	0.20	1.000	0.08800	103	90	110				

Sample ID	N019542-020AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255
Client ID:	ZZZZZZ	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315594

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.136	0.20	1.000	0.1598	97.6	90	110				

Sample ID	N019542-018AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255
Client ID:	ZZZZZZ	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315602

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019542-019AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108255
Client ID:	ZZZZZZ	Batch ID:	R108255	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315604

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.526	1.0	25.00	24.57	95.8	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-57228	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108312
Client ID:	PBW	Batch ID:	57228	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/6/2016	SeqNo:	2318063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-57228	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108312
Client ID:	LCSW	Batch ID:	57228	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/6/2016	SeqNo:	2318064

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.369	1.0	10.00	0	104	85	115				

Sample ID	N019542-011B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108312
Client ID:	ZZZZZZ	Batch ID:	57228	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/6/2016	SeqNo:	2318083

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.131	1.0	10.00	14.54	95.9	75	125				

Sample ID	N019542-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108312
Client ID:	ZZZZZZ	Batch ID:	57228	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/7/2016	SeqNo:	2318134

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.617	5.0	10.00	0	96.2	75	125				

Sample ID	N019542-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108312
Client ID:	ZZZZZZ	Batch ID:	57228	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/7/2016	SeqNo:	2318136

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.517	5.0	10.00	0	95.2	75	125	9.617	1.04	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 11:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.2	0.11	0.25		mg/L	5	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.5	0.11	0.25		mg/L	5	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	9.7	0.44	1.0		mg/L	20	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.18	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 11:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.28	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 10:46:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.5	0.11	0.25		mg/L	5	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 1:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	8.5	0.22	0.50		mg/L	10	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:13:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	8.6	0.22	0.50		mg/L	10	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 12:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	10	0.44	1.0		mg/L	20	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.1	0.22	0.50		mg/L	10	5/7/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507C**	QC Batch: **R108307**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.37	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R108307	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	PBW	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317895

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

Sample ID	LCS-R108307	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	LCSW	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.7	85	115				

Sample ID	N019613-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	ZZZZZZ	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317901

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID	N019613-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	ZZZZZZ	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317902

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.495	0.050	0.5000	0	98.9	75	125				

Sample ID	N019613-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108307
Client ID:	ZZZZZZ	Batch ID:	R108307	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2317903

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.497	0.050	0.5000	0	99.3	75	125	0.4945	0.444	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 8:37:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	2.9	0.62	2.5		µg/L	25	5/9/2016 12:59 PM
Manganese	1500	1.4	12		µg/L	25	5/7/2016 12:33 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53M-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 8:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160506C**	QC Batch: **57228**				PrepDate	**4/29/2016**	Analyst: **CEI**
Arsenic	ND	0.12	0.50		µg/L	5	5/7/2016 01:12 AM
Manganese	400	0.28	2.5		µg/L	5	5/7/2016 01:12 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-006

Client Sample ID: MW-35-060-Q216
Collection Date: 4/27/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	0.99	0.025	0.10		µg/L	1	5/6/2016 07:29 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 07:29 PM
Molybdenum	9.6	0.039	0.50		µg/L	1	5/6/2016 07:29 PM
Selenium	0.94	0.028	0.50		µg/L	1	5/6/2016 07:29 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-007

Client Sample ID: MW-35-135-Q216
Collection Date: 4/27/2016 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	0.81	0.025	0.10		µg/L	1	5/6/2016 07:34 PM
Manganese	3.1	0.056	0.50		µg/L	1	5/6/2016 07:34 PM
Molybdenum	22	0.19	2.5		µg/L	5	5/13/2016 03:17 PM
Selenium	1.1	0.028	0.50		µg/L	1	5/6/2016 07:34 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-008

Client Sample ID: MW-25-Q216
Collection Date: 4/27/2016 2:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**	Analyst: **CEI**	
Arsenic	1.1	0.025	0.10		µg/L	1	5/6/2016 07:40 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 07:40 PM
Molybdenum	2.8	0.039	0.50		µg/L	1	5/6/2016 07:40 PM
Selenium	6.7	0.028	0.50		µg/L	1	5/6/2016 07:40 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-009

Client Sample ID: MW-37D-Q216
Collection Date: 4/27/2016 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513A**	QC Batch: **57228**			PrepDate	**4/29/2016**	Analyst: **CEI**	
Molybdenum	54	0.19	2.5		µg/L	5	5/13/2016 03:22 PM
Selenium	ND	0.14	2.5		µg/L	5	5/13/2016 03:22 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-010

Client Sample ID: MW-41D-Q216
Collection Date: 4/27/2016 11:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**	Analyst: **CEI**	
Arsenic	1.9	0.12	0.50		µg/L	5	5/7/2016 01:56 AM
Manganese	89	0.056	0.50		µg/L	1	5/6/2016 07:51 PM
Molybdenum	87	0.97	12		µg/L	25	5/13/2016 03:45 PM
Selenium	ND	0.14	2.5		µg/L	5	5/13/2016 03:28 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-011

Client Sample ID: MW-14-Q216
Collection Date: 4/27/2016 10:46:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	0.86	0.025	0.10		µg/L	1	5/6/2016 07:56 PM
Manganese	0.57	0.056	0.50		µg/L	1	5/6/2016 07:56 PM
Molybdenum	14	0.039	0.50		µg/L	1	5/6/2016 07:56 PM
Selenium	2.3	0.028	0.50		µg/L	1	5/6/2016 07:56 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q216
Lab Order:	N019542	**Collection Date:**	4/27/2016 2:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019542-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160506C**	QC Batch: **57228**				PrepDate	**4/29/2016**	Analyst: **CEI**
Arsenic	1.1	0.025	0.10		µg/L	1	5/6/2016 08:08 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 08:08 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-013

Client Sample ID: MW-20-070-Q216
Collection Date: 4/27/2016 1:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**	Analyst: **CEI**	
Molybdenum	38	0.039	0.50		µg/L	1	5/6/2016 08:46 PM
Selenium	5.3	0.028	0.50		µg/L	1	5/6/2016 08:46 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-014

Client Sample ID: MW-20-100-Q216
Collection Date: 4/27/2016 2:13:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**	Analyst: **CEI**	
Molybdenum	3.4	0.039	0.50		µg/L	1	5/6/2016 08:51 PM
Selenium	5.0	0.028	0.50		µg/L	1	5/6/2016 08:51 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-015

Client Sample ID: MW-20-130-Q216
Collection Date: 4/27/2016 12:48:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**	Analyst: **CEI**	
Arsenic	4.6	0.025	0.10		µg/L	1	5/6/2016 08:57 PM
Manganese	3.1	0.056	0.50		µg/L	1	5/6/2016 08:57 PM
Molybdenum	71	0.97	12		µg/L	25	5/13/2016 03:50 PM
Selenium	16	0.14	2.5		µg/L	5	5/13/2016 03:39 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-016

Client Sample ID: MW-51-Q216
Collection Date: 4/27/2016 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**	Analyst: **CEI**	
Arsenic	3.4	0.025	0.10		µg/L	1	5/6/2016 09:02 PM
Manganese	1.9	0.056	0.50		µg/L	1	5/6/2016 09:02 PM
Molybdenum	42	0.039	0.50		µg/L	1	5/6/2016 09:02 PM
Selenium	16	0.028	0.50		µg/L	1	5/6/2016 09:02 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-019

Client Sample ID: MW-908-Q216
Collection Date: 4/27/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57228**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	1.0	0.025	0.10		µg/L	1	5/6/2016 09:08 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 09:08 PM
Molybdenum	9.9	0.039	0.50		µg/L	1	5/6/2016 09:08 PM
Selenium	1.3	0.028	0.50		µg/L	1	5/6/2016 09:08 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019542
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019542-020

Client Sample ID: MW-74-240-Q216
Collection Date: 4/27/2016 2:40:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160506C** QC Batch: **57228** PrepDate **4/29/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	11	0.025	0.10		µg/L	1	5/6/2016 09:13 PM
Manganese	4.3	0.056	0.50		µg/L	1	5/6/2016 09:13 PM
Molybdenum	37	0.039	0.50		µg/L	1	5/6/2016 09:13 PM
Selenium	1.2	0.028	0.50		µg/L	1	5/13/2016 03:34 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57228**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108313**
Client ID: **PBW**	Batch ID: **57228**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318197**

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

Sample ID **LCS-57228**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108313**
Client ID: **LCSW**	Batch ID: **57228**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.303	0.10	10.00	0	103	85	115				
Manganese	101.510	0.50	100.0	0	102	85	115				
Molybdenum	10.171	0.50	10.00	0	102	85	115				
Selenium	10.109	0.50	10.00	0	101	85	115				

Sample ID **N019542-011B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **57228**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.731	0.10	10.00	0.8615	98.7	75	125				
Manganese	91.830	0.50	100.0	0.5670	91.3	75	125				
Molybdenum	24.960	0.50	10.00	14.03	109	75	125				
Selenium	11.882	0.50	10.00	2.292	95.9	75	125				

Sample ID **N019542-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **57228**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/7/2016**	SeqNo: **2318269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	1507.905	12	100.0	1456	51.9	75	125				S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019542
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019542-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108313
Client ID:	ZZZZZZ	Batch ID:	57228	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/7/2016	SeqNo:	2318269

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	189.415	12	10.00	183.2	62.2	75	125				S
Selenium	11.008	12	10.00	0.7242	103	75	125				

Sample ID	N019542-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108313
Client ID:	ZZZZZZ	Batch ID:	57228	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/7/2016	SeqNo:	2318271

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	1511.108	12	100.0	1456	55.1	75	125	1508	0.212	20	S
Molybdenum	190.131	12	10.00	183.2	69.3	75	125	189.4	0.377	20	S
Selenium	11.917	12	10.00	0.7242	112	75	125	11.01	0	20	

Sample ID	N019542-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108313
Client ID:	ZZZZZZ	Batch ID:	57228	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/7/2016	SeqNo:	2320079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.776	2.5	10.00	2.876	99.0	75	125				

Sample ID	N019542-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108313
Client ID:	ZZZZZZ	Batch ID:	57228	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/7/2016	SeqNo:	2320081

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.449	2.5	10.00	2.876	85.7	75	125	12.78	11.0	20	

Qualifiers:

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

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ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@arcadis.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By:			Others ✓	LEVEL III	3. Container Intact
Title:	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 4/27/16	Sampled By: Jacob Mathwich		Global ID:	Regulatory	5. IR number 2
				Specify State:	6. Method of Cooling: ice
					Sample Temp: 2.6 / 3.2

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

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

Project Name: PG&E Topock - GMP
Project Number: RC000753.0801
Signature: Date: 4/27/16

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

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019542 - 01	MW-53D-Q216	4/27/2016	0837			X	X	X	X				E	3	P	BN	
2	- 02	MW-53M-Q216	4/27/2016	0838			X	X	X	X				E	3	P	BN	
3	- 03	MW-50-095-Q216	4/27/2016	1256		X		X						E	2	P	BN	
4	- 04	MW-50-200-Q216	4/27/2016	1218		X		X						E	2	P	BN	
5	- 05	MW-19-Q216	4/27/2016	1335		X		X						E	2	P	BN	
6	- 06	MW-35-060-Q216	4/27/2016	1120		X		X	X	X	X	X	X	E	3	P	BNS	
7	- 07	MW-35-135-Q216	4/27/2016	1030		X		X	X	X	X	X	X	E	3	P	BNS	
8	- 08	MW-25-Q216	4/27/2016	1415		X		X	X	X	X	X	X	E	3	P	BNS	
9	- 09	MW-37D-Q216	4/27/2016	1454		X		X			X	X	X	E	3	P	BN	
10	- 10	MW-41D-Q216	4/27/2016	1145		X		X	X	X	X	X	X	E	3	P	BNS	
11	- 11	MW-14-Q216	4/27/2016	1046		X		X	X	X	X	X	X	E	3	P	BNS	
12	- 12	MW-31-060-Q216	4/27/2016	1451		X		X			X	X		E	2	P	BN	
13	- 13	MW-20-070-Q216	4/27/2016	1330		X		X			X	X	X	E	3	P	BNS	
14	- 14	MW-20-100-Q216	4/27/2016	1413		X		X			X	X	X	E	3	P	BNS	
15	- 15	MW-20-130-Q216	4/27/2016	1248		X		X	X	X	X	X	X	E	3	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	4/27/16 1620		4/27/16 1620
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	4/27/16 1845		4/27/16 1845
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

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

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

Special Instruction:

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

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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CHAIN OF CUSTODY RECORD

Page 2 of 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement / QA/QC / Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD; Geotracker; Labspec; Others ✓ (Specify: RWQCB) / RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Global ID: / Specify State:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice
Submitted By:		Phone: 949-727-1400, ext 200 Fax:	Sample Temp: 2.6°C
Title: Project Manager 4/27/16	Phone: 916-786-3302 Fax:		
Signature: Date:	Sampled By: Jacob Mathwig		

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

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

Project Name: PG&E Topock - GMP	Signature:	Date: 4/27/16
Project Number: RC000753.0801		

Matrix

Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019542 - 16	MW-51-Q216	4/27/2016	1531		X		X	X	X	X	X	X	E	3	P	BNS	
2	- 17	MW-709-Q216	4/27/2016	1550		X								E	1	P	B	
3	- 18	MW-708-Q216	4/27/2016	1505		X								E	1	P	B	
4	- 19	MW-908-Q216	4/27/2016	1130		X		X	X	X	X	X	X	E	3	P	BNS	
5	- 20	MW-74-240-Q216	4/27/2016	1440		X		X	X	X	X	X	X	E	3	P	BNS	
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	4/27/16 1620		4/27/16 1620
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	4/27/16 1745		4/27/16 1745
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

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3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
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Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/27/2016	Workorder:	N019542
Rep sample Temp (Deg C):	2.6/3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments:

Checklist Completed By: MBC For: 4/28/2016

Reviewed By: 05/05/16

Hanah Glodoviza

From: Glen Gesmundo [glen@assetlaboratories.com]
Sent: Thursday, April 28, 2016 5:41 PM
To: 'SampleControlLV'; 'Hanah Glodoviza'
Subject: FW: URGENT !!!!!! COC and Work Order Summary for Samples Received 4/28/2016

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Thursday, April 28, 2016 5:17 PM
To: Maurel, Sean
Cc: Madsen, Laura; Harmon, Alison; Tina Rice; Kalib Sumter; Bush, Dan; Marlon B. Cartin
Subject: Re: URGENT !!!!!! COC and Work Order Summary for Samples Received 4/28/2016

Thanks, Sean.

I don't think that the tool " missed" anything. There are some translations that are performed to make the info from the lab to Equis which may need to be updated since this is the first rmp and PMP samples. I do this translation as they come in and resolve issues. I fixed some of them but there was just too much wrong here. When we get the resolved files, Kalib updates/reviews the pst to the database I will rerun these checks and see what we find. We skipped the normal review process this round, right?

Sent from my iPhone

On Apr 28, 2016, at 7:10 PM, Maurel, Sean <Sean.Maurel@arcadis.com> wrote:

> Hi Dan,
>
> I've just finished my review of the login, and identified many of the same issues you did. In general, most of these were mistakes on the COC and not a discrepancy between the MST/PST. The most obvious mistake was that Arsenic and Chromium were almost universally switched on all wells. You also correctly identified the incorrect methods listed for some of the PMP analytes. I have summarized all mistakes and the required changes to the lab log-in below.

Sample ID	Remove	Add	Program	SDG
MW-50-95-Q216	Dissolved Arsenic (SW 6020)	Dissolved Chromium (SW 6020)	GMP	N019542
MW-50-200-	Dissolved Arsenic (SW 6020)	Dissolved Chromium (SW 6020)	GMP	N019542

Q216				
MW-19-Q216	Dissolved Arsenic (SW 6020)	Dissolved Chromium (SW 6020)	GMP	N019542
MW-37D-Q216	Dissolved Arsenic (SW 6020)	Dissolved Chromium (SW 6020)	GMP	N019542
MW-31-60-Q216	Selenium (SW 6020), Molybdenum (SW 6020)	Dissolved Chromium (SW 6020), Dissolved Manganese (SW 6020)	GMP	N019542
MW-20-70-Q216	Dissolved Arsenic (SW 6020)	Dissolved Chromium (SW 6020)	GMP	N019542
MW-20-100-Q216	Dissolved Arsenic (SW 6020)	Dissolved Chromium (SW 6020)	GMP	N019542
PE-01-Q216	Dissolved Chromium (200.8), Manganese (200.8)	Dissolved Chromium (6020), Manganese (6020)	PMP	N019544
TW-03D-Q216	Dissolved Chromium (200.8), Manganese (200.8)	Dissolved Chromium (6020), Manganese (6020)	PMP	N019544

There were however, a few items called out in the log-in review which were not mistakes, and some mistakes look to have been missed. The fact that all RMP analytes show up as unscheduled is likely due to the fact that the PST is for May, though we are collecting this week.

In summary:

- PE-01: Alakalinity shown as unplanned; but is on the PST. Alkalinty as CaCO3 shown as missing, but this was requested.
- TW-03D: Hex Chrome, and Alakalinity shown as unplanned; but are on the PST
- MW-50-200 and MW-19, the log-in review did not show that unplanned arsenic was requested, only that Chromium was missed.

Sean Maurel, EIT | Environmental Engineer 1 | sean.maurel@arcadis.com
Arcadis | Arcadis U.S., Inc.
2999 Oak Road, Suite 300 | Walnut Creek, CA | 94597 | USA
M. + 1 925 330 8741

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Thursday, April 28, 2016 3:37 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>; Maurel, Sean <Sean.Maurel@arcadis.com>
Cc: Harmon, Alison <Ali.Harmon@arcadis.com>; Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; rsunjara@blainetech.com; Bloes, Marty <mbloes@pivox.com>; Bush, Dan <Dan.Bush@arcadis.com>; 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: URGENT !!!!!! COC and Work Order Summary for Samples Received 4/28/2016
Importance: High

Hi All-

These logins are going to require Kalib, Laura and Sean to get on the phone to resolve. Kalib and I have been on the phone for the last hour going through issues that were identified by the tool. The tool was really put to the test with these. Please contact Kalib ASAP. Here is what I know.

1) Looks like we have the wrong methods for the metals requested on the COC for the PMP program at minimum. Looks like we need 200 series methods for these samples and not the 6000 series as requested.
2) Looks like we have several samples requested for dissolved arsenic that require dissolved chromium.
3) We know that hex chrome was not included in the rushed labels Kalib prepared on the phone.

There may be other issues with these logins that Kalib, Laura, and Sean identify because it appears that we have some disconnects between the MST and PST possibly that I cannot easily follow the communication of what was changed.

Thanks
Dan

From: ASSET LV Sample Control [mailto:samplecontrol.lv@assetlaboratories.com]
Sent: Thursday, April 28, 2016 12:08 PM
To: Dan.Bush@arcadis.com; Daniel Moore <Daniel.Moore@critigen.com>
Cc: Laura.Madsen@arcadis.com; Sean.Maurel@arcadis.com; Ali.Harmon@arcadis-us.com; Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; rsunjara@blainetech.com; mbloes@pivox.com
Subject: COC and Work Order Summary for Samples Received 4/28/2016

Enclosed are COC and WO Summary for samples received 4/28/2016. If you have any questions, please contact your Project Manager listed below.

Marlon Cartin
3151 W. Post Road
Las Vegas, Nevada
89118
Tel. No.: (702)-307-2659 Ext. 410
Cel. No.: (702)-439-0421
Email: marlon@assetlaboratories.com

Thank you for using ASSET Laboratories.

<image001.jpg>

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

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Daniel Moore
Director Data Management Solutions

CRITIGEN

Daniel.Moore@critigen.com

critigen.com

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ASSET Laboratories

WORK ORDER Summary

02-May-16

WorkOrder: N019542

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019542-001A	MW-53D-Q216	4/27/2016 8:37:00 AM	5/11/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-001B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-002A	MW-53M-Q216	4/27/2016 8:38:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-002B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-003A	MW-50-095-Q216	4/27/2016 12:56:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-003B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-004A	MW-50-200-Q216	4/27/2016 12:18:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-004B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-005A	MW-19-Q216	4/27/2016 1:35:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-005B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-006A	MW-35-060-Q216	4/27/2016 11:20:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-006B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-006C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-16

WorkOrder: N019542

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019542-007A	MW-35-135-Q216	4/27/2016 10:30:00 AM	5/11/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-007B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-007C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-008A	MW-25-Q216	4/27/2016 2:15:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-008B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-008C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-009A	MW-37D-Q216	4/27/2016 2:54:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-009B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-009C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-010A	MW-41D-Q216	4/27/2016 11:45:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-010B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-010C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-011A	MW-14-Q216	4/27/2016 10:46:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-16

WorkOrder: N019542

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019542-011B	MW-14-Q216	4/27/2016 10:46:00 AM	5/11/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-011C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-012A	MW-31-060-Q216	4/27/2016 2:51:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-012B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-013A	MW-20-070-Q216	4/27/2016 1:30:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-013B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-013C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-014A	MW-20-100-Q216	4/27/2016 2:13:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-014B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-014C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-015A	MW-20-130-Q216	4/27/2016 12:48:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-015B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-16

WorkOrder: N019542

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019542-015B	MW-20-130-Q216	4/27/2016 12:48:00 PM	5/11/2016	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-015C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-016A	MW-51-Q216	4/27/2016 3:31:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-016B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-016C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-017A	MW-709-Q216	4/27/2016 3:50:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-018A	MW-708-Q216	4/27/2016 3:05:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-019A	MW-908-Q216	4/27/2016 11:30:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-019B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-019C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-020A	MW-74-240-Q216	4/27/2016 2:40:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019542-020B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019542-020C			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019542-021A	FOLDER		5/11/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/11/2016		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N019543

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N019543

Item	Pages
Cover Page	1-7
Analytical Result / QC Summary Reports	8-127
Sample Receiving Items	128-139
List of Analysts	140
Raw Data	
EPA 120.1	141-145
SM 4500 H+B	146-150
SM 2540D	151-166
EPA 218.6	167-344
EPA 4500-NO3F	345-358
EPA 6010B_Dissolved	359-413
EPA 6010B	414-444
EPA 6020_Dissolved	445-513

May 16, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019543

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 27, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N019543

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 218.6:

Method Blank (MB-R108256) has hit greater than 0.02ppb.Sample results were non-detect (ND) therefore, reanalysis of the samples was not necessary.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron on QC samples N019500-006B-MS and N019500-006B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Iron on QC sample N019543-002B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ASSET Laboratories

Date: *16-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N019543
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019543-001A	C-R22A-D-Q216	Groundwater	4/27/2016 11:20:00 AM	4/27/2016	5/16/2016
N019543-001B	C-R22A-D-Q216	Groundwater	4/27/2016 11:20:00 AM	4/27/2016	5/16/2016
N019543-001C	C-R22A-D-Q216	Groundwater	4/27/2016 11:20:00 AM	4/27/2016	5/16/2016
N019543-001D	C-R22A-D-Q216	Groundwater	4/27/2016 11:20:00 AM	4/27/2016	5/16/2016
N019543-001E	C-R22A-D-Q216	Groundwater	4/27/2016 11:20:00 AM	4/27/2016	5/16/2016
N019543-002A	C-R22A-S-Q216	Groundwater	4/27/2016 11:40:00 AM	4/27/2016	5/16/2016
N019543-002B	C-R22A-S-Q216	Groundwater	4/27/2016 11:40:00 AM	4/27/2016	5/16/2016
N019543-002C	C-R22A-S-Q216	Groundwater	4/27/2016 11:40:00 AM	4/27/2016	5/16/2016
N019543-002D	C-R22A-S-Q216	Groundwater	4/27/2016 11:40:00 AM	4/27/2016	5/16/2016
N019543-002E	C-R22A-S-Q216	Groundwater	4/27/2016 11:40:00 AM	4/27/2016	5/16/2016
N019543-003A	C-TAZ-D-Q216	Groundwater	4/27/2016 9:30:00 AM	4/27/2016	5/16/2016
N019543-003B	C-TAZ-D-Q216	Groundwater	4/27/2016 9:30:00 AM	4/27/2016	5/16/2016
N019543-003C	C-TAZ-D-Q216	Groundwater	4/27/2016 9:30:00 AM	4/27/2016	5/16/2016
N019543-003D	C-TAZ-D-Q216	Groundwater	4/27/2016 9:30:00 AM	4/27/2016	5/16/2016
N019543-003E	C-TAZ-D-Q216	Groundwater	4/27/2016 9:30:00 AM	4/27/2016	5/16/2016
N019543-004A	C-TAZ-S-Q216	Groundwater	4/27/2016 9:50:00 AM	4/27/2016	5/16/2016
N019543-004B	C-TAZ-S-Q216	Groundwater	4/27/2016 9:50:00 AM	4/27/2016	5/16/2016
N019543-004C	C-TAZ-S-Q216	Groundwater	4/27/2016 9:50:00 AM	4/27/2016	5/16/2016
N019543-004D	C-TAZ-S-Q216	Groundwater	4/27/2016 9:50:00 AM	4/27/2016	5/16/2016
N019543-004E	C-TAZ-S-Q216	Groundwater	4/27/2016 9:50:00 AM	4/27/2016	5/16/2016
N019543-005A	MW-915-Q216	Groundwater	4/27/2016 8:30:00 AM	4/27/2016	5/16/2016
N019543-005B	MW-915-Q216	Groundwater	4/27/2016 8:30:00 AM	4/27/2016	5/16/2016
N019543-005C	MW-915-Q216	Groundwater	4/27/2016 8:30:00 AM	4/27/2016	5/16/2016
N019543-005D	MW-915-Q216	Groundwater	4/27/2016 8:30:00 AM	4/27/2016	5/16/2016
N019543-005E	MW-915-Q216	Groundwater	4/27/2016 8:30:00 AM	4/27/2016	5/16/2016
N019543-006A	R-19-Q216	Groundwater	4/27/2016 8:20:00 AM	4/27/2016	5/16/2016
N019543-006B	R-19-Q216	Groundwater	4/27/2016 8:20:00 AM	4/27/2016	5/16/2016
N019543-006C	R-19-Q216	Groundwater	4/27/2016 8:20:00 AM	4/27/2016	5/16/2016
N019543-006D	R-19-Q216	Groundwater	4/27/2016 8:20:00 AM	4/27/2016	5/16/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N019543
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019543-006E	R-19-Q216	Groundwater	4/27/2016 8:20:00 AM	4/27/2016	5/16/2016
N019543-007A	R-28-Q216	Groundwater	4/27/2016 8:50:00 AM	4/27/2016	5/16/2016
N019543-007B	R-28-Q216	Groundwater	4/27/2016 8:50:00 AM	4/27/2016	5/16/2016
N019543-007C	R-28-Q216	Groundwater	4/27/2016 8:50:00 AM	4/27/2016	5/16/2016
N019543-007D	R-28-Q216	Groundwater	4/27/2016 8:50:00 AM	4/27/2016	5/16/2016
N019543-007E	R-28-Q216	Groundwater	4/27/2016 8:50:00 AM	4/27/2016	5/16/2016
N019543-008A	R63-Q216	Groundwater	4/27/2016 11:00:00 AM	4/27/2016	5/16/2016
N019543-008B	R63-Q216	Groundwater	4/27/2016 11:00:00 AM	4/27/2016	5/16/2016
N019543-008C	R63-Q216	Groundwater	4/27/2016 11:00:00 AM	4/27/2016	5/16/2016
N019543-008D	R63-Q216	Groundwater	4/27/2016 11:00:00 AM	4/27/2016	5/16/2016
N019543-008E	R63-Q216	Groundwater	4/27/2016 11:00:00 AM	4/27/2016	5/16/2016
N019543-009A	C-BNS-Q216	Groundwater	4/27/2016 12:10:00 PM	4/27/2016	5/16/2016
N019543-009B	C-BNS-Q216	Groundwater	4/27/2016 12:10:00 PM	4/27/2016	5/16/2016
N019543-009C	C-BNS-Q216	Groundwater	4/27/2016 12:10:00 PM	4/27/2016	5/16/2016
N019543-009D	C-BNS-Q216	Groundwater	4/27/2016 12:10:00 PM	4/27/2016	5/16/2016
N019543-009E	C-BNS-Q216	Groundwater	4/27/2016 12:10:00 PM	4/27/2016	5/16/2016
N019543-010A	MW-916-Q216	Groundwater	4/27/2016 12:20:00 PM	4/27/2016	5/16/2016
N019543-010B	MW-916-Q216	Groundwater	4/27/2016 12:20:00 PM	4/27/2016	5/16/2016
N019543-010C	MW-916-Q216	Groundwater	4/27/2016 12:20:00 PM	4/27/2016	5/16/2016
N019543-010D	MW-916-Q216	Groundwater	4/27/2016 12:20:00 PM	4/27/2016	5/16/2016
N019543-010E	MW-916-Q216	Groundwater	4/27/2016 12:20:00 PM	4/27/2016	5/16/2016
N019543-011A	C-I-3-D-Q216	Groundwater	4/27/2016 10:20:00 AM	4/27/2016	5/16/2016
N019543-011B	C-I-3-D-Q216	Groundwater	4/27/2016 10:20:00 AM	4/27/2016	5/16/2016
N019543-011C	C-I-3-D-Q216	Groundwater	4/27/2016 10:20:00 AM	4/27/2016	5/16/2016
N019543-011D	C-I-3-D-Q216	Groundwater	4/27/2016 10:20:00 AM	4/27/2016	5/16/2016
N019543-011E	C-I-3-D-Q216	Groundwater	4/27/2016 10:20:00 AM	4/27/2016	5/16/2016
N019543-012A	C-I-3-S-Q216	Groundwater	4/27/2016 10:40:00 AM	4/27/2016	5/16/2016
N019543-012B	C-I-3-S-Q216	Groundwater	4/27/2016 10:40:00 AM	4/27/2016	5/16/2016
N019543-012C	C-I-3-S-Q216	Groundwater	4/27/2016 10:40:00 AM	4/27/2016	5/16/2016
N019543-012D	C-I-3-S-Q216	Groundwater	4/27/2016 10:40:00 AM	4/27/2016	5/16/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N019543
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019543-012E	C-I-3-S-Q216	Groundwater	4/27/2016 10:40:00 AM	4/27/2016	5/16/2016
N019543-013A	C-MAR-D-Q216	Groundwater	4/27/2016 12:45:00 PM	4/27/2016	5/16/2016
N019543-013B	C-MAR-D-Q216	Groundwater	4/27/2016 12:45:00 PM	4/27/2016	5/16/2016
N019543-013C	C-MAR-D-Q216	Groundwater	4/27/2016 12:45:00 PM	4/27/2016	5/16/2016
N019543-013D	C-MAR-D-Q216	Groundwater	4/27/2016 12:45:00 PM	4/27/2016	5/16/2016
N019543-013E	C-MAR-D-Q216	Groundwater	4/27/2016 12:45:00 PM	4/27/2016	5/16/2016
N019543-014A	C-MAR-S-Q216	Groundwater	4/27/2016 12:55:00 PM	4/27/2016	5/16/2016
N019543-014B	C-MAR-S-Q216	Groundwater	4/27/2016 12:55:00 PM	4/27/2016	5/16/2016
N019543-014C	C-MAR-S-Q216	Groundwater	4/27/2016 12:55:00 PM	4/27/2016	5/16/2016
N019543-014D	C-MAR-S-Q216	Groundwater	4/27/2016 12:55:00 PM	4/27/2016	5/16/2016
N019543-014E	C-MAR-S-Q216	Groundwater	4/27/2016 12:55:00 PM	4/27/2016	5/16/2016

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"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-001

Client Sample ID: C-R22A-D-Q216
Collection Date: 4/27/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	970	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-002

Client Sample ID: C-R22A-S-Q216
Collection Date: 4/27/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	980	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	970	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	970	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-005

Client Sample ID: MW-915-Q216
Collection Date: 4/27/2016 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	970	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-006

Client Sample ID: R-19-Q216
Collection Date: 4/27/2016 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	970	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	980	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	990	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-009

Client Sample ID: C-BNS-Q216
Collection Date: 4/27/2016 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	980	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-010

Client Sample ID: MW-916-Q216
Collection Date: 4/27/2016 12:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428A**	QC Batch: **R107159**			PrepDate			Analyst: **QBM**
Specific Conductance	990	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-011

Client Sample ID: C-I-3-D-Q216
Collection Date: 4/27/2016 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428B**	QC Batch: **R107160**			PrepDate			Analyst: **QBM**
Specific Conductance	990	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-012

Client Sample ID: C-I-3-S-Q216
Collection Date: 4/27/2016 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428B**	QC Batch: **R107160**			PrepDate			Analyst: **QBM**
Specific Conductance	980	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428B**	QC Batch: **R107160**			PrepDate			Analyst: **QBM**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428B**	QC Batch: **R107160**			PrepDate			Analyst: **QBM**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N019543-010DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **107159**
Client ID: **ZZZZZZ** Batch ID: **R107159** TestNo: **EPA 120.1** Analysis Date: **4/28/2016** SeqNo: **2309212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	986.000	0.10						987.0	0.101	10	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N019544-002CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	107160
Client ID:	ZZZZZZ	Batch ID:	R107160	TestNo:	EPA 120.1			Analysis Date:	4/28/2016	SeqNo:	2309220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8040.000	0.10						8060	0.248	10	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-001

Client Sample ID: C-R22A-D-Q216
Collection Date: 4/27/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**			PrepDate			Analyst: **QBM**
pH	8.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-002

Client Sample ID: C-R22A-S-Q216
Collection Date: 4/27/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**			PrepDate			Analyst: **QBM**
pH	8.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-003

Client Sample ID: C-TAZ-D-Q216
Collection Date: 4/27/2016 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**			PrepDate			Analyst: **QBM**
pH	8.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-004

Client Sample ID: C-TAZ-S-Q216
Collection Date: 4/27/2016 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**			PrepDate			Analyst: **QBM**
pH	8.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-005

Client Sample ID: MW-915-Q216
Collection Date: 4/27/2016 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**			PrepDate			Analyst: **QBM**
pH	8.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-006

Client Sample ID: R-19-Q216
Collection Date: 4/27/2016 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**			PrepDate			Analyst: **QBM**
pH	8.3	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-007

Client Sample ID: R-28-Q216
Collection Date: 4/27/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**		PrepDate				Analyst: **QBM**
pH	8.3	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-008

Client Sample ID: R63-Q216
Collection Date: 4/27/2016 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**			PrepDate			Analyst: **QBM**
pH	8.1	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**			PrepDate			Analyst: **QBM**
pH	8.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2016

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-010

Client Sample ID: MW-916-Q216
Collection Date: 4/27/2016 12:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428C**	QC Batch: **R107161**			PrepDate			Analyst: **QBM**
pH	8.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-011

Client Sample ID: C-I-3-D-Q216
Collection Date: 4/27/2016 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428D**	QC Batch: **R107162**			PrepDate			Analyst: **QBM**
pH	8.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-012

Client Sample ID: C-I-3-S-Q216
Collection Date: 4/27/2016 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428D**	QC Batch: **R107162**			PrepDate			Analyst: **QBM**
pH	8.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-013

Client Sample ID: C-MAR-D-Q216
Collection Date: 4/27/2016 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428D**	QC Batch: **R107162**			PrepDate			Analyst: **QBM**
pH	7.7	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428D**	QC Batch: **R107162**			PrepDate			Analyst: **QBM**
pH	7.7	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N019543-010DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **107161**
Client ID: **ZZZZZZ** Batch ID: **R107161** TestNo: **SM4500-H+B** Analysis Date: **4/28/2016** SeqNo: **2309231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.240	0.10						8.240	0	10	H
Temp. at time of pH Analysis	18.400	0.10						18.10	1.64	10	H

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID	N019543-014DDUP	SampType:	DUP	TestCode:	150.1_4500H	Units:	pH Units	Prep Date:		RunNo:	107162
Client ID:	ZZZZZZ	Batch ID:	R107162	TestNo:	SM4500-H+B			Analysis Date:	4/28/2016	SeqNo:	2309236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.680	0.10						7.700	0.260	10	H
Temp. at time of pH Analysis	19.700	0.10						19.60	0.509	10	H

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 11:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160429A**	QC Batch: **57240**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 09:22 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160429A**	QC Batch: **57240**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 09:22 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160429A**	QC Batch: **57240**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 09:22 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160429A**	QC Batch: **57240**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 09:22 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160429A**	QC Batch: **57240**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 09:22 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-006

Client Sample ID: R-19-Q216
Collection Date: 4/27/2016 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160429A**	QC Batch: **57240**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 09:22 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160429A**	QC Batch: **57240**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 09:22 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160429A**	QC Batch: **57240**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 09:22 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160429A**	QC Batch: **57240**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 09:22 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160429G**	QC Batch: **57241**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 10:45 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160429G**	QC Batch: **57241**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 10:45 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160429G**	QC Batch: **57241**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 10:45 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160429G**	QC Batch: **57241**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	100	10	10		mg/L	1	4/29/2016 10:45 AM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160429G**	QC Batch: **57241**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	100	10	10		mg/L	1	4/29/2016 10:45 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-57240	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	4/29/2016	RunNo:	107178
Client ID:	LCSW	Batch ID:	57240	TestNo:	SM2540D			Analysis Date:	4/29/2016	SeqNo:	2310321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	951.000	10	1000	0	95.1	80	120				

Sample ID	MB-57240	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	4/29/2016	RunNo:	107178
Client ID:	PBW	Batch ID:	57240	TestNo:	SM2540D			Analysis Date:	4/29/2016	SeqNo:	2310322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N019543-009D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	4/29/2016	RunNo:	107178
Client ID:	ZZZZZZ	Batch ID:	57240	TestNo:	SM2540D			Analysis Date:	4/29/2016	SeqNo:	2310333

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-57241	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	4/29/2016	RunNo:	107184
Client ID:	LCSW	Batch ID:	57241	TestNo:	SM2540D			Analysis Date:	4/29/2016	SeqNo:	2310390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	940.000	10	1000	0	94.0	80	120				

Sample ID	MB-57241	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	4/29/2016	RunNo:	107184
Client ID:	PBW	Batch ID:	57241	TestNo:	SM2540D			Analysis Date:	4/29/2016	SeqNo:	2310391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N019559-002D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	4/29/2016	RunNo:	107184
Client ID:	ZZZZZZ	Batch ID:	57241	TestNo:	SM2540D			Analysis Date:	4/29/2016	SeqNo:	2310402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 11:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 04:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 09:25 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 05:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 10:21 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-003

Client Sample ID: C-TAZ-D-Q216
Collection Date: 4/27/2016 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 05:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 10:26 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-004

Client Sample ID: C-TAZ-S-Q216
Collection Date: 4/27/2016 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 05:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 10:32 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-005

Client Sample ID: MW-915-Q216
Collection Date: 4/27/2016 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 06:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 10:38 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-006

Client Sample ID: R-19-Q216
Collection Date: 4/27/2016 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 06:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 10:43 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 07:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 10:49 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-008

Client Sample ID: R63-Q216
Collection Date: 4/27/2016 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 07:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 10:54 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 07:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 11:00 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 08:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 11:16 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 10:18 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 11:22 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-012

Client Sample ID: C-I-3-S-Q216
Collection Date: 4/27/2016 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 09:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 11:33 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 09:20 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 11:39 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-014

Client Sample ID: C-MAR-S-Q216
Collection Date: 4/27/2016 12:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2016 09:40 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2016 11:44 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108256	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	PBW	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315660

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

Sample ID	LCS-R108256	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	LCSW	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315661

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.940	0.20	5.000	0	98.8	90	110				

Sample ID	N019543-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315663

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0.08410	0	20	

Sample ID	N019543-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315664

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0.08410	101	90	110				

Sample ID	N019543-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.108	0.20	1.000	0.08410	102	90	110	1.089	1.73	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019543-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.061	0.20	1.000	0	106	90	110				

Sample ID	N019543-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315671

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.064	0.20	1.000	0	106	90	110				

Sample ID	N019543-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315675

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID	N019543-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID	N019543-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315681

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019543-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.113	0.20	1.000	0.08350	103	90	110				

Sample ID **N019543-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.001	0.20	1.000	0.09420	90.7	90	110				

Sample ID **N019543-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N019543-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID **N019543-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.148	0.20	1.000	0.09570	105	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019543-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.09980	103	90	110				

Sample ID **N019544-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.231	0.20	1.000	1.201	103	90	110				

Sample ID **N019543-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R108290**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **PBW**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317490**

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

Sample ID **LCS-R108290**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **LCSW**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.179	0.20	5.000	0	104	90	110				

Sample ID **N019543-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N019559-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.071	0.20						0.06900	0	20	

Sample ID **N019559-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0.06900	100	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019559-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:			RunNo:	108290	
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016		SeqNo:	2317497	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.104	0.20	1.000	0.06900	104	90	110	1.070	3.16	20			

Sample ID	N019559-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:			RunNo:	108290	
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016		SeqNo:	2317499	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.068	0.20	1.000	0.06840	100	90	110						

Sample ID	N019559-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:			RunNo:	108290	
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016		SeqNo:	2317505	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110						

Sample ID	N019559-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:			RunNo:	108290	
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016		SeqNo:	2317507	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.155	0.20	1.000	0.1224	103	90	110						

Sample ID	N019559-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:			RunNo:	108290	
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016		SeqNo:	2317509	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.201	0.20	1.000	0.1407	106	90	110						

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019559-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.202	0.20	1.000	0.1106	109	90	110				

Sample ID **N019559-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Sample ID **N019559-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	109	90	110				

Sample ID **N019559-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.064	0.20	1.000	0	106	90	110				

Sample ID **N019559-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019559-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.215	0.20	1.000	0.1347	108	90	110				

Sample ID **N019559-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.197	0.20	1.000	0.1899	101	90	110				

Sample ID **N019559-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID **N019559-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-57229**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **PBW**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.052	1.0									

Sample ID **LCS-57229**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **LCSW**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.494	1.0	10.00	0	94.9	85	115				

Sample ID **N019543-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.192	1.0	10.00	0	91.9	75	125				

Sample ID **N019543-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.231	1.0	10.00	0	92.3	75	125	9.192	0.431	20	

Sample ID **N019543-011B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.194	1.0	10.00	0	81.9	75	125				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 11:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-006

Client Sample ID: R-19-Q216
Collection Date: 4/27/2016 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.27	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q216
Lab Order:	N019543	**Collection Date:**	4/27/2016 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019543-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160503B**	QC Batch: **R108306**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.24	0.022	0.050		mg/L	1	5/3/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R108306	**MBLK**	**4500N03F_W**	**mg/L**		**108306**
Client ID: **PBW**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317860**

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

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R108306	**LCS**	**4500N03F_W**	**mg/L**		**108306**
Client ID: **LCSW**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.480	0.050	0.5000	0	96.0	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019543-001EDUP	**DUP**	**4500N03F_W**	**mg/L**		**108306**
Client ID: **ZZZZZZ**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.398	0.050						0.3993	0.251	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019543-001EMS	**MS**	**4500N03F_W**	**mg/L**		**108306**
Client ID: **ZZZZZZ**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.881	0.050	0.5000	0.3993	96.3	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019543-001EMSD	**MSD**	**4500N03F_W**	**mg/L**		**108306**
Client ID: **ZZZZZZ**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.932	0.050	0.5000	0.3993	106	75	125	0.8810	5.57	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-001

Client Sample ID: C-R22A-D-Q216
Collection Date: 4/27/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**			PrepDate	**4/28/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	4/28/2016 09:42 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	110	1.8	20		ug/L	1	5/4/2016 10:05 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-002

Client Sample ID: C-R22A-S-Q216
Collection Date: 4/27/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**			PrepDate	**4/28/2016**		Analyst: **CEI**
Iron	110	1.8	20		ug/L	1	4/28/2016 09:48 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	87	1.8	20		ug/L	1	5/4/2016 10:32 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-003

Client Sample ID: C-TAZ-D-Q216
Collection Date: 4/27/2016 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**				PrepDate	**4/28/2016**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	4/28/2016 09:58 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**				PrepDate	**4/29/2016**	Analyst: **CEI**
Iron	83	1.8	20		ug/L	1	5/4/2016 10:37 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-004

Client Sample ID: C-TAZ-S-Q216
Collection Date: 4/27/2016 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**			PrepDate	**4/28/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	4/28/2016 10:15 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	55	1.8	20		ug/L	1	5/4/2016 10:43 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-005

Client Sample ID: MW-915-Q216
Collection Date: 4/27/2016 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**			PrepDate	**4/28/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	4/28/2016 10:20 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	65	1.8	20		ug/L	1	5/4/2016 10:59 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-006

Client Sample ID: R-19-Q216
Collection Date: 4/27/2016 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**			PrepDate	**4/28/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	4/28/2016 10:26 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	63	1.8	20		ug/L	1	5/4/2016 11:04 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-007

Client Sample ID: R-28-Q216
Collection Date: 4/27/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**				PrepDate	**4/28/2016**	Analyst: **CEI**
Iron	28	1.8	20		ug/L	1	4/28/2016 10:31 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**				PrepDate	**4/29/2016**	Analyst: **CEI**
Iron	110	1.8	20		ug/L	1	5/4/2016 11:10 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-008

Client Sample ID: R63-Q216
Collection Date: 4/27/2016 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**			PrepDate	**4/28/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	4/28/2016 10:36 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	71	1.8	20		ug/L	1	5/4/2016 11:15 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-009

Client Sample ID: C-BNS-Q216
Collection Date: 4/27/2016 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**			PrepDate	**4/28/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	4/28/2016 10:42 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	40	1.8	20		ug/L	1	5/4/2016 11:21 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-010

Client Sample ID: MW-916-Q216
Collection Date: 4/27/2016 12:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**			PrepDate	**4/28/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	4/28/2016 10:47 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	40	1.8	20		ug/L	1	5/4/2016 11:26 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-011

Client Sample ID: C-I-3-D-Q216
Collection Date: 4/27/2016 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160428D**	QC Batch: **57214**			PrepDate	**4/28/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	4/28/2016 10:52 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	95	1.8	20		ug/L	1	5/4/2016 11:31 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-012

Client Sample ID: C-I-3-S-Q216
Collection Date: 4/27/2016 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/10/2016 04:49 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	40	1.8	20		ug/L	1	5/4/2016 11:42 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-013

Client Sample ID: C-MAR-D-Q216
Collection Date: 4/27/2016 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	35	1.8	20		ug/L	1	5/10/2016 05:15 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	4000	1.8	20		ug/L	1	5/4/2016 11:47 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-014

Client Sample ID: C-MAR-S-Q216
Collection Date: 4/27/2016 12:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/10/2016 05:21 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	4000	1.8	20		ug/L	1	5/4/2016 12:02 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-57214**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/28/2016**	RunNo: **107171**
Client ID: **PBW**	Batch ID: **57214**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/28/2016**	SeqNo: **2310078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	4.372	20									

Sample ID **LCS-57214**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/28/2016**	RunNo: **107171**
Client ID: **LCSW**	Batch ID: **57214**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/28/2016**	SeqNo: **2310079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.437	20	100.0	0	106	85	115				

Sample ID **N019500-006B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/28/2016**	RunNo: **107171**
Client ID: **ZZZZZZ**	Batch ID: **57214**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/28/2016**	SeqNo: **2310083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	503.141	20	100.0	443.2	59.9	75	125				S

Sample ID **N019500-006B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/28/2016**	RunNo: **107171**
Client ID: **ZZZZZZ**	Batch ID: **57214**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/28/2016**	SeqNo: **2310084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	510.539	20	100.0	443.2	67.3	75	125	503.1	1.46	20	S

Sample ID **N019543-002B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **4/28/2016**	RunNo: **107171**
Client ID: **ZZZZZZ**	Batch ID: **57214**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/28/2016**	SeqNo: **2310097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.687	20	100.0	113.8	-5.06	75	125				S

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-57287	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/4/2016	RunNo:	108380
Client ID:	PBW	Batch ID:	57287	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322803

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

Sample ID	LCS-57287	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/4/2016	RunNo:	108380
Client ID:	LCSW	Batch ID:	57287	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322804

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.782	20	100.0	0	109	85	115				

Sample ID	N019543-012B-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/4/2016	RunNo:	108380
Client ID:	ZZZZZZ	Batch ID:	57287	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322808

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.884	20	100.0	18.46	101	75	125				

Sample ID	N019543-012B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/4/2016	RunNo:	108380
Client ID:	ZZZZZZ	Batch ID:	57287	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322809

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	121.560	20	100.0	18.46	103	75	125	119.9	1.39	20	

Sample ID	N019559-007B-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/4/2016	RunNo:	108380
Client ID:	ZZZZZZ	Batch ID:	57287	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322821

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.502	20	100.0	27.01	91.5	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-57237	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	PBW	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315868

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	2.301	20									

Sample ID	N019543-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	ZZZZZZ	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315873

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	203.845	20	100.0	114.2	89.6	75	125				

Sample ID	N019543-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	ZZZZZZ	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315874

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	203.705	20	100.0	114.2	89.5	75	125	203.8	0.0685	20	

Sample ID	N019543-011C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	ZZZZZZ	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	178.454	20	100.0	94.57	83.9	75	125				

Sample ID	LCS-57237	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	LCSW	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315899

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	104.535	20	100.0	0	105	85	115				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-001

Client Sample ID: C-R22A-D-Q216
Collection Date: 4/27/2016 11:20:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160504D** QC Batch: **57229** PrepDate **4/29/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.1	0.025	0.10		µg/L	1	5/4/2016 09:25 PM
Barium	130	0.35	5.0		µg/L	5	5/9/2016 12:09 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 09:25 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/4/2016 09:25 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/4/2016 09:25 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-002

Client Sample ID: C-R22A-S-Q216
Collection Date: 4/27/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	5/4/2016 10:21 PM
Barium	130	0.070	1.0		µg/L	1	5/4/2016 10:21 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 10:21 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/4/2016 10:21 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/4/2016 10:21 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-003

Client Sample ID: C-TAZ-D-Q216
Collection Date: 4/27/2016 9:30:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160504D** QC Batch: **57229** PrepDate **4/29/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.025	0.10		µg/L	1	5/4/2016 10:26 PM
Barium	130	0.070	1.0		µg/L	1	5/4/2016 10:26 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 10:26 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/4/2016 10:26 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/4/2016 10:26 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-004

Client Sample ID: C-TAZ-S-Q216
Collection Date: 4/27/2016 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	2.4	0.025	0.10		µg/L	1	5/4/2016 10:32 PM
Barium	130	0.070	1.0		µg/L	1	5/4/2016 10:32 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 10:32 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	5/4/2016 10:32 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/4/2016 10:32 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-005

Client Sample ID: MW-915-Q216
Collection Date: 4/27/2016 8:30:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160504D** QC Batch: **57229** PrepDate **4/29/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.2	0.025	0.10		µg/L	1	5/4/2016 10:38 PM
Barium	120	0.070	1.0		µg/L	1	5/4/2016 10:38 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 10:38 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/4/2016 10:38 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/4/2016 10:38 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-006

Client Sample ID: R-19-Q216
Collection Date: 4/27/2016 8:20:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160504D** QC Batch: **57229** PrepDate **4/29/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.2	0.025	0.10		µg/L	1	5/4/2016 10:43 PM
Barium	130	0.070	1.0		µg/L	1	5/4/2016 10:43 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 10:43 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/4/2016 10:43 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/4/2016 10:43 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-007

Client Sample ID: R-28-Q216
Collection Date: 4/27/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57229**			PrepDate	**4/29/2016**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/4/2016 10:49 PM
Barium	120	0.070	1.0		µg/L	1	5/4/2016 10:49 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 10:49 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/4/2016 10:49 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/4/2016 10:49 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-008

Client Sample ID: R63-Q216
Collection Date: 4/27/2016 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	5/4/2016 10:54 PM
Barium	120	0.070	1.0		µg/L	1	5/4/2016 10:54 PM
Manganese	5.3	0.056	0.50		µg/L	1	5/4/2016 10:54 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/4/2016 10:54 PM
Selenium	1.3	0.028	0.50		µg/L	1	5/4/2016 10:54 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-009

Client Sample ID: C-BNS-Q216
Collection Date: 4/27/2016 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	5/4/2016 11:00 PM
Barium	120	0.070	1.0		µg/L	1	5/4/2016 11:00 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 11:00 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/4/2016 11:00 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/9/2016 12:47 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-010

Client Sample ID: MW-916-Q216
Collection Date: 4/27/2016 12:20:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160504D** QC Batch: **57229** PrepDate **4/29/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.1	0.025	0.10		µg/L	1	5/4/2016 11:16 PM
Barium	120	0.070	1.0		µg/L	1	5/4/2016 11:16 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 11:16 PM
Molybdenum	4.7	0.039	0.50		µg/L	1	5/4/2016 11:16 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/4/2016 11:16 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-011

Client Sample ID: C-I-3-D-Q216
Collection Date: 4/27/2016 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	5/4/2016 11:22 PM
Barium	130	0.35	5.0		µg/L	5	5/9/2016 12:37 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 11:22 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/4/2016 11:22 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/4/2016 11:22 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-012

Client Sample ID: C-I-3-S-Q216
Collection Date: 4/27/2016 10:40:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160504D** QC Batch: **57229** PrepDate **4/29/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.2	0.025	0.10		µg/L	1	5/4/2016 11:33 PM
Barium	120	0.070	1.0		µg/L	1	5/4/2016 11:33 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2016 11:33 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/4/2016 11:33 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/4/2016 11:33 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-013

Client Sample ID: C-MAR-D-Q216
Collection Date: 4/27/2016 12:45:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160504D** QC Batch: **57229** PrepDate **4/29/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.1	0.025	0.10		µg/L	1	5/4/2016 11:39 PM
Barium	120	0.070	1.0		µg/L	1	5/4/2016 11:39 PM
Manganese	53	0.056	0.50		µg/L	1	5/4/2016 11:39 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	5/4/2016 11:39 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/4/2016 11:39 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019543
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019543-014

Client Sample ID: C-MAR-S-Q216
Collection Date: 4/27/2016 12:55:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160504D** QC Batch: **57229** PrepDate **4/29/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.9	0.025	0.10		µg/L	1	5/4/2016 11:44 PM
Barium	120	0.070	1.0		µg/L	1	5/4/2016 11:44 PM
Manganese	49	0.056	0.50		µg/L	1	5/4/2016 11:44 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/4/2016 11:44 PM
Selenium	1.3	0.028	0.50		µg/L	1	5/9/2016 12:53 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57229**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108271**
Client ID: **PBW**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.123	0.50									
Selenium	ND	0.50									

Sample ID **LCS-57229**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108271**
Client ID: **LCSW**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.618	0.10	10.00	0	96.2	85	115				
Barium	96.988	1.0	100.0	0	97.0	85	115				
Manganese	90.741	0.50	100.0	0	90.7	85	115				
Molybdenum	9.472	0.50	10.00	0	94.7	85	115				
Selenium	8.892	0.50	10.00	0	88.9	85	115				

Sample ID **N019543-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108271**
Client ID: **ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.873	0.10	10.00	2.132	97.4	75	125				
Manganese	88.167	0.50	100.0	0.1020	88.1	75	125				
Molybdenum	15.347	0.50	10.00	5.031	103	75	125				
Selenium	10.143	0.50	10.00	1.410	87.3	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019543-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108271
Client ID:	ZZZZZZ	Batch ID:	57229	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316466

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.617	0.10	10.00	2.132	94.9	75	125	11.87	2.18	20	
Manganese	88.461	0.50	100.0	0.1020	88.4	75	125	88.17	0.332	20	
Molybdenum	15.254	0.50	10.00	5.031	102	75	125	15.35	0.610	20	
Selenium	10.506	0.50	10.00	1.410	91.0	75	125	10.14	3.52	20	

Sample ID	N019543-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108271
Client ID:	ZZZZZZ	Batch ID:	57229	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.371	0.10	10.00	2.077	82.9	75	125				
Manganese	78.368	0.50	100.0	0	78.4	75	125				
Molybdenum	13.668	0.50	10.00	4.877	87.9	75	125				
Selenium	9.268	0.50	10.00	1.581	76.9	75	125				

Sample ID	N019543-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57229	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321091

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	231.499	5.0	100.0	134.6	96.9	75	125				

Sample ID	N019543-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57229	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321092

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	231.001	5.0	100.0	134.6	96.4	75	125	231.5	0.216	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019543-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	4/29/2016	RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57229	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321094

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.175	5.0	100.0	131.5	98.7	75	125				

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@crijigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By:		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Jacob Mathwig	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 4/27/16	Sampled By: Jason Maher		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - RMP	Signature: Date: 4/27/16				Sample Temp: 3.1°C / 3.2°C / 2.9°C
Project Number: RC000753.0801					Courier: Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019543 - 01 ✓	C-R22A-D-Q216		1120		X		X		X	X		X	X			X	X	E	9	P	BNS
2	- 02 ✓	C-R22A-S-Q216		1140		X		X		X	X		X	X			X	X	E	9	P	BNS
3	- 03 ✓	C-TAZ-D-Q216		0930		X		X		X	X		X	X			X	X	E	9	P	BNS
4	- 04 ✓	C-TAZ-S-Q216		0950		X		X		X	X		X	X			X	X	E	9	P	BNS
5	- 05 ✓	MW-915-Q216		0830		X		X		X	X		X	X			X	X	E	9	P	BNS
6	- 06 ✓	R-19-Q216		0820		X		X		X	X		X	X			X	X	E	9	P	BNS
7	- 07 ✓	R-28-Q216		0850		X		X		X	X		X	X			X	X	E	9	P	BNS
8	- 08 ✓	R63-Q216		1100		X		X		X	X		X	X			X	X	E	9	P	BNS
9	- 09 ✓	C-BNS-Q216		1210		X		X		X	X		X	X			X	X	E	9	P	BNS
10	- 10 ✓	MW-916-Q216		1220		X		X		X	X		X	X			X	X	E	9	P	BNS
11	- 11 ✓	C-I-3-D-Q216		1020		X		X		X	X		X	X			X	X	E	9	P	BNS
12	- 12 ✓	C-I-3-S-Q216		1040		X		X		X	X		X	X			X	X	E	9	P	BNS
13	- 13 ✓	C-MAR-D-Q216		1245		X		X		X	X		X	X			X	X	E	9	P	BNS
14	- 14 ✓	C-MAR-S-Q216		1255		X		X		X	X		X	X			X	X	E	9	P	BNS

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
	4/27/16	Jason Maher	4/27/16 1628
Jason Maher	4/27/16 1FKT	Jason Maher	4/27/16 1FKT

Turn Around Time (TAT)

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

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

Special Instruction:

Terms

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

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/27/2016	Workorder:	N019543
Rep sample Temp (Deg C):	2.1/3.2/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments:

Checklist Completed By: MBC For: 4/29/2016

Reviewed By: 05/05/16

ASSET Laboratories

WORK ORDER Summary

28-Apr-16

WorkOrder: N019543

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019543-001A	C-R22A-D-Q216	4/27/2016 11:20:00 AM	5/11/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-001B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-001C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-001D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-001E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-002A	C-R22A-S-Q216	4/27/2016 11:40:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-002B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-002C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-002D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

28-Apr-16

WorkOrder: N019543

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019543-002D	C-R22A-S-Q216	4/27/2016 11:40:00 AM	5/11/2016	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-002E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-003A	C-TAZ-D-Q216	4/27/2016 9:30:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-003B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-003C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-003D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-003E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-004A	C-TAZ-S-Q216	4/27/2016 9:50:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-004B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

28-Apr-16

WorkOrder: N019543

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019543-004B	C-TAZ-S-Q216	4/27/2016 9:50:00 AM	5/11/2016	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-004C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-004D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-004E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-005A	MW-915-Q216	4/27/2016 8:30:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-005B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-005C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-005D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW

WORK ORDER Summary

28-Apr-16

WorkOrder: N019543

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019543-005E	MW-915-Q216	4/27/2016 8:30:00 AM	5/11/2016	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-006A	R-19-Q216	4/27/2016 8:20:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-006B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-006C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-006D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-006E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-007A	R-28-Q216	4/27/2016 8:50:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-007B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-007C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

28-Apr-16

WorkOrder: N019543

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019543-007C	R-28-Q216	4/27/2016 8:50:00 AM	5/11/2016	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-007D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-007E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-008A	R63-Q216	4/27/2016 11:00:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-008B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-008C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-008D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-008E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-009A	C-BNS-Q216	4/27/2016 12:10:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-009B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

28-Apr-16

WorkOrder: N019543

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019543-009B	C-BNS-Q216	4/27/2016 12:10:00 PM	5/11/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-009C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-009D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-009E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-010A	MW-916-Q216	4/27/2016 12:20:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-010B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-010C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-010D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

28-Apr-16

WorkOrder: N019543

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019543-010D	MW-916-Q216	4/27/2016 12:20:00 PM	5/11/2016	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N019543-010E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-011A	C-I-3-D-Q216	4/27/2016 10:20:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-011B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-011C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-011D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-011E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-012A	C-I-3-S-Q216	4/27/2016 10:40:00 AM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-012B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Apr-16

WorkOrder: N019543

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019543-012C	C-I-3-S-Q216	4/27/2016 10:40:00 AM	5/11/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-012D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-012E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-013A	C-MAR-D-Q216	4/27/2016 12:45:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019543-013B			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-013C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-013D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-013E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-014A	C-MAR-S-Q216	4/27/2016 12:55:00 PM	5/11/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Apr-16

WorkOrder: N019543

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019543-014B	C-MAR-S-Q216	4/27/2016 12:55:00 PM	5/11/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019543-014C			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019543-014D			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019543-014E			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019543-015A	FOLDER		5/11/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/11/2016		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N019543**

NAME	TEST METHOD
Quennie Manimtim	EPA 120.1, SM 4500 H+B, SM 2540D
Claire Ignacio	EPA 6020, EPA 6010B, EPA 6010B_Dissolved
Ryan Balilu	SM 4500-NO3F
Janette Soria	EPA 218.6

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R107159/R107160 **Analyst:** QBM

ASSET #: N019543 **Date Analyzed:** 4/28/2016

Method: 120.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/12/2016

2nd Level Reviewer 5/13/2016 Date: _____

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 4/16/16 @ 9:20 am
Analyst: YRT

	Standard	Std ID	Reading	Comments
	9.31 µs/cm	CINV - 160111A	9.45 µs/cm @ 19.0°C	% Rec: (90-110%)
	1412	151012A	1443 @ 19.1°C	
	9992	160111B	10200 @ 19.0°C	
	99797	151012B	104100 @ 19.0°C	

	Sample ID	Matrix	Reading	Comments
1	NO19445-001A	Water	40.6 µs/cm @ 17.9°C	
2	NO19445-001ADUP	1	40 5 1 @ 18.8°C	
3				
4				
5				
6				
7				
8	1413 µs/cm	CINV - 160111C	1430 µs/cm @ 19.8°C	
9	10000	150909A	10440 @ 19.0°C	
10	99893	151130A	94900 @ 18.8°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 4/28/16 @ 2:05 PM
Analyst: L

	Standard	Std ID	Reading	Comments
	9.31 µs/cm	CINV-160111A	9.10 µs/cm @ 21.9°C	% Rec: (90-110%)
	1412	CINV-151012A	1437 @ 21.9°C	
	9992	CINV-160111B	10350 @ 21.9°C	
	99797	CINV-151012B	104400 @ 21.7°C	

	Sample ID	Matrix	Reading	Comments
1	NO19543-0010	H_2O	974 µs/cm @ 19.4°C	
2	20		977 @ 19.0°C	
3	30		972 @ 18.6°C	
4	40		970 @ 19.0°C	
5	50		968 @ 19.1°C	
6	60		972 @ 19.1°C	
7	70		983 @ 18.9°C	
8	80		986 @ 19.2°C	
9	90		982 @ 19.3°C	
10	100		987 @ 19.3°C	
Dup	100		986 @ 19.7°C	Accept: 10% water, 20% soil
	Std Chk: 1413 µs/cm	CINV-160111B&E2	1440 @ 21.3°C	% Rec: (90-110%)
	10,000	CINV-150909A	10360 @ 21.3°C	Logbook # 5
	99893	CINV-151130A	103900 @ 21.6°C	

Date: CONTINUATION

Analyst:

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

	Sample ID	Matrix	Reading	Comments
1	N019543-001D	H_2O	988 µs/cm @ 19.5°C	
2	1DD		982 @ 20.0°C	
3	1DD		1053 @ 20.3°C	
4	1MD		1063 @ 20.7°C	
5	N019544-001C		3590 @ 20.7°C	
6	2C		8060 @ 20.6°C	
7	2CDUP		8040 @ 20.7	
8				
9	1413 µs/cm	CINV-160111BE2	MMI @ 21.8°C	
10	10,006	CINV-150909A	10370 @ 21.7°C	
Dup	99893	CINV-151130A	104000 @ 21.9°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 4/29/16 1320

Analyst:

Standard	Std ID	Reading	Comments
9.91 µs/cm	CINV-160111A	9.17 µs/cm @ 22.4°C	% Rec: (90-110%)
1412	CINV-151012A	1412 @ 22.4°C	
9992	CINV-160111B	10240 @ 22.4°C	
99797	CINV-151012B	102400 @ 22.4°C	

	Sample ID	Matrix	Reading	Comments
1	N019558-001A	H_2O	158.6 µs/cm @ 21.5°C	
2	2A		509 @ 21.0°C	
3	3A		1314.8 @ 21.0°C	
4	N019559-001D		957 @ 19.9°C	
5	2D		950 @ 19.5°C	
6	3D		950 @ 19.6°C	
7	4D		951 @ 19.6°C	
8	5D		944 @ 19.5°C	
9	6D		950 @ 19.7°C	
10	7D		943 @ 19.7°C	
Dup	7D		943 @ 19.7°C	Accept: 10% water, 20% soil
	Std Chk: 1413 µs/cm	CINV-160111BE2	1449 @ 22.3°C	% Rec: (90-110%)
	10,000	159911A	10680 @ 22.4°C	Logbook # 5
	99300	151208A	99300 @ 22.3°C	

SM 4500 H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R107161/R107162 **Analyst:** QBM

ASSET #: N019543 **Date Analyzed:** 4/28/2016

Method: 150.1

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

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/12/2016

2nd Level Reviewer 5/13/2016 Date: _____

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 4/28/16

Analyst: _____

Standard	Std ID	pH	Comments
Buffer 4	CNV 1508283	4.00 @ 18.6	Slope - 98.3%
Buffer 7	CNV 160309A	7.02 @ 18.4	
Buffer 10	CNV 160111D	10.04 @ 19.7	

	Sample ID	Matrix	pH	Comments
1	NO 19503-001A	Soil	9.46 / 1.41	
2	NO 19539-001A	Soil	8.57 / 1.44	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)			Accept: +/-0.1 pH units from expected value

Date: 4/28/16 @ 2:00 PM

Analyst: L

Standard	Std ID	pH	Comments
Buffer 4	CNV-151828B	4.03 @ 21.5°C	slope: 99.8%
Buffer 7	CNV-160309A	7.03 @ 21.4°C	
Buffer 10	CNV-160111D	10.04 @ 21.0°C	

	Sample ID	Matrix	pH	Comments
1	NO19543-001D	H_2O	6.16 @ 18.5°C	
2	2D		8.24 @ 17.6°C	
3	3D		8.21 @ 17.1°C	
4	4D		8.24 @ 17.1°C	
5	5D		8.25 @ 17.2°C	
6	6D		8.27 @ 17.5°C	
7	7D		8.28 @ 17.6°C	
8	8D		8.10 @ 17.8°C	
9	9D		8.25 @ 17.9°C	
10	10D		8.24 @ 18.1°C	
Dup	10D		8.24 @ 18.4°C	Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CNV-160111C	7.03 @ 21.7°C	Accept: +/-0.1 pH units from expected value

pH Logbook

Date: CONTINUATION
Analyst:

Standard	Std ID	pH	Comments
Buffer 4			
Buffer 7			
Buffer 10		2	

	Sample ID	Matrix	pH	Comments
1	N019543-011D	H_2O	8.17 ~~8.17~~ °C @ 18.5°C	
2	12D		8.19 @ 18.4°C	
3	13D		7.66 @ 18.7°C	
4	14D		7.70 @ 19.6°C	
5	14DDUP		7.68 @ 19.7°C	
6	N019544-001C		7.57 @ 19.3°C	
7	2C		7.24 @ 19.4°C	
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10	CINV-160111C	7.03 @ 22.0°C	Accept: +/-0.1 pH units from expected value

(Circle one)

Date: 04/29/16 1315
Analyst: RGB

Standard	Std ID	pH	Comments
Buffer 4	CINV-150828B	4.03 @ 22.3°C	Slope: 98.8%
Buffer 7	CINV-160309A	7.03 @ 22.4°C	
Buffer 10	CINV-16011D	10.05 @ 22.1°C	

	Sample ID	Matrix	pH	Comments
1	N019558-001A	H_2O	6.47 @ 19.8°C	
2	2A		6.41 @ 20.2°C	
3	3A		6.42 @ 20.1°C	
4	N019559-001D		8.19 @ 18.6°C	
5	2D		8.22 @ 18.3°C	
6	3D		8.22 @ 18.4°C	
7	4D		8.24 @ 18.7°C	
8	5D		8.23 @ 18.3°C	
9	6D		8.25 @ 18.1°C	
10	7D		8.23 @ 18.2°C	
Dup	7 ~~8~~D		8.25 @ 18.1°C	Accept: 10% water, 20% soil
	Buffer 4, 7, 10	CINV-160111C	7.04 @ 21.5°C	Accept: +/-0.1 pH units from expected value

(Circle one)

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57240/57241 **Analyst:** QBM

ASSET #: N019543 **Date Analyzed:** 4/29/2016

Method: SM2540D

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/13/2016

2nd Level Reviewer 5/13/2016 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

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

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

Where:

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

For **N019543-014D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4371-1.4271)*1000000}{100}$$
$$= 100 \text{ mg/L}$$

Reporting results in 2 significant figures:

TSS = 100 mg/L

5/13/2016

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/29/2016 9:22:06 A**
Prep End Date: **4/29/2016 5:55:57 P**

Initials/ Date: 5/13/2016

Prep Batch **57240** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57240	Water		100	☐	0	0	100	1.000		
MB-57240	Water		100	☐	0	0	100	1.000		
N019518-001A	Water		100	☐	0	0	100	1.000		
N019543-001D	Groundwater		100	☐	0	0	100	1.000		
N019543-002D	Groundwater		100	☐	0	0	100	1.000		
N019543-003D	Groundwater		100	☐	0	0	100	1.000		
N019543-004D	Groundwater		100	☐	0	0	100	1.000		
N019543-005D	Groundwater		100	☐	0	0	100	1.000		
N019543-006D	Groundwater		100	☐	0	0	100	1.000		
N019543-007D	Groundwater		100	☐	0	0	100	1.000		
N019543-008D	Groundwater		100	☐	0	0	100	1.000		
N019543-009D	Groundwater		100	☐	0	0	100	1.000		
N019543-009D-DU	Groundwater		100	☐	0	0	100	1.000		

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

Number	Reagent Name
8392	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160404A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 4/29/2016 9:22:06 A
Prep End Date: Initials/ Date: _____

Prep Batch 57240 Prep Code: 160.2_W_PRE Technician: Quennie Manimtim

Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57240	Water		100	☐	0	0	100	1.000		
MB-57240	Water		100	☐	0	0	100	1.000		
N019518-001A	Water		100	☐	0	0	100	1.000		
N019543-001D	Groundwater		100	☐	0	0	100	1.000		
N019543-002D	Groundwater		100	☐	0	0	100	1.000		
N019543-003D	Groundwater		100	☐	0	0	100	1.000		
N019543-004D	Groundwater		100	☐	0	0	100	1.000		
N019543-005D	Groundwater		100	☐	0	0	100	1.000		
N019543-006D	Groundwater		100	☐	0	0	100	1.000		
N019543-007D	Groundwater		100	☐	0	0	100	1.000		
N019543-008D	Groundwater		100	☐	0	0	100	1.000		
N019543-009D	Groundwater		100	☐	0	0	100	1.000		
N019543-009D-DU	Groundwater		100	☐	0	0	100	1.000		

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

#8312

IWSF160404A

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/29/2016 10:45:28**
Prep End Date: **4/29/2016 7:09:53 P**

Initials/ Date: 5/13/2016

Prep Batch **57241** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57241	Water		100	☐	0	0	100	1.000		
MB-57241	Water		100	☐	0	0	100	1.000		
N019543-010D	Groundwater		100	☐	0	0	100	1.000		
N019543-011D	Groundwater		100	☐	0	0	100	1.000		
N019543-012D	Groundwater		100	☐	0	0	100	1.000		
N019543-013D	Groundwater		100	☐	0	0	100	1.000		
N019543-014D	Groundwater		100	☐	0	0	100	1.000		
N019558-001A	Surface Water		100	☐	0	0	100	1.000		
N019558-002A	Surface Water		100	☐	0	0	100	1.000		
N019558-003A	Surface Water		100	☐	0	0	100	1.000		
N019559-001D	Groundwater		100	☐	0	0	100	1.000		
N019559-002D	Groundwater		100	☐	0	0	100	1.000		
N019559-002D-DU	Groundwater		100	☐	0	0	100	1.000		

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

Number	Reagent Name
8392	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160404A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/29/2016 10:45:28**
Prep End Date: Initials/ Date: _____

Prep Batch **57241** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID		Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57241	LCS2	Water		100	☐	0	0	100	1.000		
MB-57241	MB2	Water		100	☐	0	0	100	1.000		
N019543-010D	11	Groundwater		100	☐	0	0	100	1.000		
N019543-011D	12	Groundwater		100	☐	0	0	100	1.000		
N019543-012D	13	Groundwater		100	☐	0	0	100	1.000		
N019543-013D	14	Groundwater		100	☐	0	0	100	1.000		
N019543-014D	15	Groundwater		100	☐	0	0	100	1.000		
N019558-001A	16	Surface Water		100	☐	0	0	100	1.000		
N019558-002A	17	Surface Water		100	☐	0	0	100	1.000		
N019558-003A	18	Surface Water		100	☐	0	0	100	1.000		
N019559-001D	19	Groundwater		100	☐	0	0	100	1.000		
N019559-002D	20	Groundwater		100	☐	0	0	100	1.000		
N019559-002D-DU	MS2	Groundwater		100	☐	0	0	100	1.000		

#8392

IWSTI60404A

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST (TSS)/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
4/24/16 MB1	MB-57240	100	1.4239 1.4241	1.4239 1.4240	
WS1	WS-57240	100	1.4218 1.4216	1.5166 1.5167	
1	NOV9518-0016		1.4290 1.4290	1.4316 1.4314	
2	NOV9513-0010		1.4223 1.4225	1.42225 1.4225	
3	2D		1.4315 1.4318	1.4319 1.4318	
4	3D		1.4293 1.4294	1.4294 1.4294	
5	4D		1.44341 1.4443	1.4441 1.4442	
6	5D		1.4176 1.4178	1.4177 1.41767 2	
7	6D		1.4260 1.4260	1.4261 1.4260	
8	7D		1.4314 1.4316 2 1.4316	1.4316 1.4315	

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
4 hatic 9 ~~8~~2	N019513-00SD	100	1.4318 1.4316	1.4317 1.4317	
10 ~~9~~2	9D		1.4246 1.4248	1.4248 1.4246	
Dup 1	9DDup		1.4271 1.4272	1.4273 1.4272	

TOTAL SUSPENDED SOLIDS, TSS

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

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
4/29/2016							
MB-57240	100	1.4241	1.4240	-1.0000	1.00	-1	MBLK
LCS-57240	100	1.4216	1.5167	951.0000	1.00	951	LCS
N019518-001A	100	1.429	1.4314	24.0000	1.00	24	SAMP
N019543-001D	100	1.4225	1.4225	0.0000	1.00	0	SAMP
N019543-002D	100	1.4318	1.4318	0.0000	1.00	0	SAMP
N019543-003D	100	1.4294	1.4294	0.0000	1.00	0	SAMP
N019543-004D	100	1.4443	1.4442	-1.0000	1.00	-1	SAMP
N019543-005D	100	1.4178	1.4177	-1.0000	1.00	-1	SAMP
N019543-006D	100	1.426	1.426	0.0000	1.00	0	SAMP
N019543-007D	100	1.4316	1.4315	-1.0000	1.00	-1	SAMP
N019543-008D	100	1.4316	1.4317	1.0000	1.00	1	SAMP
N019543-009D	100	1.4248	1.4246	-2.0000	1.00	-2	SAMP
N019543-009D-DUP	100	1.427	1.4272	2.0000	1.00	2	DUP
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	

SOLIDS RAW DATA

TEST : (TSS)/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
4/24/16 MB2	MB-57241	100	1.4173 1.4170	1.4174 1.4172	
WS2	WS-57241		1.4257 1.4258	1.5200 1.5198	
11	NO19313-0101D		1.4276 1.4278	1.4277 1.4279	
12	11D		1.4275 1.4274	1.4277 1.4277	
13	12D		1.4268 1.4268	1.4271 1.4268	
M	BD		1.4354 1.4354	1.4461 1.4459	
K	MD		1.4273 1.4271	1.4372 1.4371	
14	NO19358-0014		1.4211 1.4211	1.4222 1.4221	
17	2A		1.4221 1.4220	1.4264 1.4263	
18	3A		~~1.4432~~ 1.4402 1.4402	1.4430 1.4432	

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
4/2/11 19	N019559-001D	100	1.4340 1.4340	1.4340 1.4340	
20	2D		1.4391 1.4390	1.4391 1.4390	
DUP2	2DDUP		1.4389 1.4391	1.4391 1.4392	

ASSET Laboratories

Logbook#2

TOTAL SUSPENDED SOLIDS, TSS

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

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
4/29/2016							
MB-57241	100	1.4172	1.4172	0.0000	1.00	0	MBLK
LCS-57241	100	1.4258	1.5198	940.0000	1.00	940	LCS
N019543-010D	100	1.4278	1.4279	1.0000	1.00	1	SAMP
N019543-011D	100	1.4274	1.4277	3.0000	1.00	3	SAMP
N019543-012D	100	1.4268	1.4268	0.0000	1.00	0	SAMP
N019543-013D	100	1.4354	1.4459	105.0000	1.00	105	SAMP
N019543-014D	100	1.4271	1.4371	100.0000	1.00	100	SAMP
N019558-001A	100	1.4211	1.4221	10.0000	1.00	10	SAMP
N019558-002A	100	1.422	1.4262	42.0000	1.00	42	SAMP
N019558-003A	100	1.4402	1.4432	30.0000	1.00	30	SAMP
N019559-001D	100	1.434	1.434	0.0000	1.00	0	SAMP
N019559-002D	100	1.439	1.439	0.0000	1.00	0	SAMP
N019559-002D-DUP	100	1.4391	1.4392	1.0000	1.00	1	DUP
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	
				0.0000	#DIV/0!	#DIV/0!	

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108256
ASSET #: N019543

Instrument ID: IC-06
Analyst: JAS
Date Analyzed: 5/4/2016

Method:

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

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

Comments:

~~CCB6 and CCB8 > 0.02 ppb. However samples affected are ND and >10x CCB detection.~~

~~MB > 0.02ppb, however,samples are non-detect~~

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/11/2016

2nd Level Reviewer 5/16/2016 Date: —

168

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108290
ASSET #: N019543

Instrument ID: IC-06
Analyst: JAS
Date Analyzed: 5/5/2016

Method:

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

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

Comments:

For sample N019543-11A only.

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/11/2016

2nd Level Reviewer 5/16/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

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

FORMULA:

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

Cr^{+6}, μg/L = A * DF

where:

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

For **N019543-002A** concentration in μg/L is calculated as follows:

Cr^{+6}, μg/L = 0.0523 * 1

= 0.0523

Since reporting limit is 0.2 mg/L,

Cr^{+6}, μg/L = ND

ANALYSIS RUN LOG

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 mL
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 mL
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 mL
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 mL
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 mL
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 mL
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 mL
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 mL
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 mL
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 mL
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 mL
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 mL
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 mL
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160504A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/04/16 8:07 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	05/04/16 8:21 AM	Reported
12	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/04/16 8:33 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	05/04/16 8:43 AM	Reported
14	MB-R108255	MBLK	1	Hexavalent Chromium	05/04/16 8:53 AM	Reported
15	LCS-R108255	LCS	1	Hexavalent Chromium	05/04/16 9:03 AM	Reported
16	N019608-001I	SAMP	1	Hexavalent Chromium	05/04/16 9:13 AM	Reported
17	N019608-001IREP	DUP	1	Hexavalent Chromium	05/04/16 9:23 AM	Reported
18	N019597-001A	SAMP	1	Hexavalent Chromium	05/04/16 9:33 AM	Reported
19	N019597-001ADUP	DUP	1	Hexavalent Chromium	05/04/16 9:43 AM	Reported
20	N019597-001AMS	MS	1	Hexavalent Chromium	05/04/16 9:53 AM	Reported
21	N019597-001AMSD	MSD	1	Hexavalent Chromium	05/04/16 10:03 AM	Reported
22	N019597-002A	SAMP	1	Hexavalent Chromium	05/04/16 10:12 AM	Reported
23	N019593-001A	SAMP	1	Hexavalent Chromium	05/04/16 10:22 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	05/04/16 10:32 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	05/04/16 10:42 AM	Reported
26	N019593-002A	SAMP	1	Hexavalent Chromium	05/04/16 10:52 AM	Reported
27	N019593-003A	SAMP	1	Hexavalent Chromium	05/04/16 11:02 AM	Reported
28	N019593-004A	SAMP	1	Hexavalent Chromium	05/04/16 11:12 AM	Reported
29	N019542-009A	SAMP	5	Hexavalent Chromium	05/04/16 11:22 AM	Reported
30	N019542-009AMS	MS	5	Hexavalent Chromium	05/04/16 11:32 AM	Reported
31	N019542-016A	SAMP	1000	Hexavalent Chromium	05/04/16 11:42 AM	Reported
32	N019542-016AMS	MS	1000	Hexavalent Chromium	05/04/16 11:52 AM	Reported
33	N019542-017A	SAMP	1	Hexavalent Chromium	05/04/16 12:02 PM	Reported
34	N019542-017AMS	MS	1	Hexavalent Chromium	05/04/16 12:12 PM	Reported
35	N019542-018A	SAMP	1	Hexavalent Chromium	05/04/16 12:22 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	05/04/16 12:32 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	05/04/16 12:42 PM	Reported
38	N019542-018AMS	MS	1	Hexavalent Chromium	05/04/16 12:52 PM	Not Reported
39	N019542-019A	SAMP	1	Hexavalent Chromium	05/04/16 1:02 PM	Not Reported
40	N019542-019AMS	MS	1	Hexavalent Chromium	05/04/16 1:12 PM	Not Reported
41	N019542-020A	SAMP	1	Hexavalent Chromium	05/04/16 1:22 PM	Reported
42	N019542-020AMS	MS	1	Hexavalent Chromium	05/04/16 1:32 PM	Reported
43	N019614-001B	SAMP	100	Hexavalent Chromium	05/04/16 1:42 PM	Reported
44	N019614-001BMS	MS	100	Hexavalent Chromium	05/04/16 1:52 PM	Reported
45	N019614-002B	SAMP	1	Hexavalent Chromium	05/04/16 2:02 PM	Reported
46	N019614-002BMS	MS	1	Hexavalent Chromium	05/04/16 2:12 PM	Reported
47	N019617-001A	SAMP	1	Hexavalent Chromium	05/04/16 2:22 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	05/04/16 2:32 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	05/04/16 2:41 PM	Reported

INJECTION LOG: 160504A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019542-018AMS	MS	1	Hexavalent Chromium	05/04/16 2:56 PM	Reported
51	N019542-019A	SAMP	5	Hexavalent Chromium	05/04/16 3:20 PM	Reported
52	N019542-019AMS	MS	5	Hexavalent Chromium	05/04/16 3:32 PM	Reported
53	MB-R108256	MBLK	1	Hexavalent Chromium	05/04/16 3:42 PM	Reported
54	LCS-R108256	LCS	1	Hexavalent Chromium	05/04/16 3:52 PM	Reported
55	N019543-001A	SAMP	1	Hexavalent Chromium	05/04/16 4:02 PM	Reported
56	N019543-001ADUP	DUP	1	Hexavalent Chromium	05/04/16 4:12 PM	Reported
57	N019543-001AMS	MS	1	Hexavalent Chromium	05/04/16 4:22 PM	Reported
58	N019543-001AMSD	MSD	1	Hexavalent Chromium	05/04/16 4:31 PM	Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/04/16 4:41 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/04/16 4:51 PM	Reported
61	N019543-002A	SAMP	1	Hexavalent Chromium	05/04/16 5:01 PM	Reported
62	N019543-002AMS	MS	1	Hexavalent Chromium	05/04/16 5:11 PM	Reported
63	N019543-003A	SAMP	1	Hexavalent Chromium	05/04/16 5:21 PM	Reported
64	N019543-003AMS	MS	1	Hexavalent Chromium	05/04/16 5:31 PM	Reported
65	N019543-004A	SAMP	1	Hexavalent Chromium	05/04/16 5:41 PM	Reported
66	N019543-004AMS	MS	1	Hexavalent Chromium	05/04/16 5:51 PM	Not Reported
67	N019543-005A	SAMP	1	Hexavalent Chromium	05/04/16 6:01 PM	Reported
68	N019543-005AMS	MS	1	Hexavalent Chromium	05/04/16 6:11 PM	Reported
69	N019543-006A	SAMP	1	Hexavalent Chromium	05/04/16 6:21 PM	Reported
70	N019543-006AMS	MS	1	Hexavalent Chromium	05/04/16 6:31 PM	Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/04/16 6:41 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/04/16 6:51 PM	Reported
73	N019543-007A	SAMP	1	Hexavalent Chromium	05/04/16 7:01 PM	Reported
74	N019543-007AMS	MS	1	Hexavalent Chromium	05/04/16 7:11 PM	Reported
75	N019543-008A	SAMP	1	Hexavalent Chromium	05/04/16 7:21 PM	Reported
76	N019543-008AMS	MS	1	Hexavalent Chromium	05/04/16 7:31 PM	Reported
77	N019543-009A	SAMP	1	Hexavalent Chromium	05/04/16 7:41 PM	Reported
78	N019543-009AMS	MS	1	Hexavalent Chromium	05/04/16 7:51 PM	Reported
79	N019543-010A	SAMP	1	Hexavalent Chromium	05/04/16 8:01 PM	Reported
80	N019543-010AMS	MS	1	Hexavalent Chromium	05/04/16 8:11 PM	Reported
81	N019543-011A	SAMP	1	Hexavalent Chromium	05/04/16 8:21 PM	Not Reported
82	N019543-011AMS	MS	1	Hexavalent Chromium	05/04/16 8:31 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/04/16 8:41 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/04/16 8:51 PM	Reported
85	N019543-012A	SAMP	1	Hexavalent Chromium	05/04/16 9:00 PM	Reported
86	N019543-012AMS	MS	1	Hexavalent Chromium	05/04/16 9:10 PM	Reported
87	N019543-013A	SAMP	1	Hexavalent Chromium	05/04/16 9:20 PM	Reported
88	N019543-013AMS	MS	1	Hexavalent Chromium	05/04/16 9:30 PM	Reported
89	N019543-014A	SAMP	1	Hexavalent Chromium	05/04/16 9:40 PM	Reported
90	N019543-014AMS	MS	1	Hexavalent Chromium	05/04/16 9:50 PM	Reported
91	N019544-001A	SAMP	1	Hexavalent Chromium	05/04/16 10:00 PM	Reported
92	N019544-001AMS	MS	1	Hexavalent Chromium	05/04/16 10:10 PM	Reported
93	N019543-004AMS	MS	1	Hexavalent Chromium	05/04/16 10:20 PM	Reported
94	CCV-8	CCV1	1	Hexavalent Chromium	05/04/16 10:30 PM	Reported
95	CCB-8	CCB	1	Hexavalent Chromium	05/04/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160504A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/May/16 06:08:14**
No. of Injections:	**98**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/04/2016 08:07	Finished	CCV @ 5ppb, IWST-160401A
11	CCV-1,CCV,1	2	1000	Unknown		05/04/2016 08:21	Finished	CCV @ 5ppb, IWST-160401A
12	STD-0.2ppb,CCV2,1	3	1000	Unknown		05/04/2016 08:33	Finished	PQL @ 0.2 ppb
13	CCB-1,CCB,1	4	1000	Unknown		05/04/2016 08:43	Finished	CCB R160501A
14	MB-H2O,MBLK,1	5	1000	Unknown		05/04/2016 08:53	Finished	MB R160426A
15	LCS-H2O,LCS,1	6	1000	Unknown		05/04/2016 09:03	Finished	LCS(5ppb), IWST-160401B
16	N019608-001I,SAMP,1	7	1000	Unknown		05/04/2016 09:13	Finished	SAMP, 10mL
17	N019608-001IREP,DUP,1	8	1000	Unknown		05/04/2016 09:23	Finished	DUP, 10mL
18	N019597-001A,SAMP,1	9	1000	Unknown		05/04/2016 09:33	Finished	SAMP, 10mL
19	N019597-001ADUP,DUP,1	10	1000	Unknown		05/04/2016 09:43	Finished	DUP, 10mL
20	N019597-001AMS,MS,1	11	1000	Unknown		05/04/2016 09:53	Finished	MS (5ppb), IWST-160401B, 10 mL
21	N019597-001AMSD,MSD,1	12	1000	Unknown		05/04/2016 10:03	Finished	MSD (5ppb), IWST-160401B, 10 r
22	N019597-002A,SAMP,1	13	1000	Unknown		05/04/2016 10:12	Finished	SAMP, 10mL
23	N019593-001A,SAMP,1	14	1000	Unknown		05/04/2016 10:22	Finished	SAMP, 10mL
24	CCV-2,CCV1,1	15	1000	Unknown		05/04/2016 10:32	Finished	CCV @ 10ppb, IWST-160401A
25	CCB-2,CCB,1	16	1000	Unknown		05/04/2016 10:42	Finished	CCB
26	N019593-002A,SAMP,1	17	1000	Unknown		05/04/2016 10:52	Finished	SAMP, 10mL
27	N019593-003A,SAMP,1	18	1000	Unknown		05/04/2016 11:02	Finished	SAMP, 10mL
28	N019593-004A,SAMP,1	19	1000	Unknown		05/04/2016 11:12	Finished	SAMP, 10mL
29	N019542-009A,SAMP,5	20	1000	Unknown		05/04/2016 11:22	Finished	SAMP, 2.0>10mL
30	N019542-009AMS,MS,5	21	1000	Unknown		05/04/2016 11:32	Finished	MS (5ppb), IWST-160401B, 2.0>1
31	N019542-016A,SAMP,1000	22	1000	Unknown		05/04/2016 11:42	Finished	SAMP, 10uL> 10mL
32	N019542-016AMS,MS,1000	23	1000	Unknown		05/04/2016 11:52	Finished	MS (5ppb), IWST-160401B, 10uL>
33	N019542-017A,SAMP,1	24	1000	Unknown		05/04/2016 12:02	Finished	SAMP, 10mL
34	N019542-017AMS,MS,1	25	1000	Unknown		05/04/2016 12:12	Finished	MS (1ppb), IWST-160401B, 10 mL
35	N019542-018A,SAMP,1	26	1000	Unknown		05/04/2016 12:22	Finished	SAMP, 10mL
36	CCV-3,CCV,1	27	1000	Unknown		05/04/2016 12:32	Finished	CCV @ 5ppb, IWST-160401A
37	CCB-3,CCB,1	28	1000	Unknown		05/04/2016 12:42	Finished	CCB
38	N019542-018AMS,MS,1	29	1000	Unknown		05/04/2016 12:52	Finished	MS (1ppb), IWST-160401B, 10 mL
39	N019542-019A,SAMP,1	30	1000	Unknown		05/04/2016 13:02	Finished	SAMP, 10mL
40	N019542-019AMS,MS,1	31	1000	Unknown		05/04/2016 13:12	Finished	MS (1ppb), IWST-160401B, 10 mL
41	N019542-020A,SAMP,1	32	1000	Unknown		05/04/2016 13:22	Finished	SAMP, 10mL
42	N019542-020AMS,MS,1	33	1000	Unknown		05/04/2016 13:32	Finished	MS (1ppb), IWST-160401B, 10 mL
43	N019614-001B,SAMP,100	34	1000	Unknown		05/04/2016 13:42	Finished	SAMP, 0.10>10mL
44	N019614-001BMS,MS,100	35	1000	Unknown		05/04/2016 13:52	Finished	MS (5ppb), IWST-160401B, 0.10>
45	N019614-002B,SAMP,1	36	1000	Unknown		05/04/2016 14:02	Finished	SAMP, 10mL
46	N019614-002BMS,MS,1	37	1000	Unknown		05/04/2016 14:12	Finished	MS (1ppb), IWST-160401B, 10 mL
47	N019617-001A,SAMP,1	38	1000	Unknown		05/04/2016 14:22	Finished	SAMP, 10mL
48	CCV-4,CCV1,1	39	1000	Unknown		05/04/2016 14:32	Finished	CCV @ 10ppb, IWST-160401A
49	CCB-4,CCB,1	40	1000	Unknown		05/04/2016 14:41	Finished	CCB
50	N019542-018AMS,MS,1	1	1000	Unknown		05/04/2016 14:56	Finished	MS (1ppb), IWST-160401B, 10 mL
51	N019542-019A,SAMP,5	2	1000	Unknown		05/04/2016 15:20	Finished	SAMP, 2.0> 10mL
52	N019542-019AMS,MS,5	3	1000	Unknown		05/04/2016 15:32	Finished	MS (5ppb), IWST-160401B, 2.0>1
53	MB-H2O,MBLK,1	4	1000	Unknown		05/04/2016 15:42	Finished	MB R160426A
54	LCS-H2O,LCS,1	5	1000	Unknown		05/04/2016 15:52	Finished	LCS(5ppb), IWST-160401B
55	N019543-001A,SAMP,1	6	1000	Unknown		05/04/2016 16:02	Finished	SAMP, 10mL
56	N019543-001ADUP,DUP,1	7	1000	Unknown		05/04/2016 16:12	Finished	DUP, 10mL
57	N019543-001AMS,MS,1	8	1000	Unknown		05/04/2016 16:22	Finished	MS (1ppb), IWST-160401B, 10 mL
58	N019543-001AMSD,MSD,1	9	1000	Unknown		05/04/2016 16:31	Finished	MSD (1ppb), IWST-160401B, 10 r
59	CCV-5,CCV,1	11	1000	Unknown		05/04/2016 16:41	Finished	CCV @ 5ppb, IWST-160401A
60	CCB-5,CCB,1	12	1000	Unknown		05/04/2016 16:51	Finished	CCB
61	N019543-002A,SAMP,1	13	1000	Unknown		05/04/2016 17:01	Finished	SAMP, 10mL
62	N019543-002AMS,MS,1	14	1000	Unknown		05/04/2016 17:11	Finished	MS (1ppb), IWST-160401B, 10 mL
63	N019543-003A,SAMP,1	15	1000	Unknown		05/04/2016 17:21	Finished	SAMP, 10mL
64	N019543-003AMS,MS,1	16	1000	Unknown		05/04/2016 17:31	Finished	MS (1ppb), IWST-160401B, 10 mL
65	N019543-004A,SAMP,1	17	1000	Unknown		05/04/2016 17:41	Finished	SAMP, 10mL
66	N019543-004AMS,MS,1	18	1000	Unknown		05/04/2016 17:51	Finished	MS (1ppb), IWST-160401B, 10 mL
67	N019543-005A,SAMP,1	19	1000	Unknown		05/04/2016 18:01	Finished	SAMP, 10mL
68	N019543-005AMS,MS,1	20	1000	Unknown		05/04/2016 18:11	Finished	MS (1ppb), IWST-160401B, 10 mL
69	N019543-006A,SAMP,1	21	1000	Unknown		05/04/2016 18:21	Finished	SAMP, 10mL
70	N019543-006AMS,MS,1	22	1000	Unknown		05/04/2016 18:31	Finished	MS (1ppb), IWST-160401B, 10 mL

71	CCV-6,CCV1,1	23	1000	Unknown		05/04/2016 18:41	Finished	CCV @ 10ppb, IWST-160401A
72	CCB-6,CCB,1	24	1000	Unknown		05/04/2016 18:51	Finished	CCB
73	N019543-007A,SAMP,1	25	1000	Unknown		05/04/2016 19:01	Finished	SAMP, 10mL
74	N019543-007AMS,MS,1	26	1000	Unknown		05/04/2016 19:11	Finished	MS (1ppb), IWST-160401B, 10 mL
75	N019543-008A,SAMP,1	27	1000	Unknown		05/04/2016 19:21	Finished	SAMP, 10mL
76	N019543-008AMS,MS,1	28	1000	Unknown		05/04/2016 19:31	Finished	MS (1ppb), IWST-160401B, 10 mL
77	N019543-009A,SAMP,1	29	1000	Unknown		05/04/2016 19:41	Finished	SAMP, 10mL
78	N019543-009AMS,MS,1	30	1000	Unknown		05/04/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 mL
79	N019543-010A,SAMP,1	31	1000	Unknown		05/04/2016 20:01	Finished	SAMP, 10mL
80	N019543-010AMS,MS,1	32	1000	Unknown		05/04/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 mL
81	N019543-011A,SAMP,1	33	1000	Unknown		05/04/2016 20:21	Finished	SAMP, 10mL
82	N019543-011AMS,MS,1	34	1000	Unknown		05/04/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 mL
83	CCV-7,CCV,1	35	1000	Unknown		05/04/2016 20:41	Finished	CCV @ 5ppb, IWST-160401A
84	CCB-7,CCB,1	36	1000	Unknown		05/04/2016 20:51	Finished	CCB
85	N019543-012A,SAMP,1	37	1000	Unknown		05/04/2016 21:00	Finished	SAMP, 10mL
86	N019543-012AMS,MS,1	38	1000	Unknown		05/04/2016 21:10	Finished	MS (1ppb), IWST-160401B, 10 mL
87	N019543-013A,SAMP,1	39	1000	Unknown		05/04/2016 21:20	Finished	SAMP, 10mL
88	N019543-013AMS,MS,1	40	1000	Unknown		05/04/2016 21:30	Finished	MS (1ppb), IWST-160401B, 10 mL
89	N019543-014A,SAMP,1	41	1000	Unknown		05/04/2016 21:40	Finished	SAMP, 10mL
90	N019543-014AMS,MS,1	42	1000	Unknown		05/04/2016 21:50	Finished	MS (1ppb), IWST-160401B, 10 mL
91	N019544-001A,SAMP,1	43	1000	Unknown		05/04/2016 22:00	Finished	SAMP, 10mL
92	N019544-001AMS,MS,1	44	1000	Unknown		05/04/2016 22:10	Finished	MS (1ppb), IWST-160401B, 10 mL
93	N019543-004AMS,MS,1	45	1000	Unknown		05/04/2016 22:20	Finished	MS (1ppb), IWST-160401B, 10 mL
94	CCV-8-CCV1,1	46	1000	Unknown		05/04/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
95	CCB-8-CCB,1	47	1000	Unknown		05/04/2016 22:40	Finished	CCB R160331B
96	SHUTDOWN	48	1000	Unknown		05/04/2016 22:50	Finished	
97	Eluent: R160503A	49	1000	Unknown		n.a.	Finished	Eluent
98	PCR: R160504A	50	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160505A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/05/16 9:06 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/05/16 9:18 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/05/16 9:28 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/05/16 9:38 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/05/16 9:48 AM	Reported
15	MB-R108290	MBLK	1	Hexavalent Chromium	05/05/16 9:58 AM	Reported
16	LCS-R108290	LCS	1	Hexavalent Chromium	05/05/16 10:08 AM	Reported
17	N019543-011A	SAMP	1	Hexavalent Chromium	05/05/16 10:18 AM	Reported
18	N019543-011AMS	MS	1	Hexavalent Chromium	05/05/16 10:28 AM	Reported
19	N019559-001A	SAMP	1	Hexavalent Chromium	05/05/16 10:38 AM	Reported
20	N019559-001ADUP	DUP	1	Hexavalent Chromium	05/05/16 10:48 AM	Reported
21	N019559-001AMS	MS	1	Hexavalent Chromium	05/05/16 10:58 AM	Reported
22	N019559-001AMSD	MSD	1	Hexavalent Chromium	05/05/16 11:08 AM	Reported
23	N019559-002A	SAMP	1	Hexavalent Chromium	05/05/16 11:17 AM	Reported
24	N019559-002AMS	MS	1	Hexavalent Chromium	05/05/16 11:27 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/05/16 11:37 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/05/16 11:47 AM	Reported
27	N019559-003A	SAMP	1	Hexavalent Chromium	05/05/16 11:59 AM	Reported
28	N019559-003AMS	MS	1	Hexavalent Chromium	05/05/16 12:11 PM	Not Reported
29	N019559-004A	SAMP	1	Hexavalent Chromium	05/05/16 12:21 PM	Reported
30	N019559-004AMS	MS	1	Hexavalent Chromium	05/05/16 12:31 PM	Reported
31	N019559-005A	SAMP	1	Hexavalent Chromium	05/05/16 12:41 PM	Reported
32	N019559-005AMS	MS	1	Hexavalent Chromium	05/05/16 12:51 PM	Reported
33	N019559-006A	SAMP	1	Hexavalent Chromium	05/05/16 1:01 PM	Reported
34	N019559-006AMS	MS	1	Hexavalent Chromium	05/05/16 1:11 PM	Reported
35	N019559-007A	SAMP	1	Hexavalent Chromium	05/05/16 1:21 PM	Reported
36	N019559-007AMS	MS	1	Hexavalent Chromium	05/05/16 1:31 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/05/16 1:41 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/05/16 1:51 PM	Reported
39	N019559-008A	SAMP	1	Hexavalent Chromium	05/05/16 2:01 PM	Reported
40	N019559-008AMS	MS	1	Hexavalent Chromium	05/05/16 2:11 PM	Reported
41	N019559-009A	SAMP	1	Hexavalent Chromium	05/05/16 2:21 PM	Reported
42	N019559-009AMS	MS	1	Hexavalent Chromium	05/05/16 2:31 PM	Reported
43	N019559-010A	SAMP	1	Hexavalent Chromium	05/05/16 2:41 PM	Reported
44	N019559-010AMS	MS	1	Hexavalent Chromium	05/05/16 2:51 PM	Not Reported
45	N019559-011A	SAMP	1	Hexavalent Chromium	05/05/16 3:01 PM	Reported
46	N019559-011AMS	MS	1	Hexavalent Chromium	05/05/16 3:11 PM	Reported
47	N019559-012A	SAMP	1	Hexavalent Chromium	05/05/16 3:21 PM	Reported
48	N019559-012AMS	MS	1	Hexavalent Chromium	05/05/16 3:31 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/05/16 3:41 PM	Reported

INJECTION LOG: 160505A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-4	CCB	1	Hexavalent Chromium	05/05/16 3:51 PM	Reported
51	N019559-013A	SAMP	1	Hexavalent Chromium	05/05/16 4:01 PM	Reported
52	N019559-013AMS	MS	1	Hexavalent Chromium	05/05/16 4:10 PM	Reported
53	N019559-014A	SAMP	1	Hexavalent Chromium	05/05/16 4:20 PM	Reported
54	N019559-014AMS	MS	1	Hexavalent Chromium	05/05/16 4:30 PM	Reported
55	N019559-003AMS	MS	1	Hexavalent Chromium	05/05/16 4:47 PM	Reported
56	N019559-010AMS	MS	1	Hexavalent Chromium	05/05/16 5:00 PM	Reported
57	CCV-5	CCV	1	Hexavalent Chromium	05/05/16 5:12 PM	Reported
58	CCB-5	CCB	1	Hexavalent Chromium	05/05/16 5:22 PM	Reported
59	MB-R108291	MBLK	1	Hexavalent Chromium	05/05/16 5:32 PM	Reported
60	LCS-R108291	LCS	1	Hexavalent Chromium	05/05/16 5:44 PM	Reported
61	N019560-001A	SAMP	1	Hexavalent Chromium	05/05/16 5:54 PM	Reported
62	N019560-001ADUP	DUP	1	Hexavalent Chromium	05/05/16 6:04 PM	Reported
63	N019560-001AMS	MS	1	Hexavalent Chromium	05/05/16 6:14 PM	Reported
64	N019560-001AMSD	MSD	1	Hexavalent Chromium	05/05/16 6:24 PM	Reported
65	N019560-002A	SAMP	1	Hexavalent Chromium	05/05/16 6:34 PM	Reported
66	N019560-002AMS	MS	1	Hexavalent Chromium	05/05/16 6:44 PM	Reported
67	N019560-003A	SAMP	1	Hexavalent Chromium	05/05/16 6:54 PM	Not Reported
68	N019560-003AMS	MS	1	Hexavalent Chromium	05/05/16 7:04 PM	Not Reported
69	CCV-6	CCV1	1	Hexavalent Chromium	05/05/16 7:14 PM	Reported
70	CCB-6	CCB	1	Hexavalent Chromium	05/05/16 7:24 PM	Reported
71	N019560-004A	SAMP	1	Hexavalent Chromium	05/05/16 7:34 PM	Not Reported
72	N019560-004AMS	MS	1	Hexavalent Chromium	05/05/16 7:44 PM	Not Reported
73	N019560-005A	SAMP	1	Hexavalent Chromium	05/05/16 7:54 PM	Not Reported
74	N019560-005AMS	MS	1	Hexavalent Chromium	05/05/16 8:04 PM	Not Reported
75	N019560-006A	SAMP	100	Hexavalent Chromium	05/05/16 8:14 PM	Reported
76	N019560-006AMS	MS	100	Hexavalent Chromium	05/05/16 8:24 PM	Reported
77	N019560-007A	SAMP	500	Hexavalent Chromium	05/05/16 8:34 PM	Reported
78	N019560-007AMS	MS	500	Hexavalent Chromium	05/05/16 8:44 PM	Reported
79	N019560-008A	SAMP	100	Hexavalent Chromium	05/05/16 8:54 PM	Reported
80	N019560-008AMS	MS	100	Hexavalent Chromium	05/05/16 9:04 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	05/05/16 9:13 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	05/05/16 9:23 PM	Reported
83	N019560-009A	SAMP	1	Hexavalent Chromium	05/05/16 9:33 PM	Not Reported
84	N019560-009AMS	MS	1	Hexavalent Chromium	05/05/16 9:43 PM	Not Reported
85	N019560-010A	SAMP	1	Hexavalent Chromium	05/05/16 9:53 PM	Not Reported
86	N019560-010AMS	MS	1	Hexavalent Chromium	05/05/16 10:03 PM	Not Reported
87	N019560-011A	SAMP	20	Hexavalent Chromium	05/05/16 10:13 PM	Reported
88	N019560-011AMS	MS	20	Hexavalent Chromium	05/05/16 10:23 PM	Reported
89	N019560-012A	SAMP	200	Hexavalent Chromium	05/05/16 10:33 PM	Reported
90	N019560-012AMS	MS	200	Hexavalent Chromium	05/05/16 10:43 PM	Reported
91	N019560-013	SAMP	1	Hexavalent Chromium	05/05/16 10:53 PM	Reported
92	N019560-013AMS	MS	1	Hexavalent Chromium	05/05/16 11:03 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	05/05/16 11:13 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	05/05/16 11:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160505A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**06/May/16 10:59:20**
No. of Injections:	**97**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/05/2016 09:06	Finished	CCV @ 5ppb, IWST-160401A
11	BLANK	2	1000	Unknown		05/05/2016 09:18	Finished	CCV @ 5ppb, IWST-160401A
12	CCV-1,CCV,1	3	1000	Unknown		05/05/2016 09:28	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/05/2016 09:38	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/05/2016 09:48	Finished	CCB R160501A
15	MB-H2O,MBLK,1	6	1000	Unknown		05/05/2016 09:58	Finished	MB R160426A
16	LCS-H2O,LCS,1	7	1000	Unknown		05/05/2016 10:08	Finished	LCS(5ppb), IWST-160401B
17	N019543-011A,SAMP,1	8	1000	Unknown		05/05/2016 10:18	Finished	SAMP, 10mL
18	N019543-011AMS,MS,1	9	1000	Unknown		05/05/2016 10:28	Finished	MS (1ppb), IWST-160401B, 10 mL
19	N019559-001A,SAMP,1	10	1000	Unknown		05/05/2016 10:38	Finished	SAMP, 10mL
20	N019559-001ADUP,DUP,1	11	1000	Unknown		05/05/2016 10:48	Finished	DUP, 10mL
21	N019559-001AMS,MS,1	12	1000	Unknown		05/05/2016 10:58	Finished	MS (1ppb), IWST-160401B, 10 mL
22	N019559-001AMSD,MSD,1	13	1000	Unknown		05/05/2016 11:08	Finished	MSD (1ppb), IWST-160401B, 10 r
23	N019559-002A,SAMP,1	14	1000	Unknown		05/05/2016 11:17	Finished	SAMP, 10mL
24	N019559-002AMS,MS,1	15	1000	Unknown		05/05/2016 11:27	Finished	MS (1ppb), IWST-160401B, 10 mL
25	CCV-2,CCV1,1	16	1000	Unknown		05/05/2016 11:37	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/05/2016 11:47	Finished	CCB R160426G
27	N019559-003A,SAMP,1	18	1000	Unknown		05/05/2016 11:59	Finished	SAMP, 10mL
28	N019559-003AMS,MS,1	19	1000	Unknown		05/05/2016 12:11	Finished	MS (1ppb), IWST-160401B, 10 mL
29	N019559-004A,SAMP,1	20	1000	Unknown		05/05/2016 12:21	Finished	SAMP, 10mL
30	N019559-004AMS,MS,1	21	1000	Unknown		05/05/2016 12:31	Finished	MS (1ppb), IWST-160401B, 10 mL
31	N019559-005A,SAMP,1	22	1000	Unknown		05/05/2016 12:41	Finished	SAMP, 10mL
32	N019559-005AMS,MS,1	23	1000	Unknown		05/05/2016 12:51	Finished	MS (1ppb), IWST-160401B, 10 mL
33	N019559-006A,SAMP,1	24	1000	Unknown		05/05/2016 13:01	Finished	SAMP, 10mL
34	N019559-006AMS,MS,1	25	1000	Unknown		05/05/2016 13:11	Finished	MS (1ppb), IWST-160401B, 10 mL
35	N019559-007A,SAMP,1	26	1000	Unknown		05/05/2016 13:21	Finished	SAMP, 10mL
36	N019559-007AMS,MS,1	27	1000	Unknown		05/05/2016 13:31	Finished	MS (1ppb), IWST-160401B, 10 mL
37	CCV-3,CCV,1	28	1000	Unknown		05/05/2016 13:41	Finished	CCV @ 5ppb, IWST-160401A
38	CCB-3,CCB,1	29	1000	Unknown		05/05/2016 13:51	Finished	CCB
39	N019559-008A,SAMP,1	30	1000	Unknown		05/05/2016 14:01	Finished	SAMP, 10mL
40	N019559-008AMS,MS,1	31	1000	Unknown		05/05/2016 14:11	Finished	MS (1ppb), IWST-160401B, 10 mL
41	N019559-009A,SAMP,1	32	1000	Unknown		05/05/2016 14:21	Finished	SAMP, 10mL
42	N019559-009AMS,MS,1	33	1000	Unknown		05/05/2016 14:31	Finished	MS (1ppb), IWST-160401B, 10 mL
43	N019559-010A,SAMP,1	34	1000	Unknown		05/05/2016 14:41	Finished	SAMP, 10mL
44	N019559-010AMS,MS,1	35	1000	Unknown		05/05/2016 14:51	Finished	MS (1ppb), IWST-160401B, 10 mL
45	N019559-011A,SAMP,1	36	1000	Unknown		05/05/2016 15:01	Finished	SAMP, 10mL
46	N019559-011AMS,MS,1	37	1000	Unknown		05/05/2016 15:11	Finished	MS (1ppb), IWST-160401B, 10 mL
47	N019559-012A,SAMP,1	38	1000	Unknown		05/05/2016 15:21	Finished	SAMP, 10mL
48	N019559-012AMS,MS,1	39	1000	Unknown		05/05/2016 15:31	Finished	MS (1ppb), IWST-160401B, 10 mL
49	CCV-4,CCV1,1	40	1000	Unknown		05/05/2016 15:41	Finished	CCV @ 10ppb, IWST-160401A
50	CCB-4,CCB,1	41	1000	Unknown		05/05/2016 15:51	Finished	CCB R160331B
51	N019559-013A,SAMP,1	42	1000	Unknown		05/05/2016 16:01	Finished	SAMP, 10mL
52	N019559-013AMS,MS,1	43	1000	Unknown		05/05/2016 16:10	Finished	MS (1ppb), IWST-160401B, 10 mL
53	N019559-014A,SAMP,1	44	1000	Unknown		05/05/2016 16:20	Finished	SAMP, 10mL
54	N019559-014AMS,MS,1	45	1000	Unknown		05/05/2016 16:30	Finished	MS (1ppb), IWST-160401B, 10 mL
55	N019559-003AMS,MS,1	46	1000	Unknown		05/05/2016 16:47	Finished	MS (1ppb), IWST-160401B, 10 mL
56	N019559-010AMS,MS,1	47	1000	Unknown		05/05/2016 17:00	Finished	MS (1ppb), IWST-160401B, 10 mL
57	CCV-5,CCV,1	48	1000	Unknown		05/05/2016 17:12	Finished	CCV @ 5ppb, IWST-160401A
58	CCB-5,CCB,1	49	1000	Unknown		05/05/2016 17:22	Finished	CCB
59	MB-H2O,MBLK,1	1	1000	Unknown		05/05/2016 17:32	Finished	MB R160426G
60	LCS-H2O,LCS,1	2	1000	Unknown		05/05/2016 17:44	Finished	LCS(5ppb), IWST-160401B
61	N019560-001A,SAMP,1	3	1000	Unknown		05/05/2016 17:54	Finished	SAMP, 10mL
62	N019560-001ADUP,DUP,1	4	1000	Unknown		05/05/2016 18:04	Finished	DUP, 10mL
63	N019560-001AMS,MS,1	5	1000	Unknown		05/05/2016 18:14	Finished	MS (1ppb), IWST-160401B, 10 mL
64	N019560-001AMSD,MSD,1	6	1000	Unknown		05/05/2016 18:24	Finished	MSD (1ppb), IWST-160401B, 10 r
65	N019560-002A,SAMP,1	7	1000	Unknown		05/05/2016 18:34	Finished	SAMP, 10mL
66	N019560-002AMS,MS,1	8	1000	Unknown		05/05/2016 18:44	Finished	MS (1ppb), IWST-160401B, 10 mL
67	N019560-003A,SAMP,1	9	1000	Unknown		05/05/2016 18:54	Finished	SAMP, 10mL
68	N019560-003AMS,MS,1	10	1000	Unknown		05/05/2016 19:04	Finished	MS (1ppb), IWST-160401B, 10 mL
69	CCV-6,CCV1,1	11	1000	Unknown		05/05/2016 19:14	Finished	CCV @ 10ppb, IWST-160401A
70	CCB-6,CCB,1	12	1000	Unknown		05/05/2016 19:24	Finished	CCB

71	N019560-004A,SAMP,1	13	1000	Unknown		05/05/2016 19:34	Finished	SAMP, 10mL
72	N019560-004AMS,MS,1	14	1000	Unknown		05/05/2016 19:44	Finished	MS (1ppb), IWST-160401B, 10 mL
73	N019560-005A,SAMP,1	15	1000	Unknown		05/05/2016 19:54	Finished	SAMP, 10mL
74	N019560-005AMS,MS,1	16	1000	Unknown		05/05/2016 20:04	Finished	MS (1ppb), IWST-160401B, 10 mL
75	N019560-006A,SAMP,100	17	1000	Unknown		05/05/2016 20:14	Finished	SAMP, 0.10>10mL
76	N019560-006AMS,MS,100	18	1000	Unknown		05/05/2016 20:24	Finished	MS (5ppb), IWST-160401B, 0.10>
77	N019560-007A,SAMP,500	19	1000	Unknown		05/05/2016 20:34	Finished	SAMP, 20uL>10mL
78	N019560-007AMS,MS,500	20	1000	Unknown		05/05/2016 20:44	Finished	MS (5ppb), IWST-160401B, 20uL>
79	N019560-008A,SAMP,100	21	1000	Unknown		05/05/2016 20:54	Finished	SAMP, 0.10>10mL
80	N019560-008AMS,MS,100	22	1000	Unknown		05/05/2016 21:04	Finished	MS (5ppb), IWST-160401B, 0.10>
81	CCV-7,CCV,1	23	1000	Unknown		05/05/2016 21:13	Finished	CCV @ 5ppb, IWST-160401A
82	CCB-7,CCB,1	24	1000	Unknown		05/05/2016 21:23	Finished	CCB
83	N019560-009A,SAMP,1	25	1000	Unknown		05/05/2016 21:33	Finished	SAMP, 10mL
84	N019560-009AMS,MS,1	26	1000	Unknown		05/05/2016 21:43	Finished	MS (5ppb), IWST-160401B, 10 mL
85	N019560-010A,SAMP,1	27	1000	Unknown		05/05/2016 21:53	Finished	SAMP, 10mL
86	N019560-010AMS,MS,1	28	1000	Unknown		05/05/2016 22:03	Finished	MS (5ppb), IWST-160401B, 10 mL
87	N019560-011A,SAMP,20	29	1000	Unknown		05/05/2016 22:13	Finished	SAMP, 0.5> 10mL
88	N019560-011AMS,MS,20	30	1000	Unknown		05/05/2016 22:23	Finished	MS (5ppb), IWST-160401B, 0.5>1
89	N019560-012A,SAMP,200	31	1000	Unknown		05/05/2016 22:33	Finished	SAMP, 50uL>10mL
90	N019560-012AMS,MS,200	32	1000	Unknown		05/05/2016 22:43	Finished	MS (5ppb), IWST-160401B, 50uL>
91	N019560-013,SAMP,1	33	1000	Unknown		05/05/2016 22:53	Finished	SAMP, 10mL
92	N019560-013AMS,MS,1	34	1000	Unknown		05/05/2016 23:03	Finished	MS (1ppb), IWST-160401B, 10 mL
93	CCV-8-CCV1,1	35	1000	Unknown		05/05/2016 23:13	Finished	CCV @ 10ppb, IWST-160401A
94	CCB-8-CCB,1	36	1000	Unknown		05/05/2016 23:23	Finished	CCB
95	SHUTDOWN	37	1000	Unknown		05/05/2016 23:33	Finished	
96	Eluent: R160503A	38	1000	Unknown		n.a.	Finished	Eluent
97	PCR: R160504A	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/28/16
Time Prepared: 4:15 PM
Prepared By: JAS

slope: 99.2
pH 7: 7.01
4: 4.02
10: 10.04
LCS: 7.05

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: GNV-160125H
NH4OH + NH4SO4 eluent: ~~R160429A~~ R160502A, R160503A
NH4OH + NH4SO4 buffer: R160426A, R160331B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019542-15A	9.33	-	-	-	-	green R160426A
2)	-16A	9.30	-	-	-	-	light green R160331B
3)	-17A	9.49	-	-	-	-	R160331B
4)	-18A	9.43	-	-	-	-	R160426A
5)	-19A	9.32	-	-	-	-	
6)	-20A	9.37	-	-	-	-	
7)	N019543-1A (1 of 3)	9.39	-	-	-	-	R160426A
8)	-1A (2 of 3)	9.40	-	-	-	-	
9)	-1A (3 of 3)	9.38	-	-	-	-	
10)	-2A (1 of 3)	9.31	-	-	-	-	
11)	-2A (2 of 3)	9.30	-	-	-	-	
12)	-2A (3 of 3)	9.30	-	-	-	-	
13)	-3A (1 of 3)	9.27	9.42	~250 mL	~250 mL	+1 drop 6N NaOH	
14)	-3A (2 of 3)	9.26	9.41			+1 drop 6N NaOH	
15)	-3A (3 of 3)	9.28	9.42			+1 drop 6N NaOH	
	-4A (1 of 3)	9.31	-	-	-	-	

Sample Preparation

Date Prepared: 4/28/16
Time Prepared: 4:15 PM
Prepared By: JAS

same calibration
LCS: 7.04

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: GNV-160125H
NH4OH + NH4SO4 eluent: R160502A
NH4OH + NH4SO4 buffer: R160426A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019543-4A (2 of 3)	9.31	-	-	-	-	R160426A
2)	-4A (3 of 3)	9.30	-	-	-	-	
3)	-5A (1 of 3)	9.30	-	-	-	-	
4)	-5A (2 of 3)	9.27	9.42	~250 mL	~250 mL	+1 drop 6N NaOH	
5)	-5A (3 of 3)	9.32	-	-	-	-	
6)	-6A (1 of 3)	9.33	-	-	-	-	
7)	-6A (2 of 3)	9.32	-	-	-	-	
8)	-6A (3 of 3)	9.36	-	-	-	-	
9)	-7A (1 of 3)	9.38	-	-	-	-	
10)	-7A (2 of 3)	9.34	-	-	-	-	
11)	-7A (3 of 3)	9.35	-	-	-	-	
12)	-8A (1 of 3)	9.31	-	-	-	-	
13)	-8A (2 of 3)	9.37	-	-	-	-	
14)	-8A (3 of 3)	9.34	-	-	-	-	
15)	-9A (1 of 3)	9.25	9.48	~250 mL	~250 mL	+2 drops 6N NaOH	
	-9A (2 of 3)	9.33	-	-	-	-	

Logbook No. 10

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/28/16
Time Prepared: 4:15
Prepared By: JAS

slope: 99.2
pH 7: 7.01
4: 4.02
10: 10.04
LCS: 7.04

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINN - 160125H
NH4OH + NH4SO4 eluent: R160503A
NH4OH + NH4SO4 buffer: R160426A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO19543-9A(3of3)	9.30	-	-	-	-	R160426A
2)	-10A (1of3)	9.29	9.37	~250 mL	~250 mL	+1 drop 6N NaOH	
3)	-10A (2of3)	9.40	-	-	-	-	
4)	-10A (3of3)	9.31	-	-	-	-	
5)	-11A (1of3)	9.34	-	-	-	-	
6)	-11A (2of3)	9.34	-	-	-	-	
7)	-11A (3of3)	9.35	-	-	-	-	
8)	-12A (1of3)	9.35	-	-	-	-	
9)	-12A (2of3)	9.38	-	-	-	-	
10)	-12A (3of3)	9.39	-	-	-	-	
11)	-13A (1of3)	9.35	-	-	-	-	
12)	-13A (2of3)	9.33	-	-	-	-	
13)	-13A (3of3)	9.33	-	-	-	-	
14)	-14A (1of3)	9.33	-	-	-	-	
15)	-14A (2of3)	9.31	-	-	-	-	
	-14A (3of3)	9.31	-	-	-	-	

Sample Preparation

Date Prepared: 4/28/16
Time Prepared: 4:15
Prepared By: JAS

same

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINN-160125H
NH4OH + NH4SO4 eluent: R160503A
NH4OH + NH4SO4 buffer: R160426A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO19544-1A	9.26	9.33	~250mL	~250mL	+1 drop 6N NaOH	R160331B
2)	-2A	9.21	9.34	~250mL	~250 mL	+2 drops 6N NaOH	
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 10

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-06
Date Calibrated: 5/2/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0499	0.2341	1.1728	2.3399	3.5237	4.6638	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ICV**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2315654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.008	0.20	5.000	0	100	90	110				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2315655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.213	0.20	0.2000	0	107	80	120				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.187	0.20	0.2000	0	93.4	80	120				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.934	0.20	10.00	0	99.3	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCV**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	95	105				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.110	0.20	10.00	0	101	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCV**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.071	0.20	5.000	0	101	95	105				

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.980	0.20	10.00	0	99.8	95	105				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ICV**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2317484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.008	0.20	5.000	0	100	90	110				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2317485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.213	0.20	0.2000	0	107	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCV**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.059	0.20	5.000	0	101	95	105				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.209	0.20	0.2000	0	104	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.753	0.20	10.00	0	97.5	95	105				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCV**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.970	0.20	5.000	0	99.4	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.087	0.20	10.00	0	101	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCV**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.937	0.20	5.000	0	98.7	95	105				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ICB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2315656**

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

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315659**

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

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315667**

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

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.011	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315691**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.005	0.20									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ICB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2317486**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317489**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317501**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317513**

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

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317525**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317533**

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

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/4/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.117	
CCV-2	5.100	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.100	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
MB-R108255	N.A.	N.A.
LCS-R108255	5.108	PASS
N019608-001I	5.100	PASS
N019608-001IREP	5.083	PASS
N019597-001A	5.100	PASS
N019597-001ADUP	5.100	PASS
N019597-001AMS	5.100	PASS
N019597-001AMSD	5.100	PASS
N019597-002A	5.108	PASS
N019593-001A	5.100	PASS
N019593-002A	5.117	PASS
N019593-003A	5.108	PASS
N019593-004A	5.108	PASS
N019542-009A	5.058	PASS
N019542-009AMS	5.058	PASS
N019542-016A	5.108	PASS
N019542-016AMS	5.100	PASS
N019542-017A	5.108	PASS
N019542-017AMS	5.108	PASS
N019542-018A	5.108	PASS
N019542-018AMS	5.108	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/4/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.117	
CCV-2	5.100	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.100	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019542-019A	5.008	PASS
N019542-019AMS	5.008	PASS
N019542-020A	5.108	PASS
N019542-020AMS	5.100	PASS
N019614-001B	5.108	PASS
N019614-001BMS	5.108	PASS
N019614-002B	4.975	PASS
N019614-002BMS	4.975	PASS
N019617-001A	5.092	PASS
N019542-018AMS	5.117	PASS
N019542-019A	5.092	PASS
N019542-019AMS	5.092	PASS
MB-R108256	5.117	PASS
LCS-R108256	5.108	PASS
N019543-001A	5.108	PASS
N019543-001ADUP	5.100	PASS
N019543-001AMS	5.100	PASS
N019543-001AMSD	5.108	PASS
N019543-002A	5.108	PASS
N019543-002AMS	5.108	PASS
N019543-003A	5.108	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/4/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.117	
CCV-2	5.100	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.100	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019543-003AMS	5.100	PASS
N019543-004A	5.125	PASS
N019543-004AMS	5.108	PASS
N019543-005A	5.100	PASS
N019543-005AMS	5.108	PASS
N019543-006A	5.100	PASS
N019543-006AMS	5.100	PASS
N019543-007A	5.108	PASS
N019543-007AMS	5.100	PASS
N019543-008A	5.108	PASS
N019543-008AMS	5.100	PASS
N019543-009A	5.042	PASS
N019543-009AMS	5.100	PASS
N019543-010A	5.092	PASS
N019543-010AMS	5.100	PASS
N019543-011A	5.100	PASS
N019543-011AMS	5.100	PASS
N019543-012A	5.108	PASS
N019543-012AMS	5.100	PASS
N019543-013A	5.108	PASS
N019543-013AMS	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/4/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.117	
CCV-2	5.100	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.100	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019543-014A	5.117	PASS
N019543-014AMS	5.100	PASS
N019544-001A	5.058	PASS
N019544-001AMS	5.058	PASS
N019543-004AMS	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/5/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.100	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
MB-R108290	N.A.	N.A.
LCS-R108290	5.100	PASS
N019543-011A	5.092	PASS
N019543-011AMS	5.100	PASS
N019559-001A	5.125	PASS
N019559-001ADUP	5.108	PASS
N019559-001AMS	5.100	PASS
N019559-001AMSD	5.100	PASS
N019559-002A	5.092	PASS
N019559-002AMS	5.100	PASS
N019559-003A	5.108	PASS
N019559-003AMS	5.100	PASS
N019559-004A	5.108	PASS
N019559-004AMS	5.100	PASS
N019559-005A	5.100	PASS
N019559-005AMS	5.100	PASS
N019559-006A	5.108	PASS
N019559-006AMS	5.100	PASS
N019559-007A	5.100	PASS
N019559-007AMS	5.092	PASS
N019559-008A	5.108	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/5/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.100	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019559-008AMS	5.100	PASS
N019559-009A	5.100	PASS
N019559-009AMS	5.100	PASS
N019559-010A	5.092	PASS
N019559-010AMS	5.092	PASS
N019559-011A	5.100	PASS
N019559-011AMS	5.100	PASS
N019559-012A	5.092	PASS
N019559-012AMS	5.100	PASS
N019559-013A	5.108	PASS
N019559-013AMS	5.092	PASS
N019559-014A	5.117	PASS
N019559-014AMS	5.108	PASS
N019559-003AMS	5.100	PASS
N019559-010AMS	5.108	PASS
MB-R108291	N.A.	N.A.
LCS-R108291	5.100	PASS
N019560-001A	5.083	PASS
N019560-001ADUP	5.192	PASS
N019560-001AMS	5.108	PASS
N019560-001AMSD	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/5/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.100	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019560-002A	4.942	PASS
N019560-002AMS	4.942	PASS
N019560-003A	4.983	PASS
N019560-003AMS	4.983	PASS
N019560-004A	N.A.	N.A.
N019560-004AMS	N.A.	N.A.
N019560-005A	4.983	PASS
N019560-005AMS	4.983	PASS
N019560-006A	5.100	PASS
N019560-006AMS	5.108	PASS
N019560-007A	5.108	PASS
N019560-007AMS	5.108	PASS
N019560-008A	5.108	PASS
N019560-008AMS	5.108	PASS
N019560-009A	N.A.	N.A.
N019560-009AMS	N.A.	N.A.
N019560-010A	4.950	PASS
N019560-010AMS	4.958	PASS
N019560-011A	5.108	PASS
N019560-011AMS	5.108	PASS
N019560-012A	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/5/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.100	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019560-012AMS	5.100	PASS
N019560-013	5.117	PASS
N019560-013AMS	5.108	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

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

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

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

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

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

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 ml
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 ml
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 ml
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 ml
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 ml
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 ml
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 ml
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 ml
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 ml
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 ml
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 ml
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 ml
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 ml
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

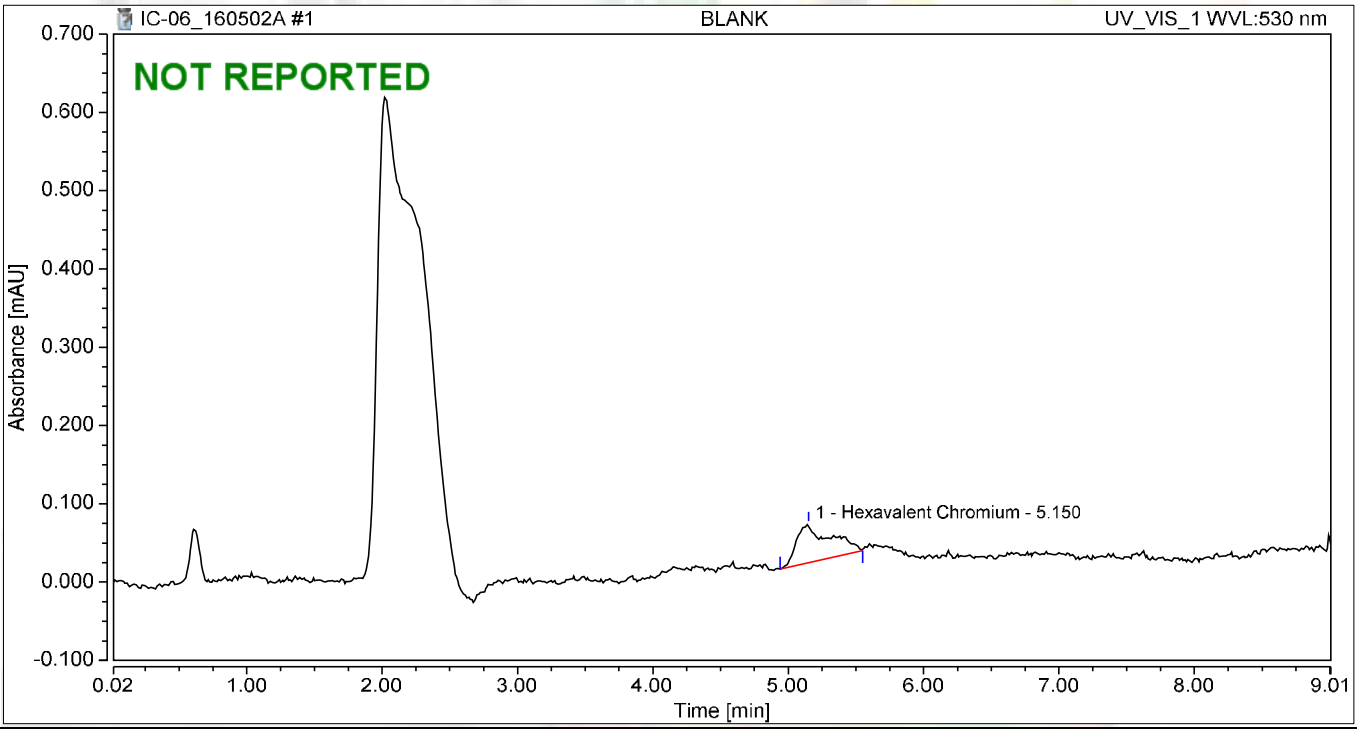
71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

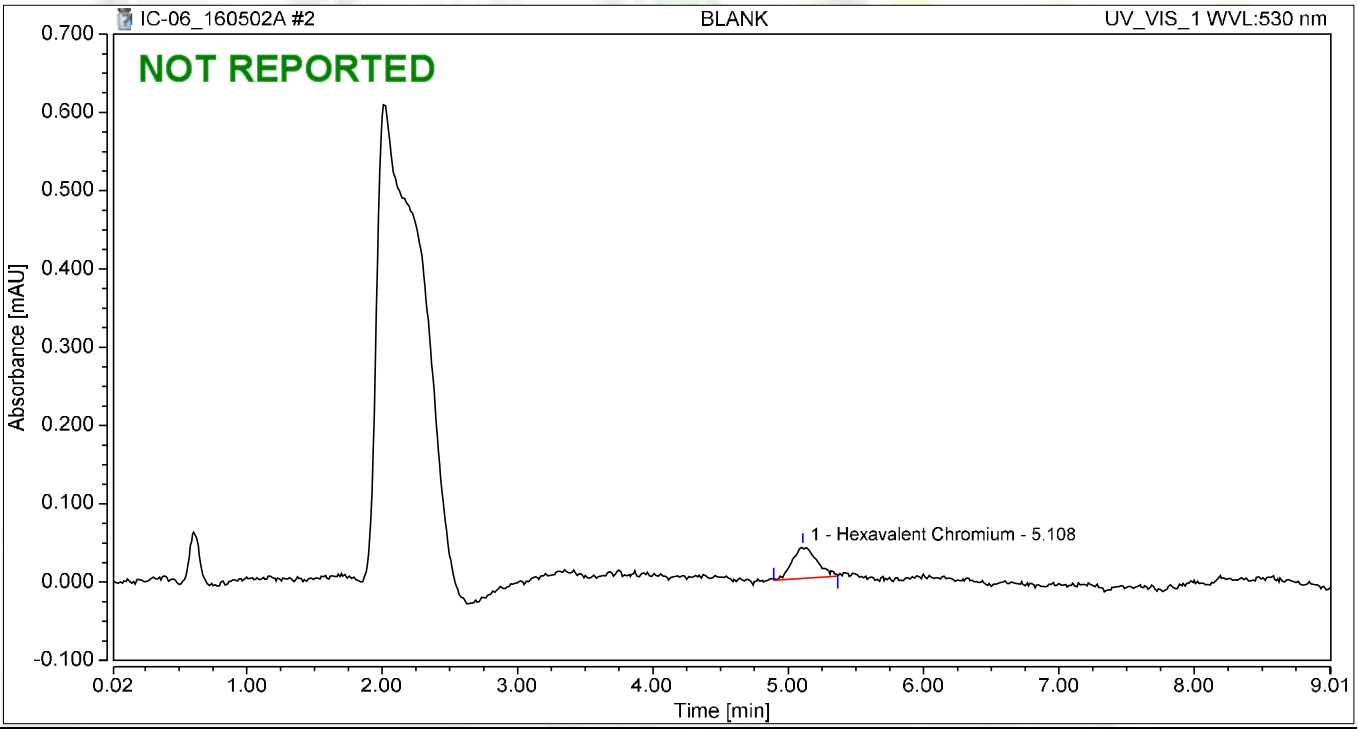
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.014	0.049	100.00	100.00	0.0418
Total:			**0.014**	**0.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

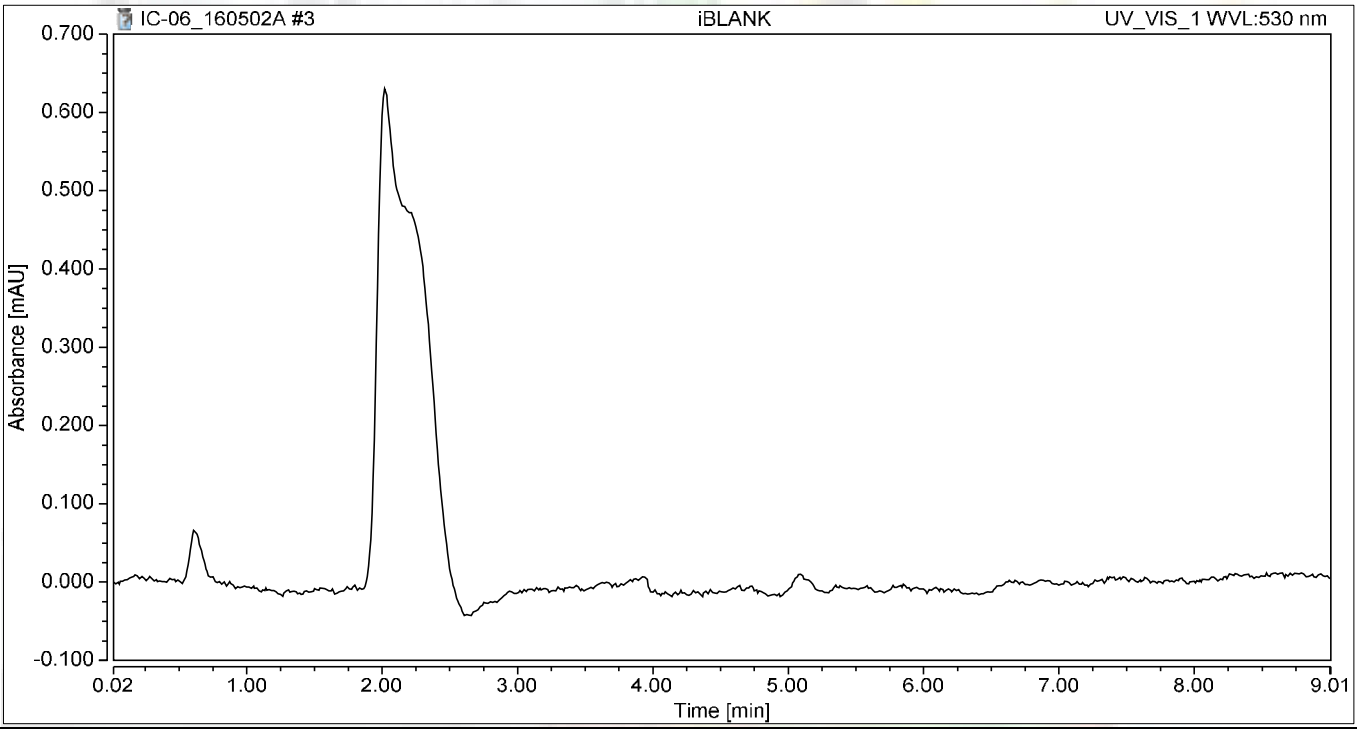
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.008	0.041	100.00	100.00	0.0183
Total:			**0.008**	**0.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

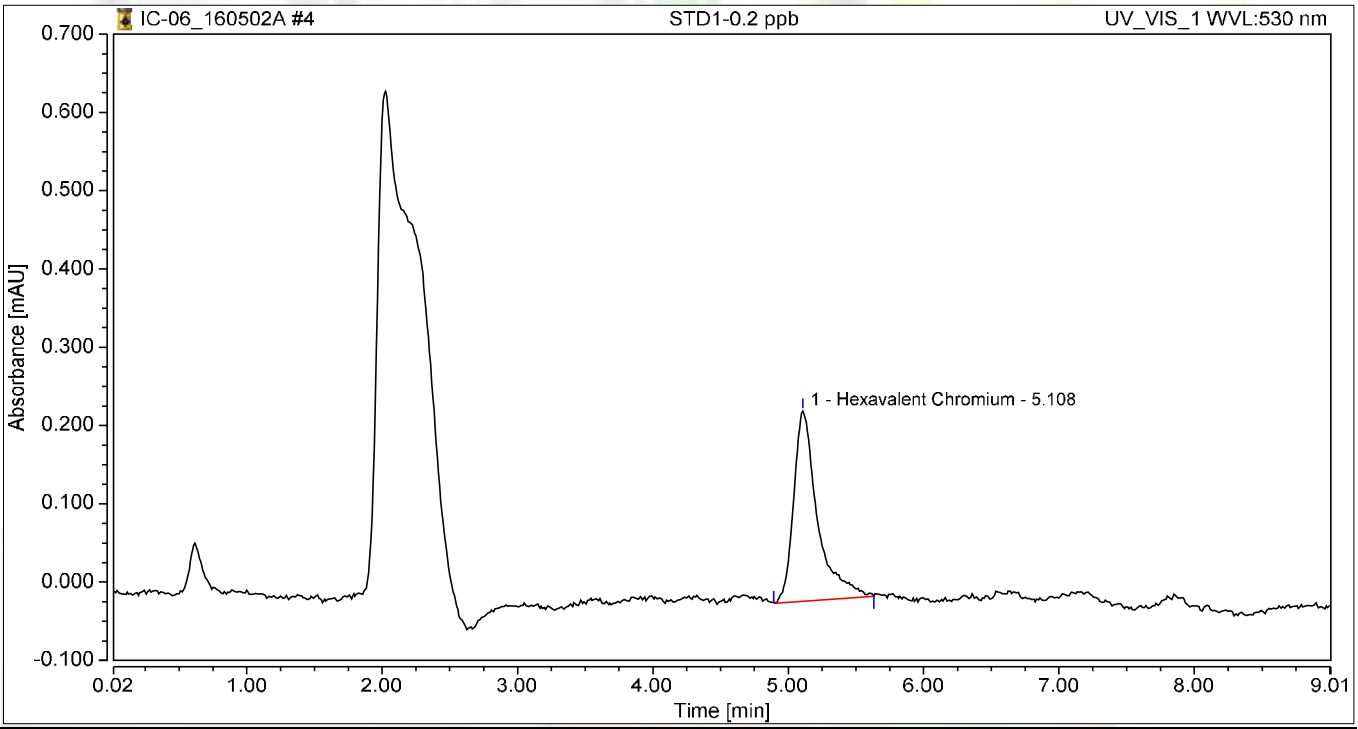
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

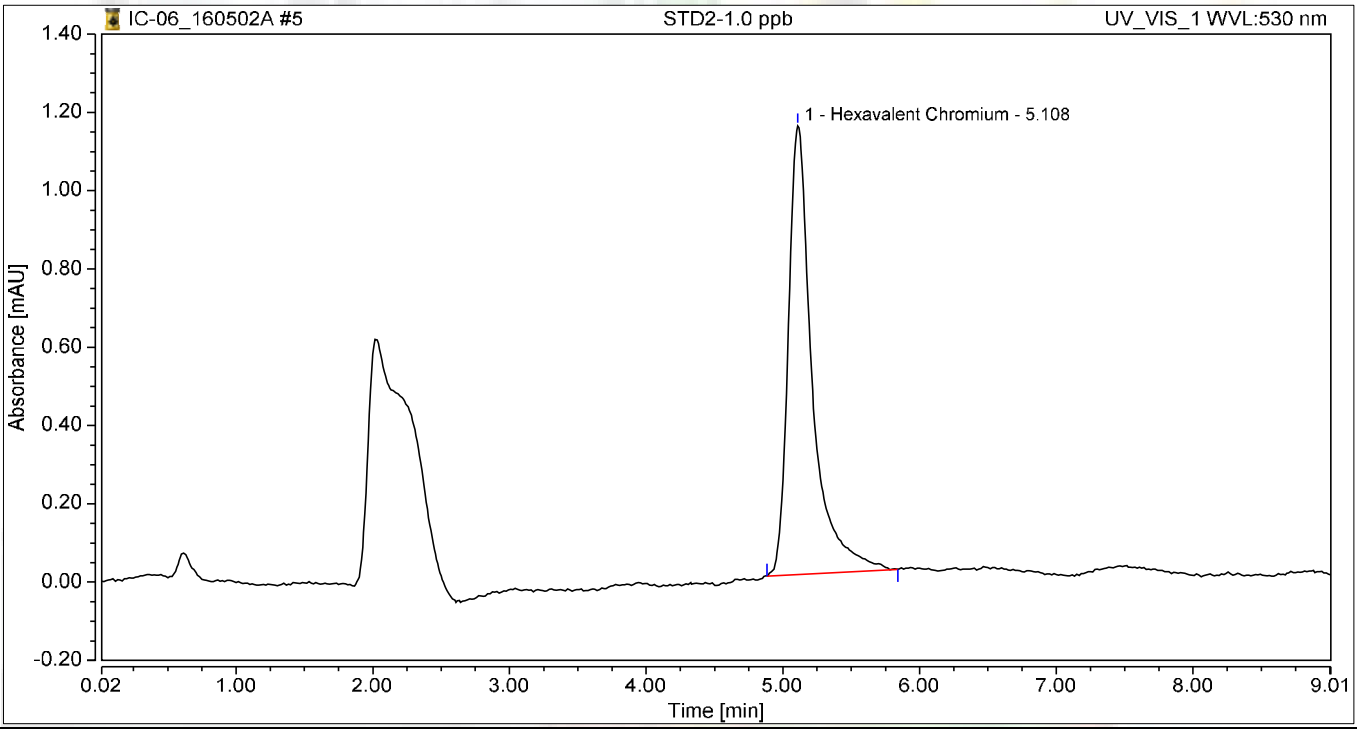
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.050	0.243	100.00	100.00	0.1956
Total:			**0.050**	**0.243**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

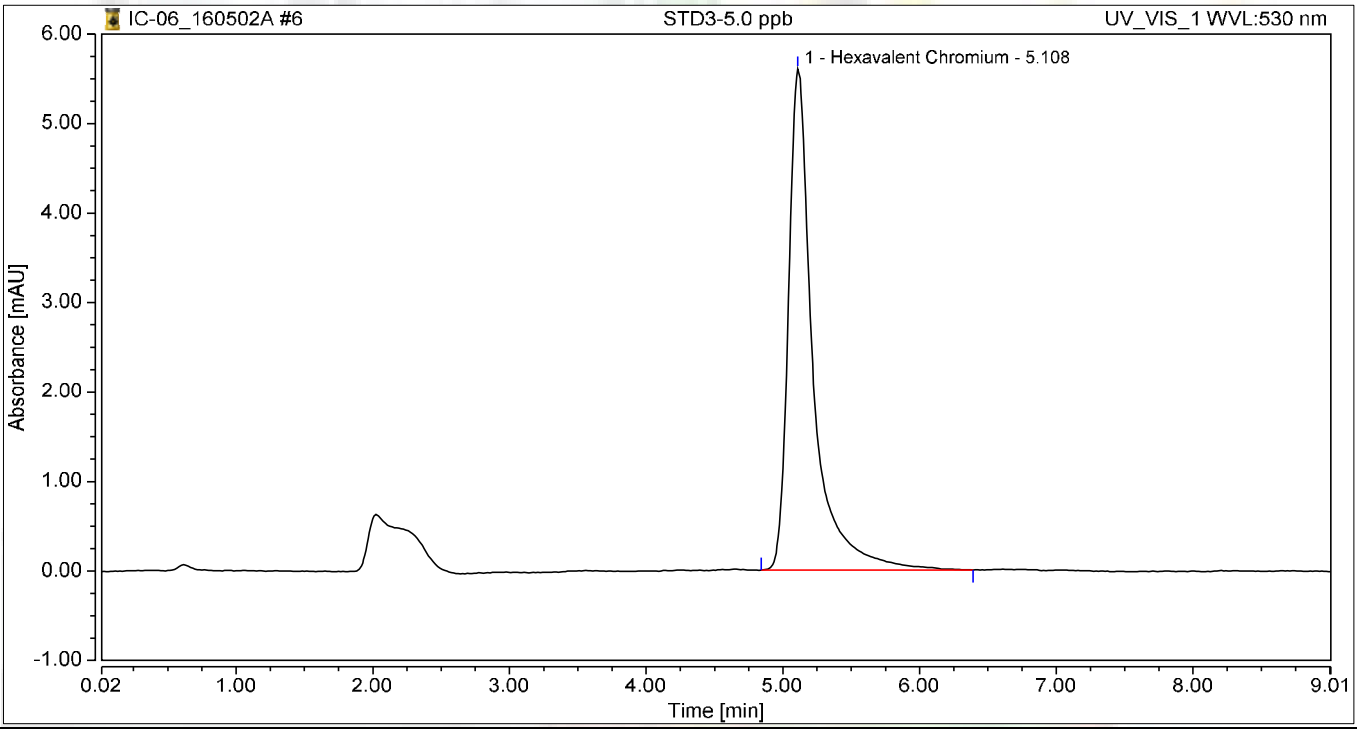
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.234	1.147	100.00	100.00	0.9843
Total:			**0.234**	**1.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

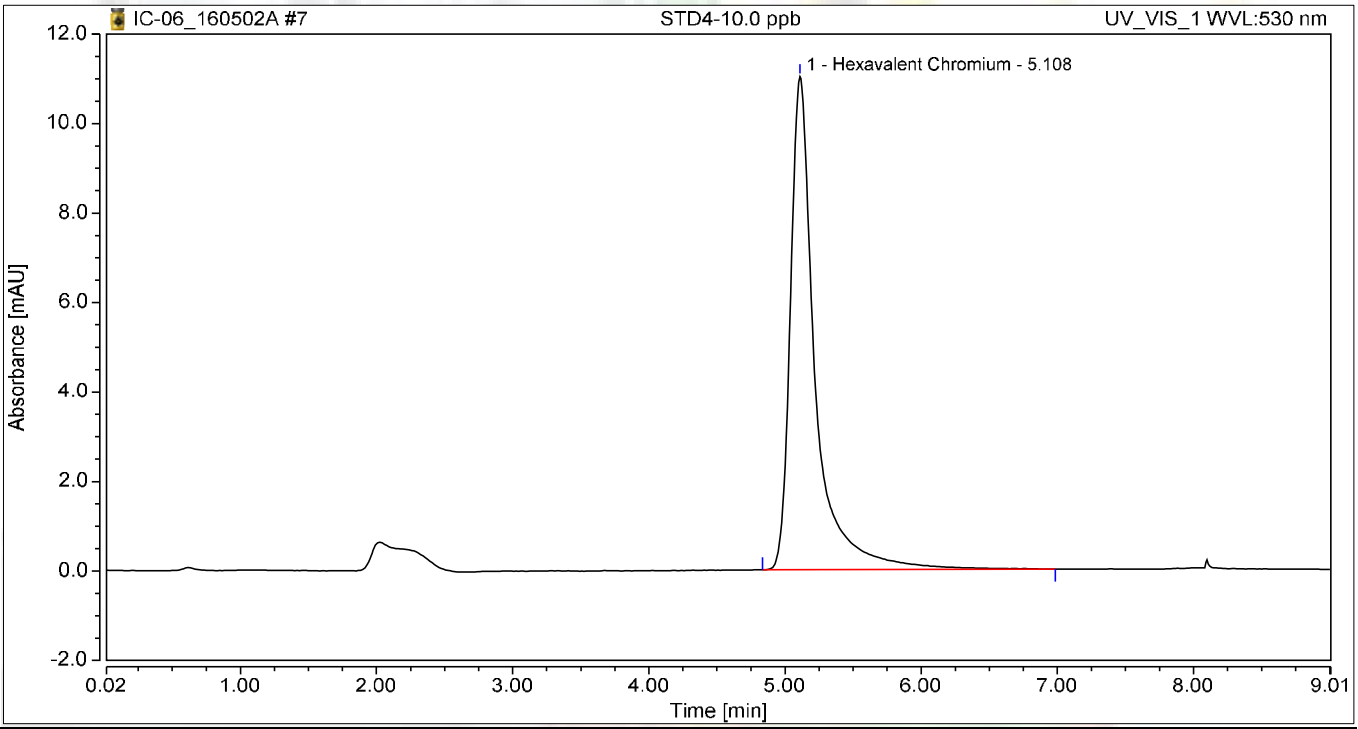
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.173	5.600	100.00	100.00	5.0033
Total:			**1.173**	**5.600**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

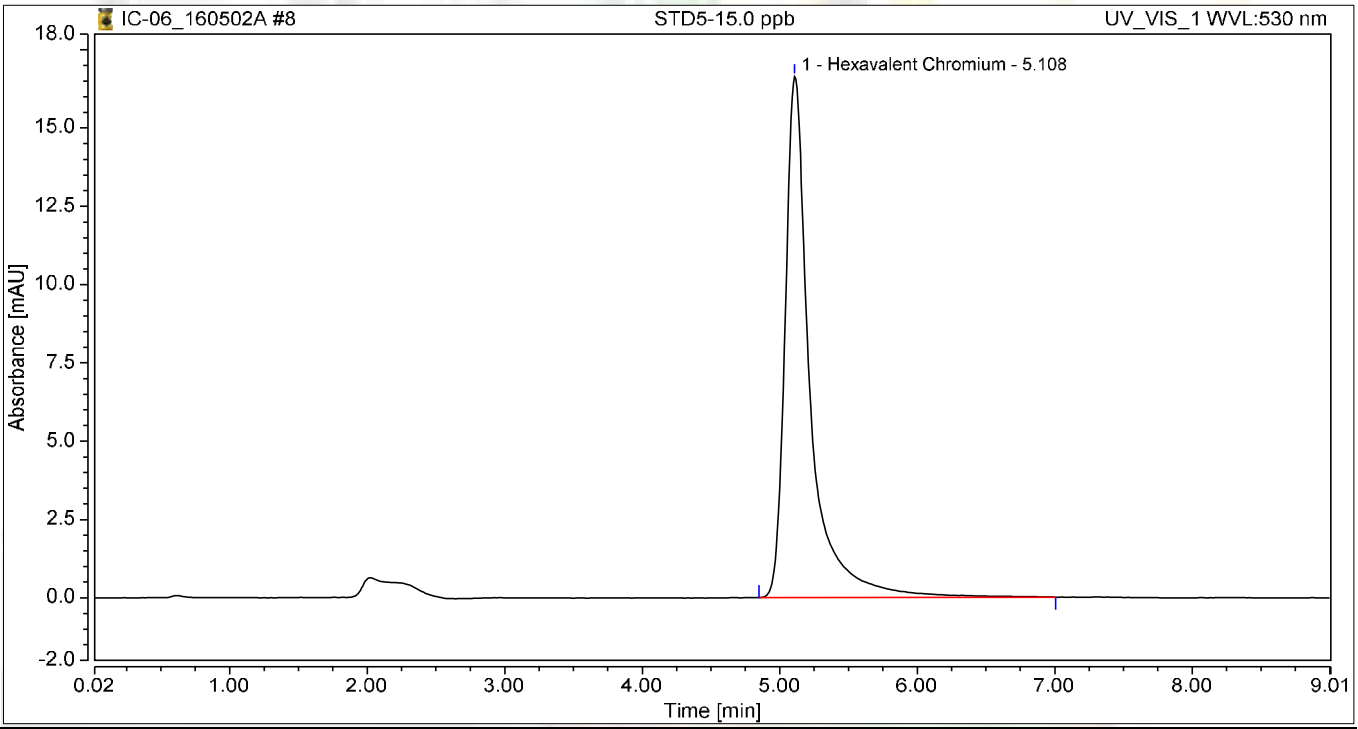
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.340	11.026	100.00	100.00	9.9997
Total:			**2.340**	**11.026**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

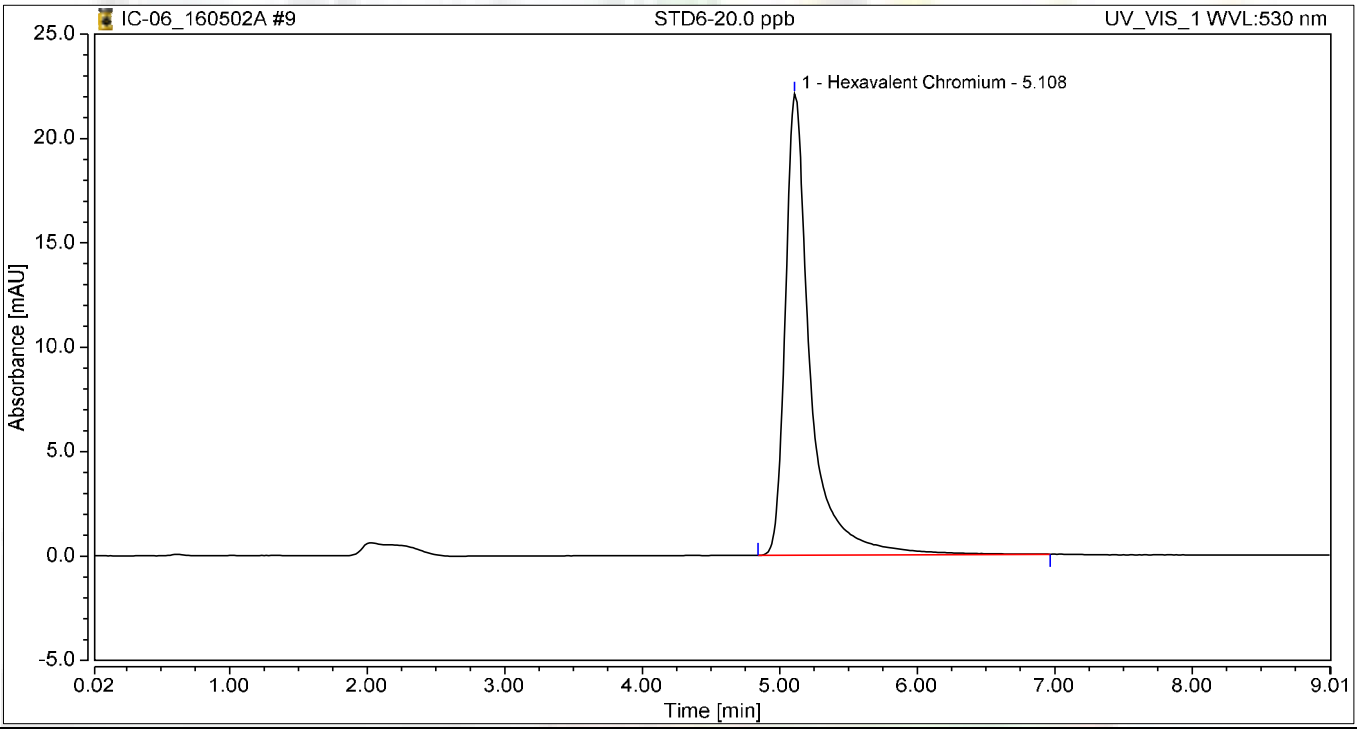
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	3.524	16.642	100.00	100.00	15.0679
Total:			**3.524**	**16.642**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**07**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



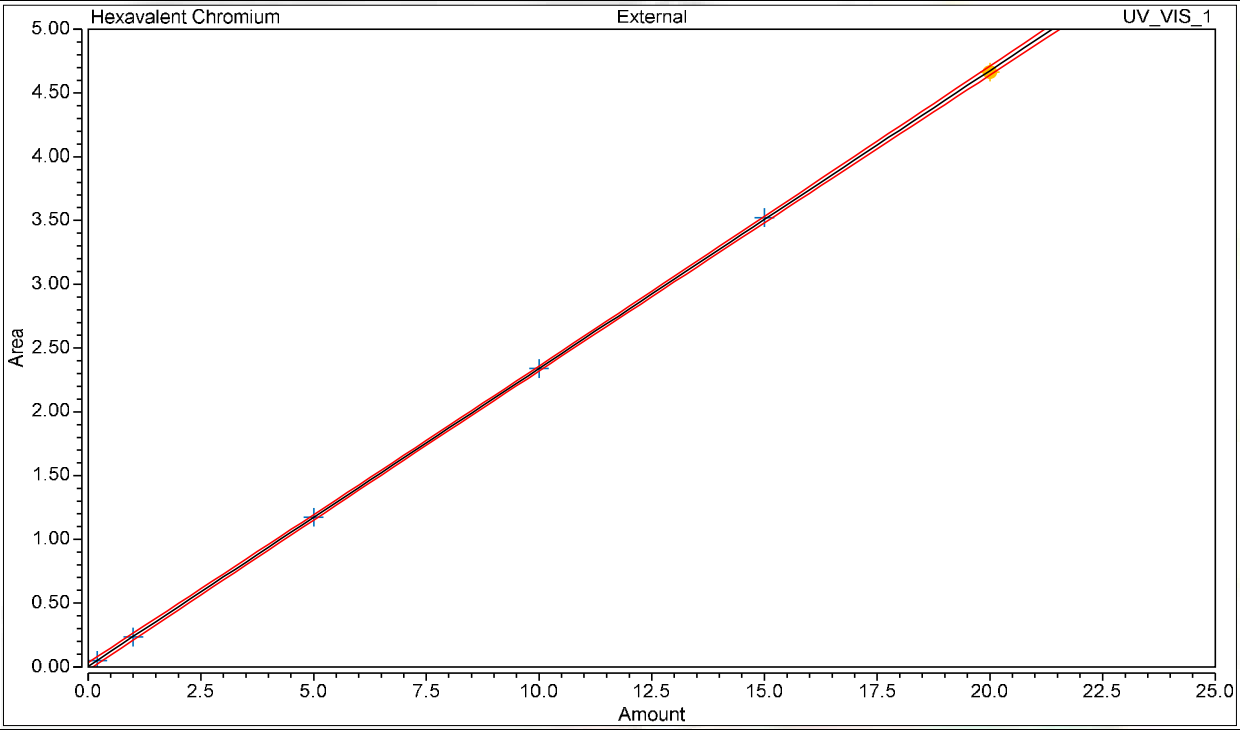
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	4.664	22.077	100.00	100.00	19.9492
Total:			**4.664**	**22.077**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin, WithOffset	*Offset (C0)*	0.0042
Evaluation Type	Area	*Slope (C1)*	0.2336
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

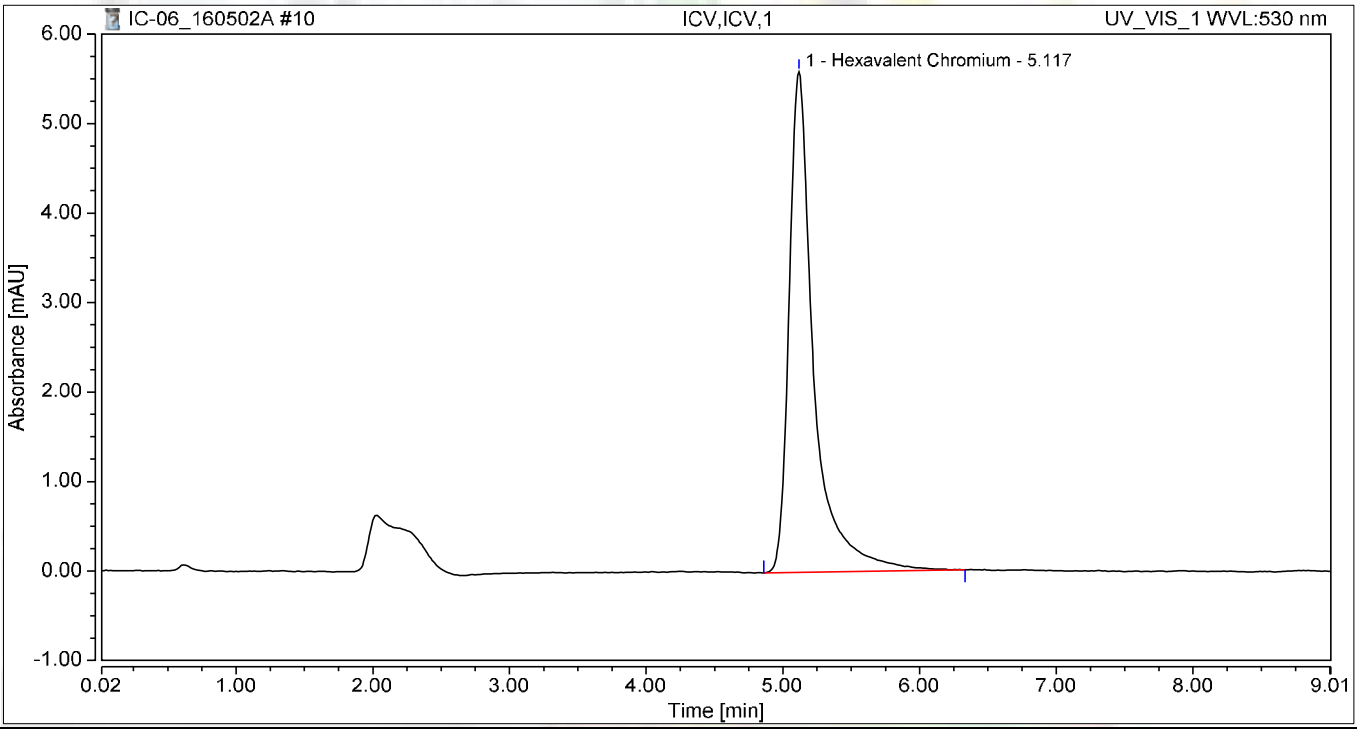
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	02	0.2000	0.0499	0.050	0.243
5	STD2-1.0 ppb	03	1.0000	0.2341	0.234	1.147
6	STD3-5.0 ppb	04	5.0000	1.1728	1.173	5.600
7	STD4-10.0 ppb	05	10.0000	2.3399	2.340	11.026
8	STD5-15.0 ppb	06	15.0000	3.5237	3.524	16.642
9	STD6-20.0 ppb	07	20.0000	4.6638	4.664	22.077

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

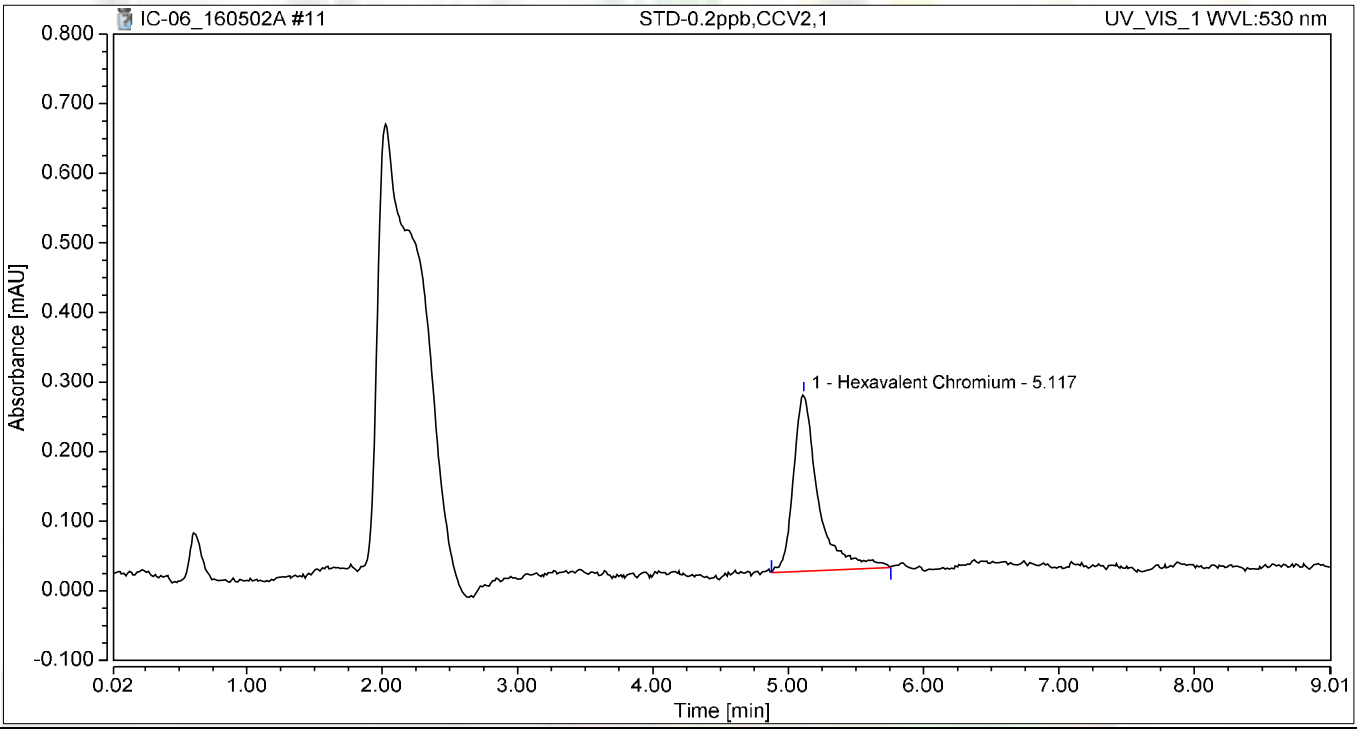
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	1.174	5.596	100.00	100.00	5.0075
Total:			**1.174**	**5.596**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

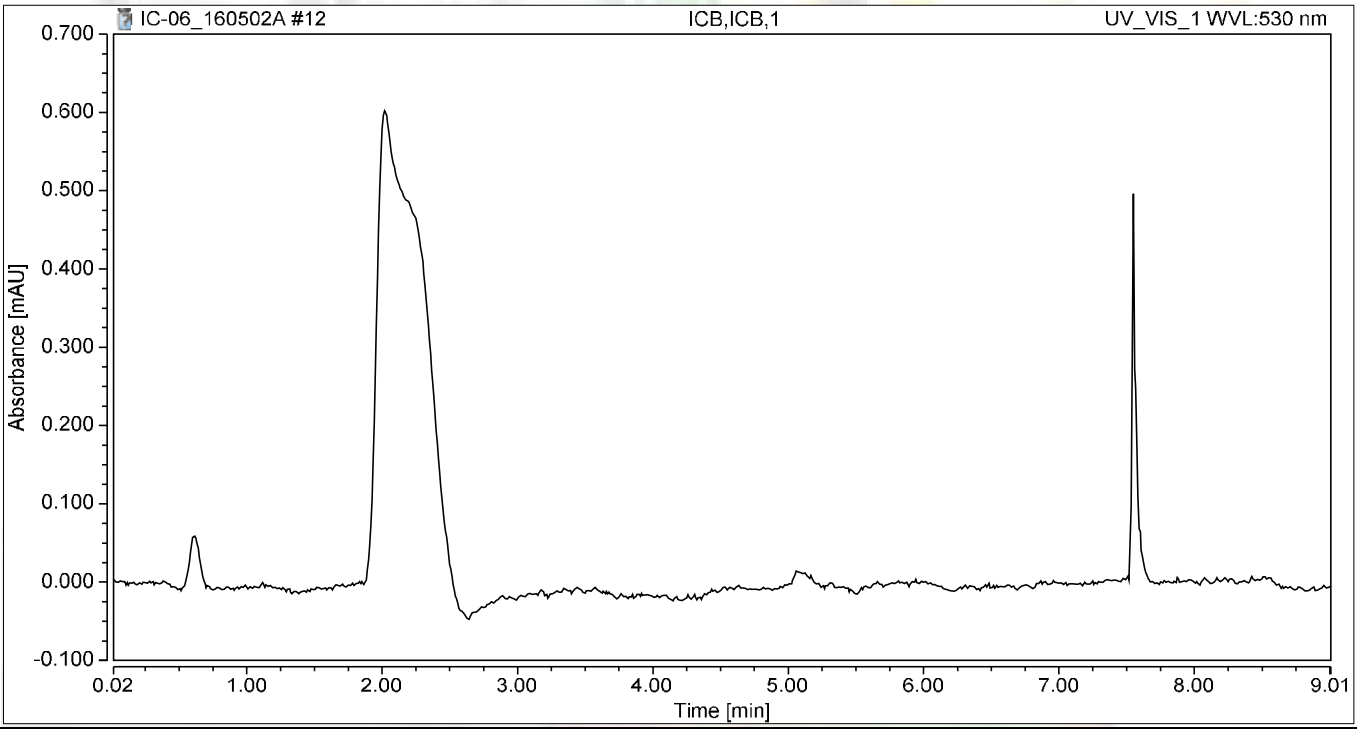
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.054	0.254	100.00	100.00	0.2134
Total:			**0.054**	**0.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

RAW DATA

INJECTION LOG: 160504A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/04/16 8:07 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	05/04/16 8:21 AM	Reported
12	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/04/16 8:33 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	05/04/16 8:43 AM	Reported
14	MB-R108255	MBLK	1	Hexavalent Chromium	05/04/16 8:53 AM	Reported
15	LCS-R108255	LCS	1	Hexavalent Chromium	05/04/16 9:03 AM	Reported
16	N019608-001I	SAMP	1	Hexavalent Chromium	05/04/16 9:13 AM	Reported
17	N019608-001IREP	DUP	1	Hexavalent Chromium	05/04/16 9:23 AM	Reported
18	N019597-001A	SAMP	1	Hexavalent Chromium	05/04/16 9:33 AM	Reported
19	N019597-001ADUP	DUP	1	Hexavalent Chromium	05/04/16 9:43 AM	Reported
20	N019597-001AMS	MS	1	Hexavalent Chromium	05/04/16 9:53 AM	Reported
21	N019597-001AMSD	MSD	1	Hexavalent Chromium	05/04/16 10:03 AM	Reported
22	N019597-002A	SAMP	1	Hexavalent Chromium	05/04/16 10:12 AM	Reported
23	N019593-001A	SAMP	1	Hexavalent Chromium	05/04/16 10:22 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	05/04/16 10:32 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	05/04/16 10:42 AM	Reported
26	N019593-002A	SAMP	1	Hexavalent Chromium	05/04/16 10:52 AM	Reported
27	N019593-003A	SAMP	1	Hexavalent Chromium	05/04/16 11:02 AM	Reported
28	N019593-004A	SAMP	1	Hexavalent Chromium	05/04/16 11:12 AM	Reported
29	N019542-009A	SAMP	5	Hexavalent Chromium	05/04/16 11:22 AM	Reported
30	N019542-009AMS	MS	5	Hexavalent Chromium	05/04/16 11:32 AM	Reported
31	N019542-016A	SAMP	1000	Hexavalent Chromium	05/04/16 11:42 AM	Reported
32	N019542-016AMS	MS	1000	Hexavalent Chromium	05/04/16 11:52 AM	Reported
33	N019542-017A	SAMP	1	Hexavalent Chromium	05/04/16 12:02 PM	Reported
34	N019542-017AMS	MS	1	Hexavalent Chromium	05/04/16 12:12 PM	Reported
35	N019542-018A	SAMP	1	Hexavalent Chromium	05/04/16 12:22 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	05/04/16 12:32 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	05/04/16 12:42 PM	Reported
38	N019542-018AMS	MS	1	Hexavalent Chromium	05/04/16 12:52 PM	Not Reported
39	N019542-019A	SAMP	1	Hexavalent Chromium	05/04/16 1:02 PM	Not Reported
40	N019542-019AMS	MS	1	Hexavalent Chromium	05/04/16 1:12 PM	Not Reported
41	N019542-020A	SAMP	1	Hexavalent Chromium	05/04/16 1:22 PM	Reported
42	N019542-020AMS	MS	1	Hexavalent Chromium	05/04/16 1:32 PM	Reported
43	N019614-001B	SAMP	100	Hexavalent Chromium	05/04/16 1:42 PM	Reported
44	N019614-001BMS	MS	100	Hexavalent Chromium	05/04/16 1:52 PM	Reported
45	N019614-002B	SAMP	1	Hexavalent Chromium	05/04/16 2:02 PM	Reported
46	N019614-002BMS	MS	1	Hexavalent Chromium	05/04/16 2:12 PM	Reported
47	N019617-001A	SAMP	1	Hexavalent Chromium	05/04/16 2:22 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	05/04/16 2:32 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	05/04/16 2:41 PM	Reported

5/13/2016

INJECTION LOG: 160504A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019542-018AMS	MS	1	Hexavalent Chromium	05/04/16 2:56 PM	Reported
51	N019542-019A	SAMP	5	Hexavalent Chromium	05/04/16 3:20 PM	Reported
52	N019542-019AMS	MS	5	Hexavalent Chromium	05/04/16 3:32 PM	Reported
53	MB-R108256	MBLK	1	Hexavalent Chromium	05/04/16 3:42 PM	Reported
54	LCS-R108256	LCS	1	Hexavalent Chromium	05/04/16 3:52 PM	Reported
55	N019543-001A	SAMP	1	Hexavalent Chromium	05/04/16 4:02 PM	Reported
56	N019543-001ADUP	DUP	1	Hexavalent Chromium	05/04/16 4:12 PM	Reported
57	N019543-001AMS	MS	1	Hexavalent Chromium	05/04/16 4:22 PM	Reported
58	N019543-001AMSD	MSD	1	Hexavalent Chromium	05/04/16 4:31 PM	Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/04/16 4:41 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/04/16 4:51 PM	Reported
61	N019543-002A	SAMP	1	Hexavalent Chromium	05/04/16 5:01 PM	Reported
62	N019543-002AMS	MS	1	Hexavalent Chromium	05/04/16 5:11 PM	Reported
63	N019543-003A	SAMP	1	Hexavalent Chromium	05/04/16 5:21 PM	Reported
64	N019543-003AMS	MS	1	Hexavalent Chromium	05/04/16 5:31 PM	Reported
65	N019543-004A	SAMP	1	Hexavalent Chromium	05/04/16 5:41 PM	Reported
66	N019543-004AMS	MS	1	Hexavalent Chromium	05/04/16 5:51 PM	Not Reported
67	N019543-005A	SAMP	1	Hexavalent Chromium	05/04/16 6:01 PM	Reported
68	N019543-005AMS	MS	1	Hexavalent Chromium	05/04/16 6:11 PM	Reported
69	N019543-006A	SAMP	1	Hexavalent Chromium	05/04/16 6:21 PM	Reported
70	N019543-006AMS	MS	1	Hexavalent Chromium	05/04/16 6:31 PM	Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/04/16 6:41 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/04/16 6:51 PM	Reported
73	N019543-007A	SAMP	1	Hexavalent Chromium	05/04/16 7:01 PM	Reported
74	N019543-007AMS	MS	1	Hexavalent Chromium	05/04/16 7:11 PM	Reported
75	N019543-008A	SAMP	1	Hexavalent Chromium	05/04/16 7:21 PM	Reported
76	N019543-008AMS	MS	1	Hexavalent Chromium	05/04/16 7:31 PM	Reported
77	N019543-009A	SAMP	1	Hexavalent Chromium	05/04/16 7:41 PM	Reported
78	N019543-009AMS	MS	1	Hexavalent Chromium	05/04/16 7:51 PM	Reported
79	N019543-010A	SAMP	1	Hexavalent Chromium	05/04/16 8:01 PM	Reported
80	N019543-010AMS	MS	1	Hexavalent Chromium	05/04/16 8:11 PM	Reported
81	N019543-011A	SAMP	1	Hexavalent Chromium	05/04/16 8:21 PM	Not Reported
82	N019543-011AMS	MS	1	Hexavalent Chromium	05/04/16 8:31 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/04/16 8:41 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/04/16 8:51 PM	Reported
85	N019543-012A	SAMP	1	Hexavalent Chromium	05/04/16 9:00 PM	Reported
86	N019543-012AMS	MS	1	Hexavalent Chromium	05/04/16 9:10 PM	Reported
87	N019543-013A	SAMP	1	Hexavalent Chromium	05/04/16 9:20 PM	Reported
88	N019543-013AMS	MS	1	Hexavalent Chromium	05/04/16 9:30 PM	Reported
89	N019543-014A	SAMP	1	Hexavalent Chromium	05/04/16 9:40 PM	Reported
90	N019543-014AMS	MS	1	Hexavalent Chromium	05/04/16 9:50 PM	Reported
91	N019544-001A	SAMP	1	Hexavalent Chromium	05/04/16 10:00 PM	Reported
92	N019544-001AMS	MS	1	Hexavalent Chromium	05/04/16 10:10 PM	Reported
93	N019543-004AMS	MS	1	Hexavalent Chromium	05/04/16 10:20 PM	Reported
94	CCV-8	CCV1	1	Hexavalent Chromium	05/04/16 10:30 PM	Reported
95	CCB-8	CCB	1	Hexavalent Chromium	05/04/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160504A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/May/16 06:08:14**
No. of Injections:	**98**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/04/2016 08:07	Finished	CCV @ 5ppb, IWST-160401A
11	CCV-1,CCV,1	2	1000	Unknown		05/04/2016 08:21	Finished	CCV @ 5ppb, IWST-160401A
12	STD-0.2ppb,CCV2,1	3	1000	Unknown		05/04/2016 08:33	Finished	PQL @ 0.2 ppb
13	CCB-1,CCB,1	4	1000	Unknown		05/04/2016 08:43	Finished	CCB R160501A
14	MB-H2O,MBLK,1	5	1000	Unknown		05/04/2016 08:53	Finished	MB R160426A
15	LCS-H2O,LCS,1	6	1000	Unknown		05/04/2016 09:03	Finished	LCS(5ppb), IWST-160401B
16	N019608-001I,SAMP,1	7	1000	Unknown		05/04/2016 09:13	Finished	SAMP, 10mL
17	N019608-001IREP,DUP,1	8	1000	Unknown		05/04/2016 09:23	Finished	DUP, 10mL
18	N019597-001A,SAMP,1	9	1000	Unknown		05/04/2016 09:33	Finished	SAMP, 10mL
19	N019597-001ADUP,DUP,1	10	1000	Unknown		05/04/2016 09:43	Finished	DUP, 10mL
20	N019597-001AMS,MS,1	11	1000	Unknown		05/04/2016 09:53	Finished	MS (5ppb), IWST-160401B, 10 ml
21	N019597-001AMSD,MSD,1	12	1000	Unknown		05/04/2016 10:03	Finished	MSD (5ppb), IWST-160401B, 10 r
22	N019597-002A,SAMP,1	13	1000	Unknown		05/04/2016 10:12	Finished	SAMP, 10mL
23	N019593-001A,SAMP,1	14	1000	Unknown		05/04/2016 10:22	Finished	SAMP, 10mL
24	CCV-2,CCV1,1	15	1000	Unknown		05/04/2016 10:32	Finished	CCV @ 10ppb, IWST-160401A
25	CCB-2,CCB,1	16	1000	Unknown		05/04/2016 10:42	Finished	CCB
26	N019593-002A,SAMP,1	17	1000	Unknown		05/04/2016 10:52	Finished	SAMP, 10mL
27	N019593-003A,SAMP,1	18	1000	Unknown		05/04/2016 11:02	Finished	SAMP, 10mL
28	N019593-004A,SAMP,1	19	1000	Unknown		05/04/2016 11:12	Finished	SAMP, 10mL
29	N019542-009A,SAMP,5	20	1000	Unknown		05/04/2016 11:22	Finished	SAMP, 2.0>10mL
30	N019542-009AMS,MS,5	21	1000	Unknown		05/04/2016 11:32	Finished	MS (5ppb), IWST-160401B, 2.0>1
31	N019542-016A,SAMP,1000	22	1000	Unknown		05/04/2016 11:42	Finished	SAMP, 10uL> 10mL
32	N019542-016AMS,MS,1000	23	1000	Unknown		05/04/2016 11:52	Finished	MS (5ppb), IWST-160401B, 10uL>
33	N019542-017A,SAMP,1	24	1000	Unknown		05/04/2016 12:02	Finished	SAMP, 10mL
34	N019542-017AMS,MS,1	25	1000	Unknown		05/04/2016 12:12	Finished	MS (1ppb), IWST-160401B, 10 ml
35	N019542-018A,SAMP,1	26	1000	Unknown		05/04/2016 12:22	Finished	SAMP, 10mL
36	CCV-3,CCV,1	27	1000	Unknown		05/04/2016 12:32	Finished	CCV @ 5ppb, IWST-160401A
37	CCB-3,CCB,1	28	1000	Unknown		05/04/2016 12:42	Finished	CCB
38	N019542-018AMS,MS,1	29	1000	Unknown		05/04/2016 12:52	Finished	MS (1ppb), IWST-160401B, 10 ml
39	N019542-019A,SAMP,1	30	1000	Unknown		05/04/2016 13:02	Finished	SAMP, 10mL
40	N019542-019AMS,MS,1	31	1000	Unknown		05/04/2016 13:12	Finished	MS (1ppb), IWST-160401B, 10 ml
41	N019542-020A,SAMP,1	32	1000	Unknown		05/04/2016 13:22	Finished	SAMP, 10mL
42	N019542-020AMS,MS,1	33	1000	Unknown		05/04/2016 13:32	Finished	MS (1ppb), IWST-160401B, 10 ml
43	N019614-001B,SAMP,100	34	1000	Unknown		05/04/2016 13:42	Finished	SAMP, 0.10>10mL
44	N019614-001BMS,MS,100	35	1000	Unknown		05/04/2016 13:52	Finished	MS (5ppb), IWST-160401B, 0.10>
45	N019614-002B,SAMP,1	36	1000	Unknown		05/04/2016 14:02	Finished	SAMP, 10mL
46	N019614-002BMS,MS,1	37	1000	Unknown		05/04/2016 14:12	Finished	MS (1ppb), IWST-160401B, 10 ml
47	N019617-001A,SAMP,1	38	1000	Unknown		05/04/2016 14:22	Finished	SAMP, 10mL
48	CCV-4,CCV1,1	39	1000	Unknown		05/04/2016 14:32	Finished	CCV @ 10ppb, IWST-160401A
49	CCB-4,CCB,1	40	1000	Unknown		05/04/2016 14:41	Finished	CCB
50	N019542-018AMS,MS,1	1	1000	Unknown		05/04/2016 14:56	Finished	MS (1ppb), IWST-160401B, 10 ml
51	N019542-019A,SAMP,5	2	1000	Unknown		05/04/2016 15:20	Finished	SAMP, 2.0> 10mL
52	N019542-019AMS,MS,5	3	1000	Unknown		05/04/2016 15:32	Finished	MS (5ppb), IWST-160401B, 2.0>1
53	MB-H2O,MBLK,1	4	1000	Unknown		05/04/2016 15:42	Finished	MB R160426A
54	LCS-H2O,LCS,1	5	1000	Unknown		05/04/2016 15:52	Finished	LCS(5ppb), IWST-160401B
55	N019543-001A,SAMP,1	6	1000	Unknown		05/04/2016 16:02	Finished	SAMP, 10mL
56	N019543-001ADUP,DUP,1	7	1000	Unknown		05/04/2016 16:12	Finished	DUP, 10mL
57	N019543-001AMS,MS,1	8	1000	Unknown		05/04/2016 16:22	Finished	MS (1ppb), IWST-160401B, 10 ml
58	N019543-001AMSD,MSD,1	9	1000	Unknown		05/04/2016 16:31	Finished	MSD (1ppb), IWST-160401B, 10 r
59	CCV-5,CCV,1	11	1000	Unknown		05/04/2016 16:41	Finished	CCV @ 5ppb, IWST-160401A
60	CCB-5,CCB,1	12	1000	Unknown		05/04/2016 16:51	Finished	CCB
61	N019543-002A,SAMP,1	13	1000	Unknown		05/04/2016 17:01	Finished	SAMP, 10mL
62	N019543-002AMS,MS,1	14	1000	Unknown		05/04/2016 17:11	Finished	MS (1ppb), IWST-160401B, 10 ml
63	N019543-003A,SAMP,1	15	1000	Unknown		05/04/2016 17:21	Finished	SAMP, 10mL
64	N019543-003AMS,MS,1	16	1000	Unknown		05/04/2016 17:31	Finished	MS (1ppb), IWST-160401B, 10 ml
65	N019543-004A,SAMP,1	17	1000	Unknown		05/04/2016 17:41	Finished	SAMP, 10mL
66	N019543-004AMS,MS,1	18	1000	Unknown		05/04/2016 17:51	Finished	MS (1ppb), IWST-160401B, 10 ml
67	N019543-005A,SAMP,1	19	1000	Unknown		05/04/2016 18:01	Finished	SAMP, 10mL
68	N019543-005AMS,MS,1	20	1000	Unknown		05/04/2016 18:11	Finished	MS (1ppb), IWST-160401B, 10 ml
69	N019543-006A,SAMP,1	21	1000	Unknown		05/04/2016 18:21	Finished	SAMP, 10mL
70	N019543-006AMS,MS,1	22	1000	Unknown		05/04/2016 18:31	Finished	MS (1ppb), IWST-160401B, 10 ml

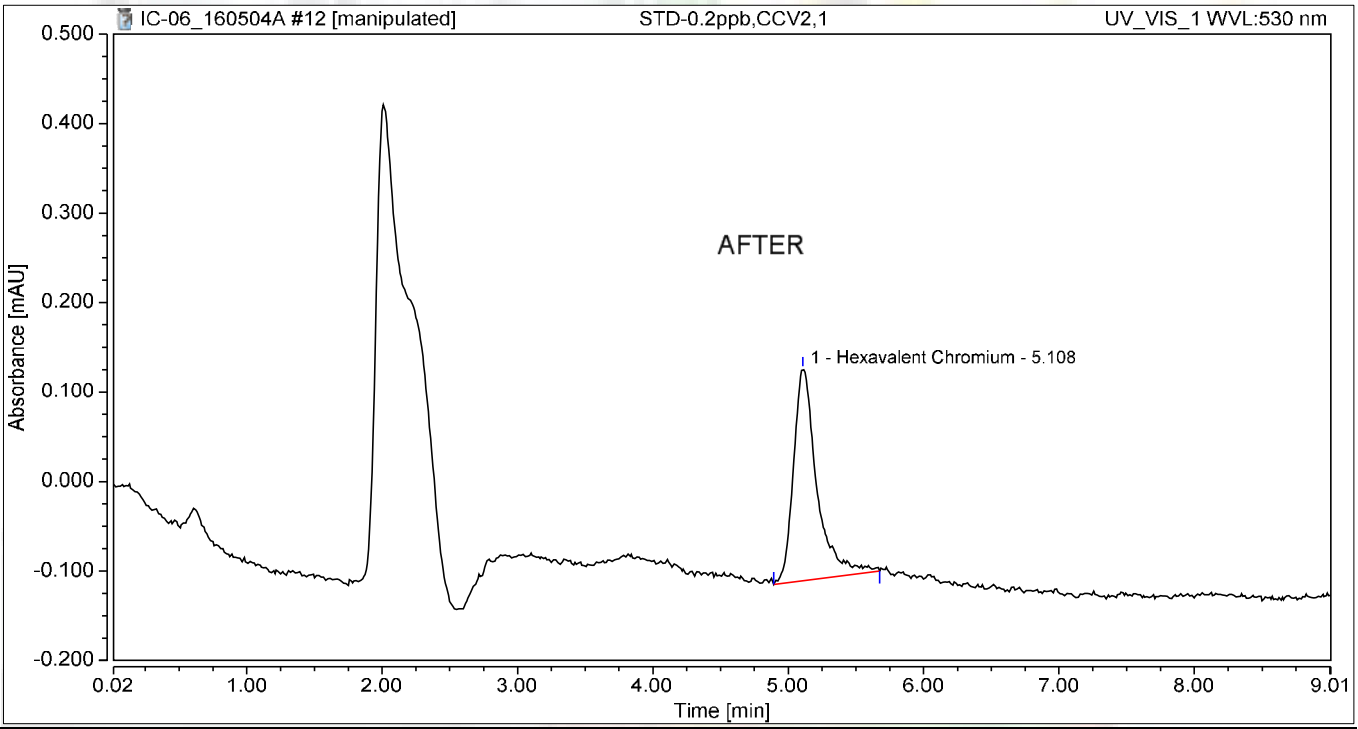
71	CCV-6,CCV1,1	23	1000	Unknown		05/04/2016 18:41	Finished	CCV @ 10ppb, IWST-160401A
72	CCB-6,CCB,1	24	1000	Unknown		05/04/2016 18:51	Finished	CCB
73	N019543-007A,SAMP,1	25	1000	Unknown		05/04/2016 19:01	Finished	SAMP, 10mL
74	N019543-007AMS,MS,1	26	1000	Unknown		05/04/2016 19:11	Finished	MS (1ppb), IWST-160401B, 10 ml
75	N019543-008A,SAMP,1	27	1000	Unknown		05/04/2016 19:21	Finished	SAMP, 10mL
76	N019543-008AMS,MS,1	28	1000	Unknown		05/04/2016 19:31	Finished	MS (1ppb), IWST-160401B, 10 ml
77	N019543-009A,SAMP,1	29	1000	Unknown		05/04/2016 19:41	Finished	SAMP, 10mL
78	N019543-009AMS,MS,1	30	1000	Unknown		05/04/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 ml
79	N019543-010A,SAMP,1	31	1000	Unknown		05/04/2016 20:01	Finished	SAMP, 10mL
80	N019543-010AMS,MS,1	32	1000	Unknown		05/04/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 ml
81	N019543-011A,SAMP,1	33	1000	Unknown		05/04/2016 20:21	Finished	SAMP, 10mL
82	N019543-011AMS,MS,1	34	1000	Unknown		05/04/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 ml
83	CCV-7,CCV,1	35	1000	Unknown		05/04/2016 20:41	Finished	CCV @ 5ppb, IWST-160401A
84	CCB-7,CCB,1	36	1000	Unknown		05/04/2016 20:51	Finished	CCB
85	N019543-012A,SAMP,1	37	1000	Unknown		05/04/2016 21:00	Finished	SAMP, 10mL
86	N019543-012AMS,MS,1	38	1000	Unknown		05/04/2016 21:10	Finished	MS (1ppb), IWST-160401B, 10 ml
87	N019543-013A,SAMP,1	39	1000	Unknown		05/04/2016 21:20	Finished	SAMP, 10mL
88	N019543-013AMS,MS,1	40	1000	Unknown		05/04/2016 21:30	Finished	MS (1ppb), IWST-160401B, 10 ml
89	N019543-014A,SAMP,1	41	1000	Unknown		05/04/2016 21:40	Finished	SAMP, 10mL
90	N019543-014AMS,MS,1	42	1000	Unknown		05/04/2016 21:50	Finished	MS (1ppb), IWST-160401B, 10 ml
91	N019544-001A,SAMP,1	43	1000	Unknown		05/04/2016 22:00	Finished	SAMP, 10mL
92	N019544-001AMS,MS,1	44	1000	Unknown		05/04/2016 22:10	Finished	MS (1ppb), IWST-160401B, 10 ml
93	N019543-004AMS,MS,1	45	1000	Unknown		05/04/2016 22:20	Finished	MS (1ppb), IWST-160401B, 10 ml
94	CCV-8-CCV1,1	46	1000	Unknown		05/04/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
95	CCB-8-CCB,1	47	1000	Unknown		05/04/2016 22:40	Finished	CCB R160331B
96	SHUTDOWN	48	1000	Unknown		05/04/2016 22:50	Finished	
97	Eluent: R160503A	49	1000	Unknown		n.a.	Finished	Eluent
98	PCR: R160504A	50	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 08:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.048	0.237	100.00	100.00	0.1868
Total:			**0.048**	**0.237**	**100.00**	**100.00**	

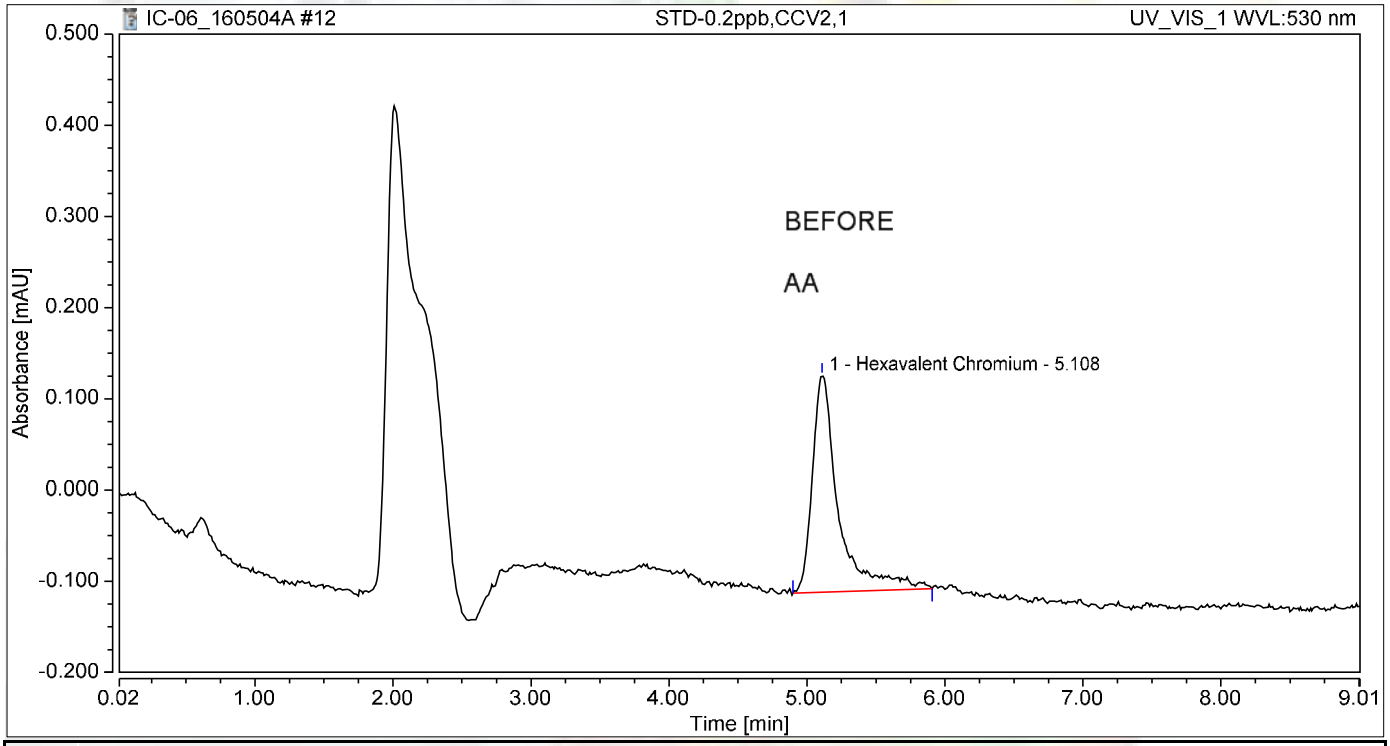
5/6/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 08:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

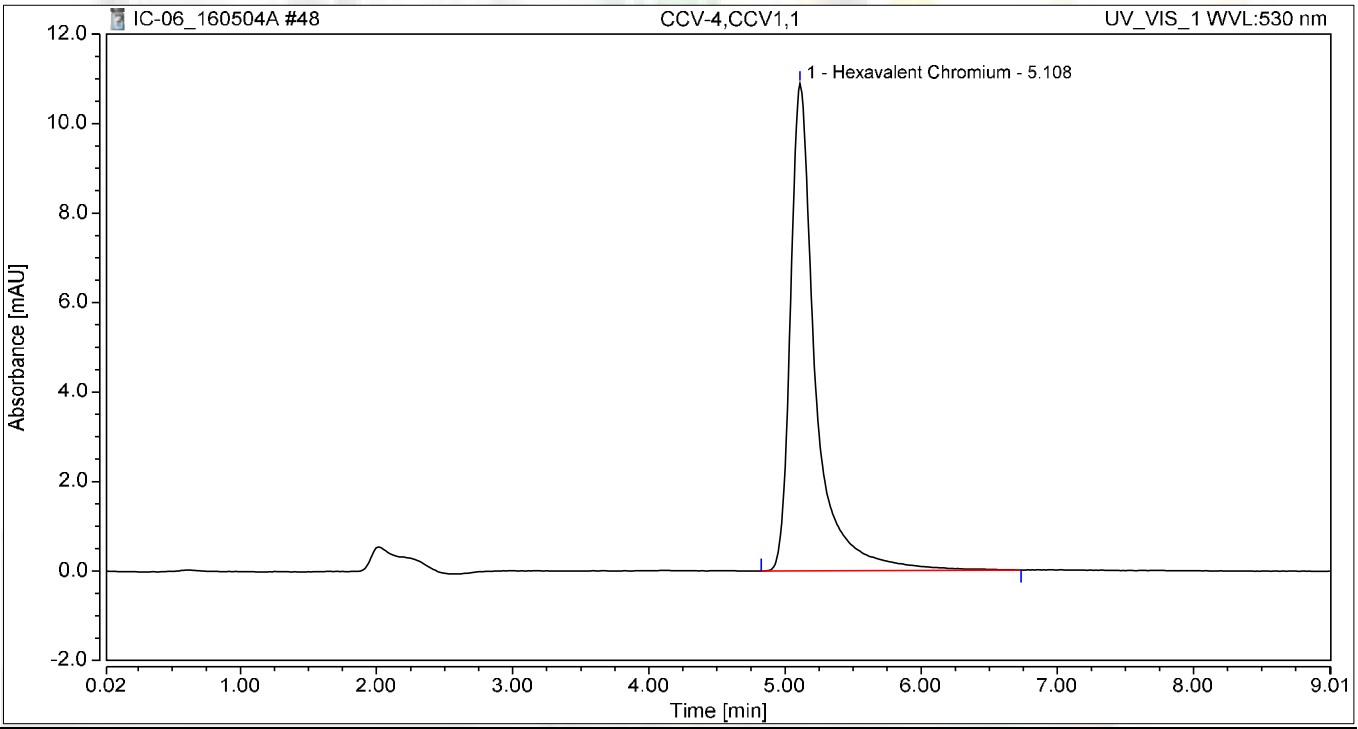
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.052	0.238	100.00	100.00	0.2051
Total:			**0.052**	**0.238**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

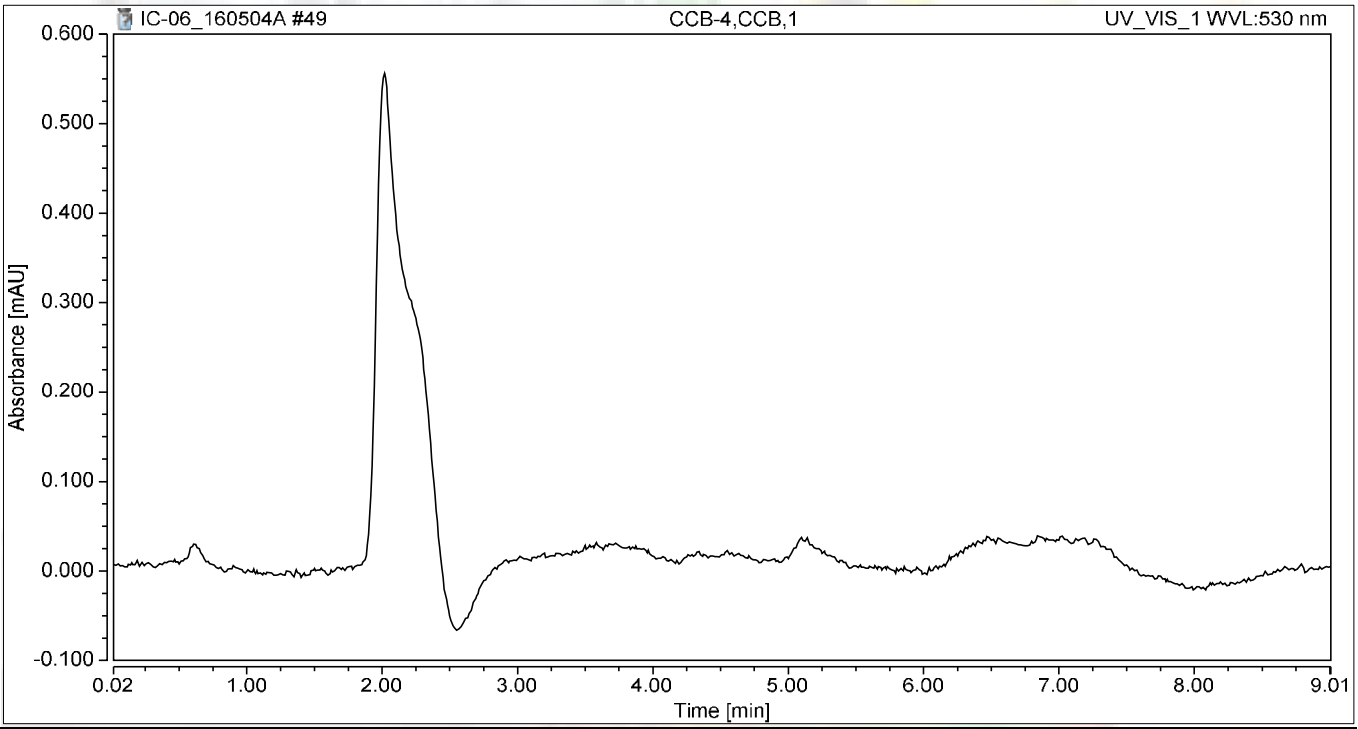
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.324	10.895	100.00	100.00	9.9337
Total:			**2.324**	**10.895**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

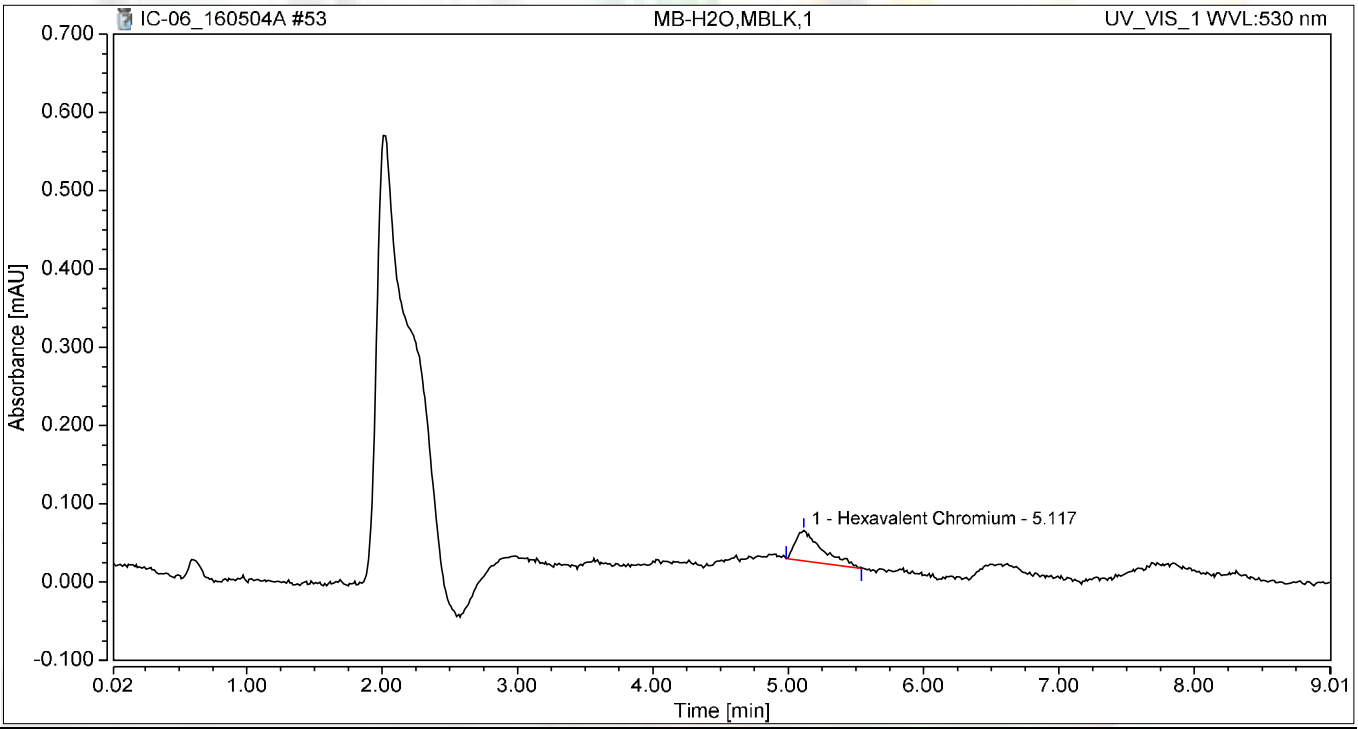
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 15:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

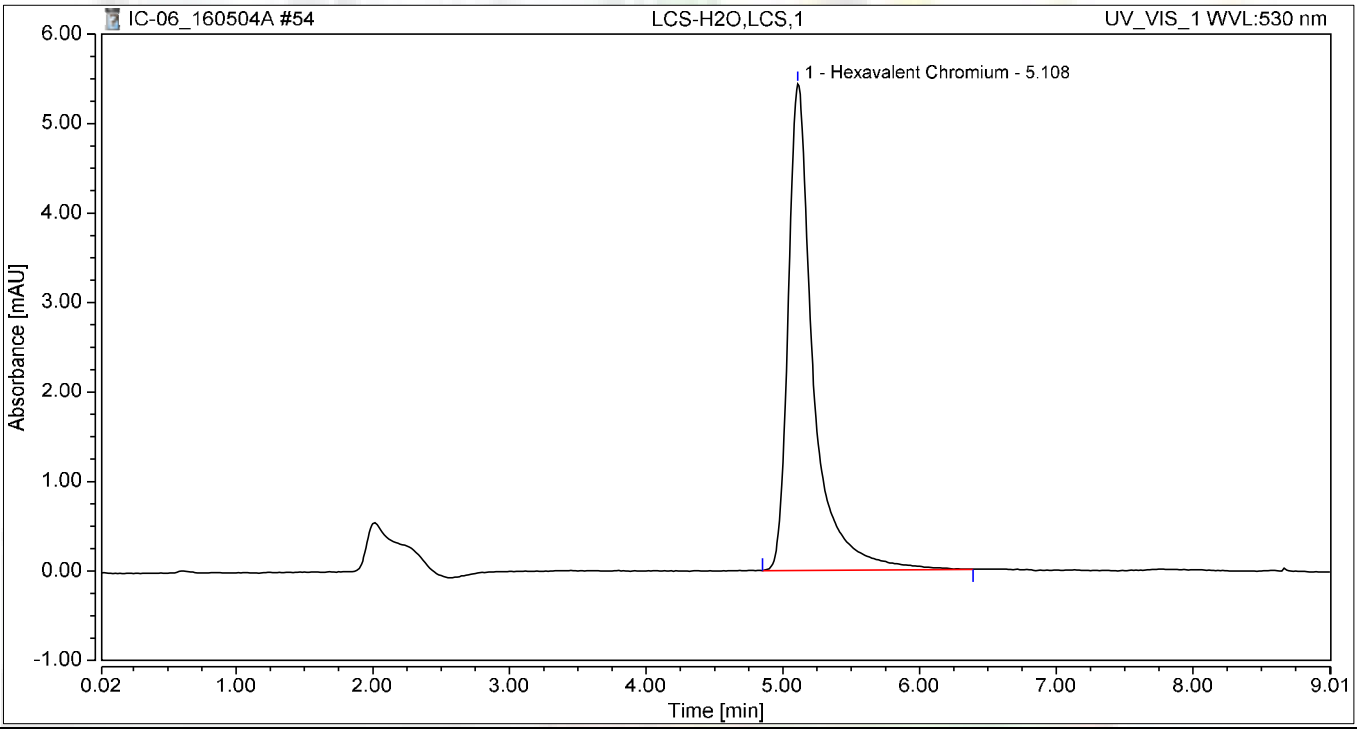
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.009	0.039	100.00	100.00	0.0203
Total:			**0.009**	**0.039**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 15:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

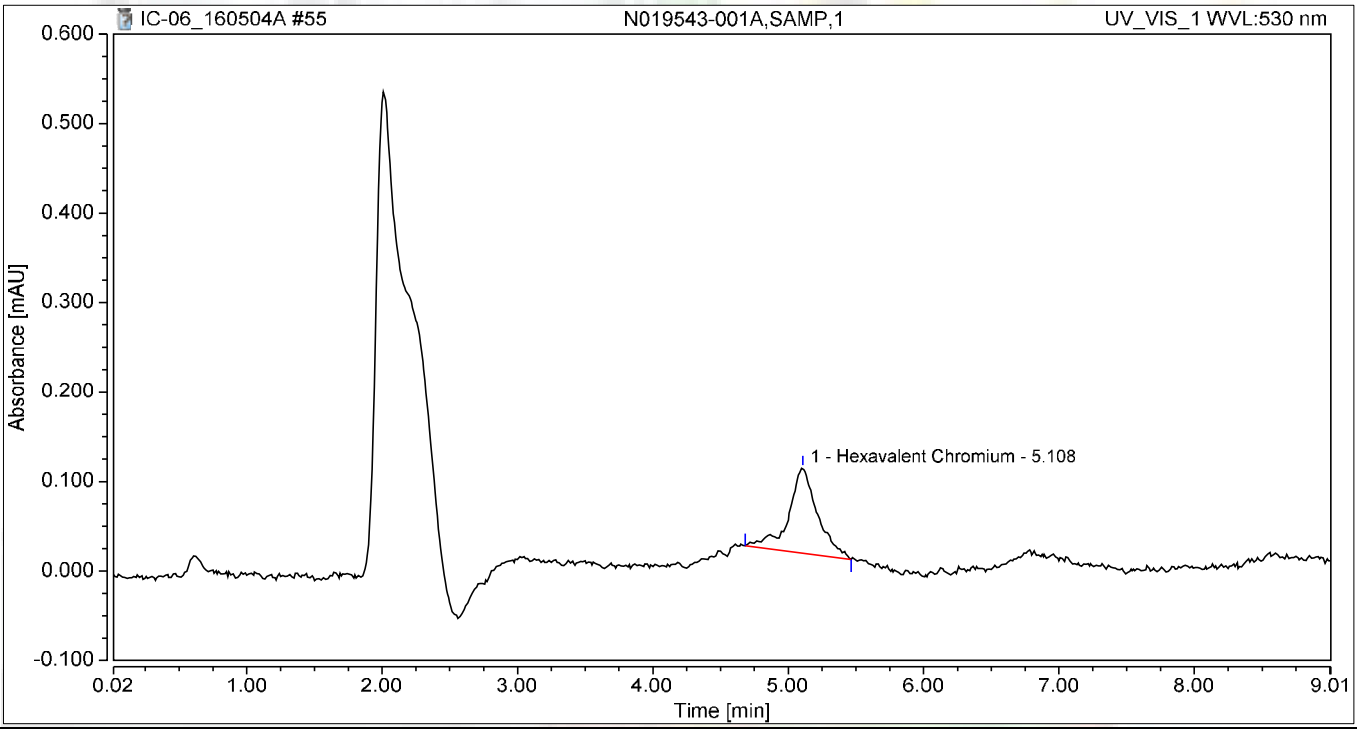
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.158	5.436	100.00	100.00	4.9402
Total:			**1.158**	**5.436**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

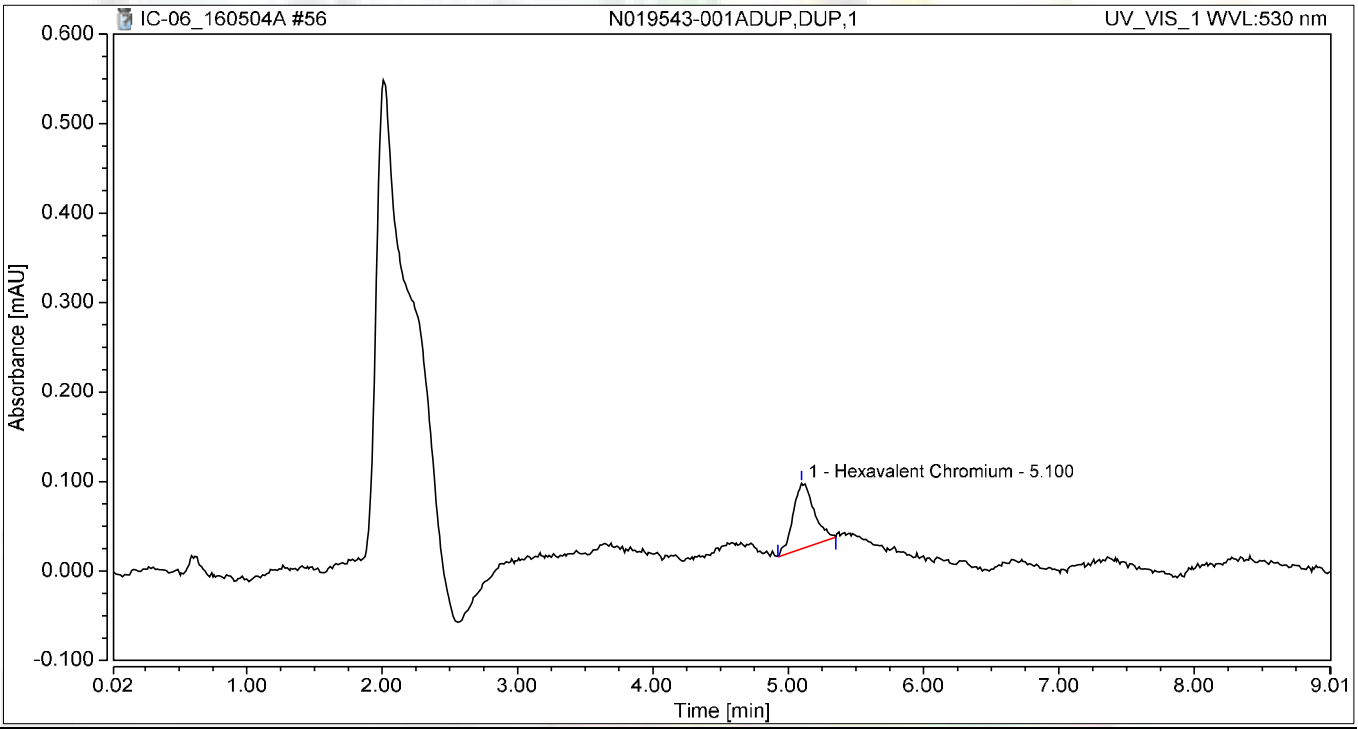
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.024	0.095	100.00	100.00	0.0841
Total:			**0.024**	**0.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-001ADUP,DUP,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

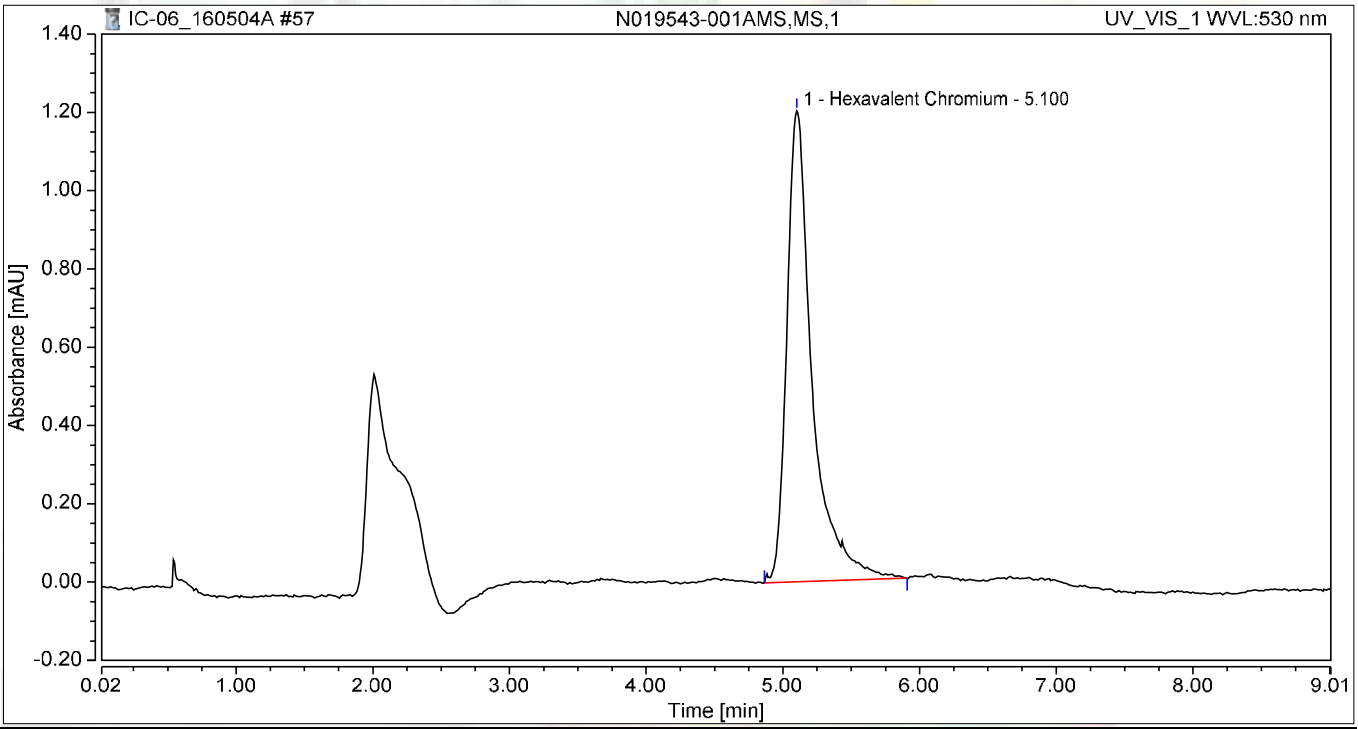
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.013	0.074	100.00	100.00	0.0389
Total:			**0.013**	**0.074**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

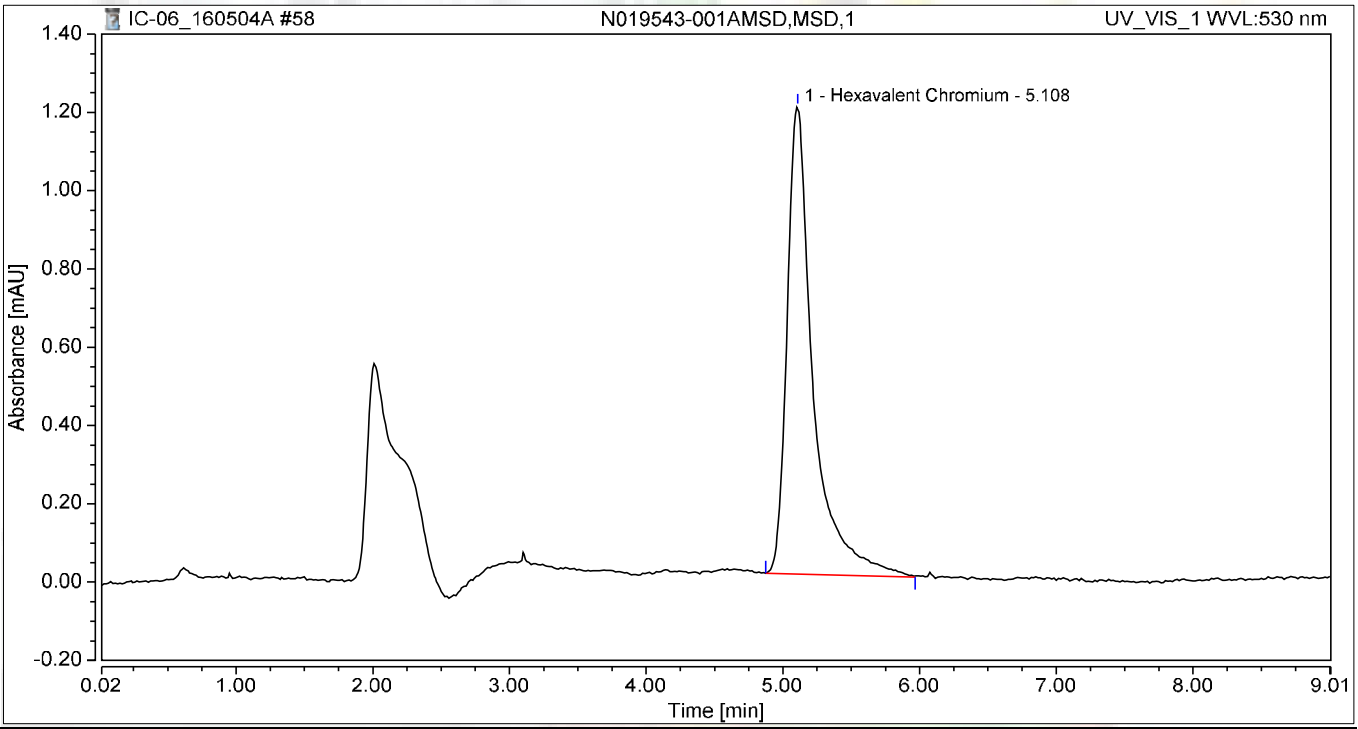
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.259	1.203	100.00	100.00	1.0894
Total:			**0.259**	**1.203**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-001AMSD,MSD,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

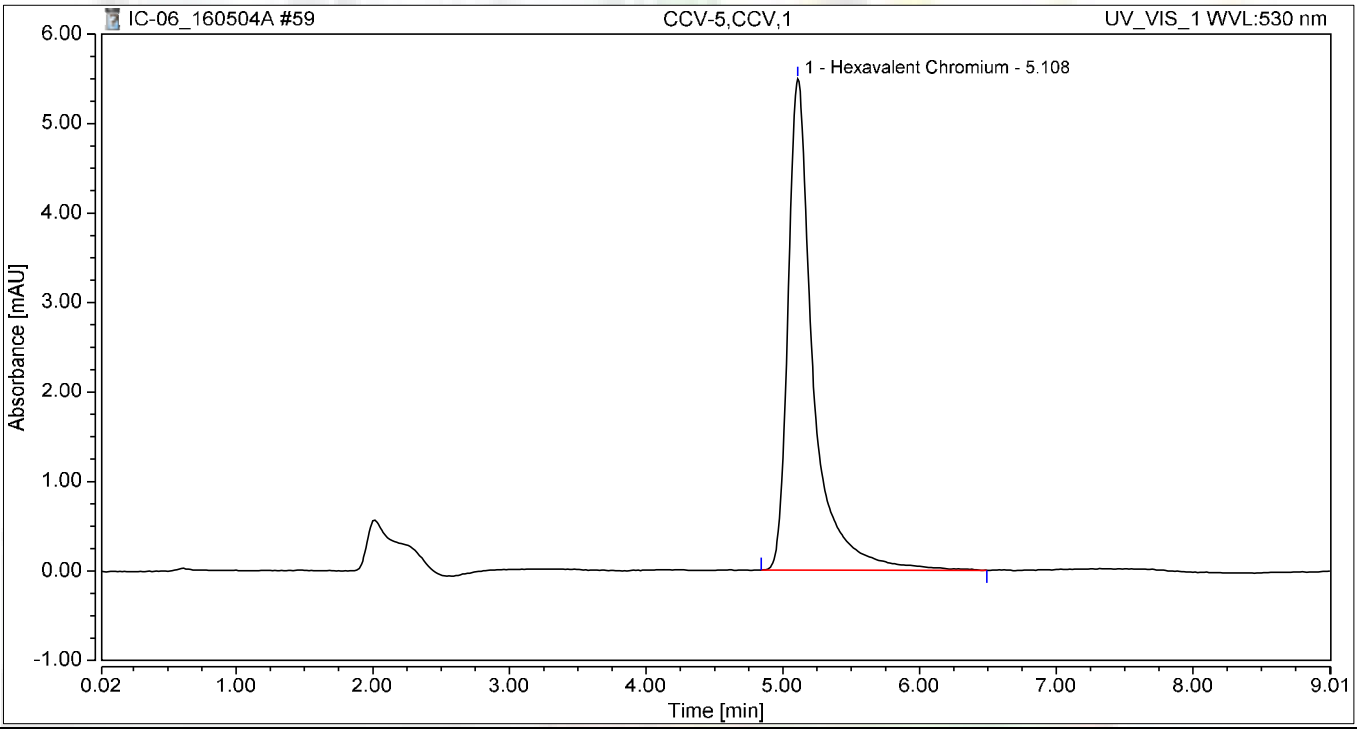
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.263	1.195	100.00	100.00	1.1084
Total:			**0.263**	**1.195**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

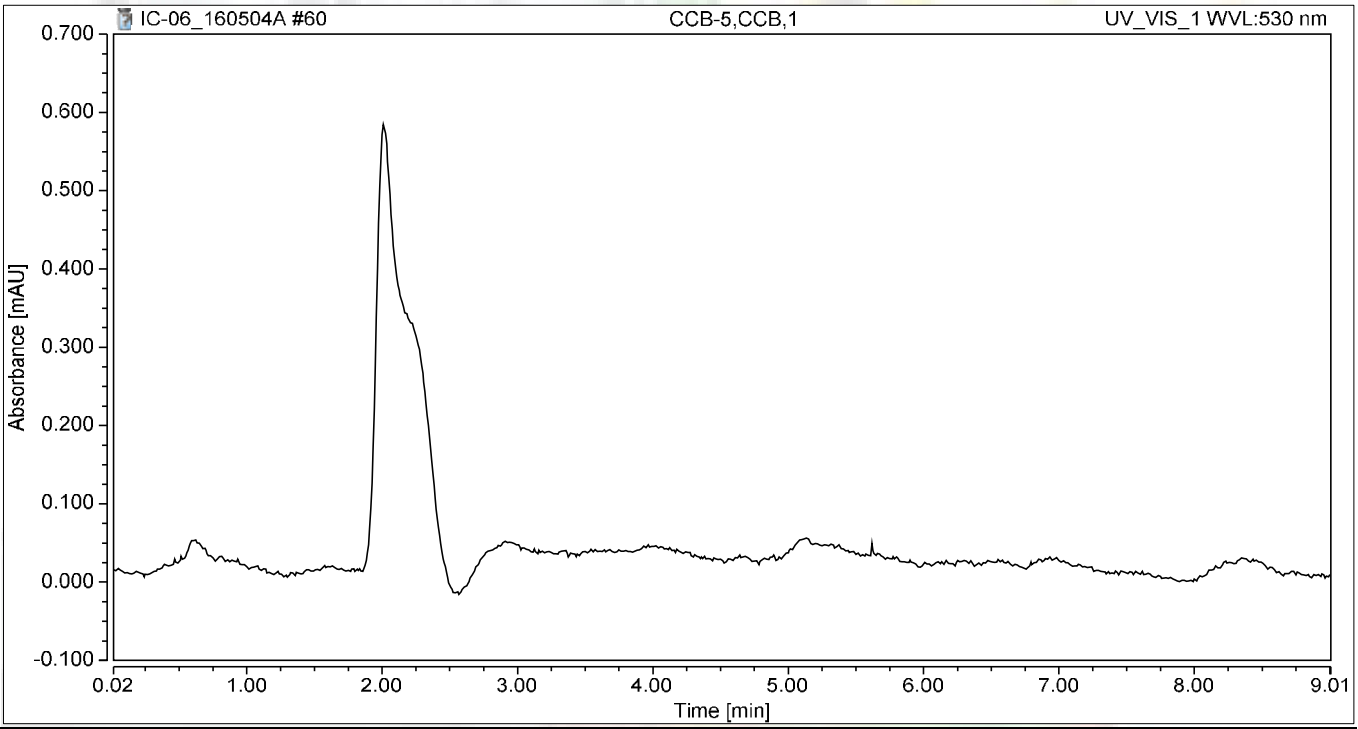
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.173	5.490	100.00	100.00	5.0039
Total:			**1.173**	**5.490**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

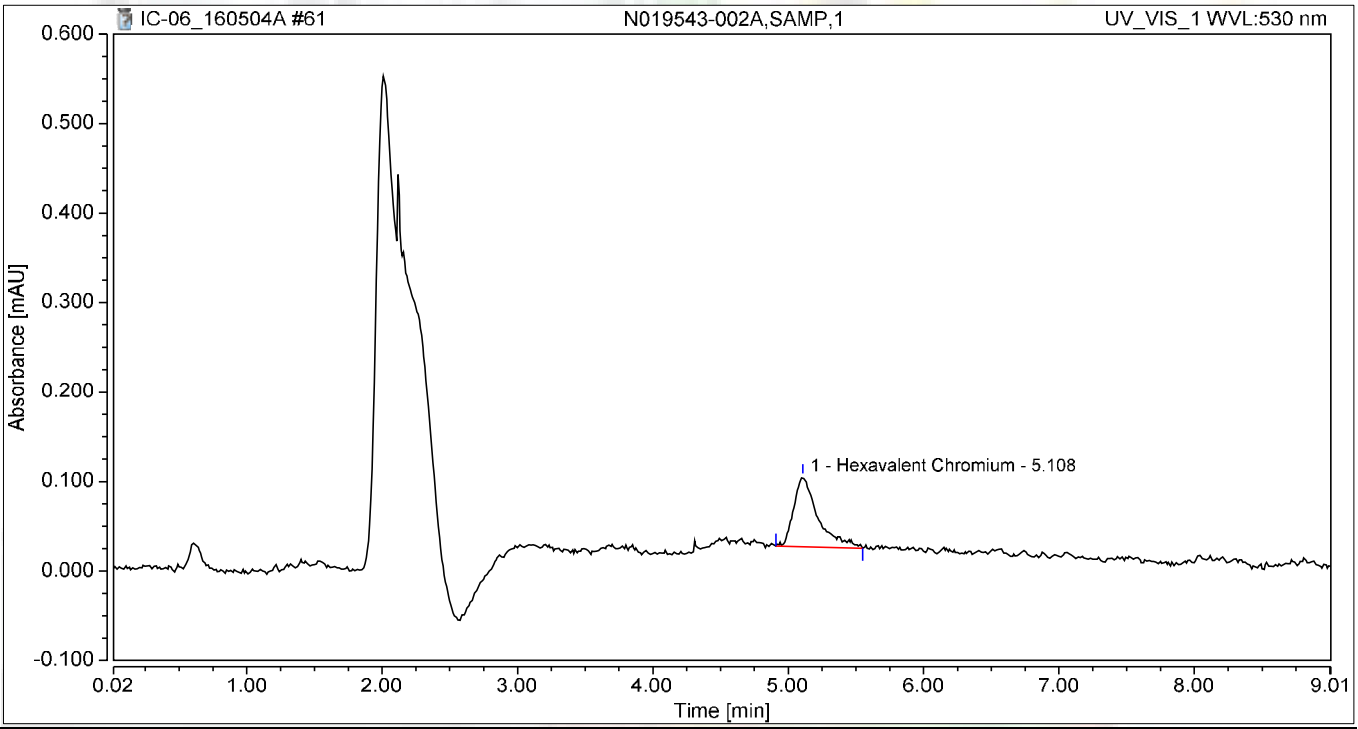
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-002A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

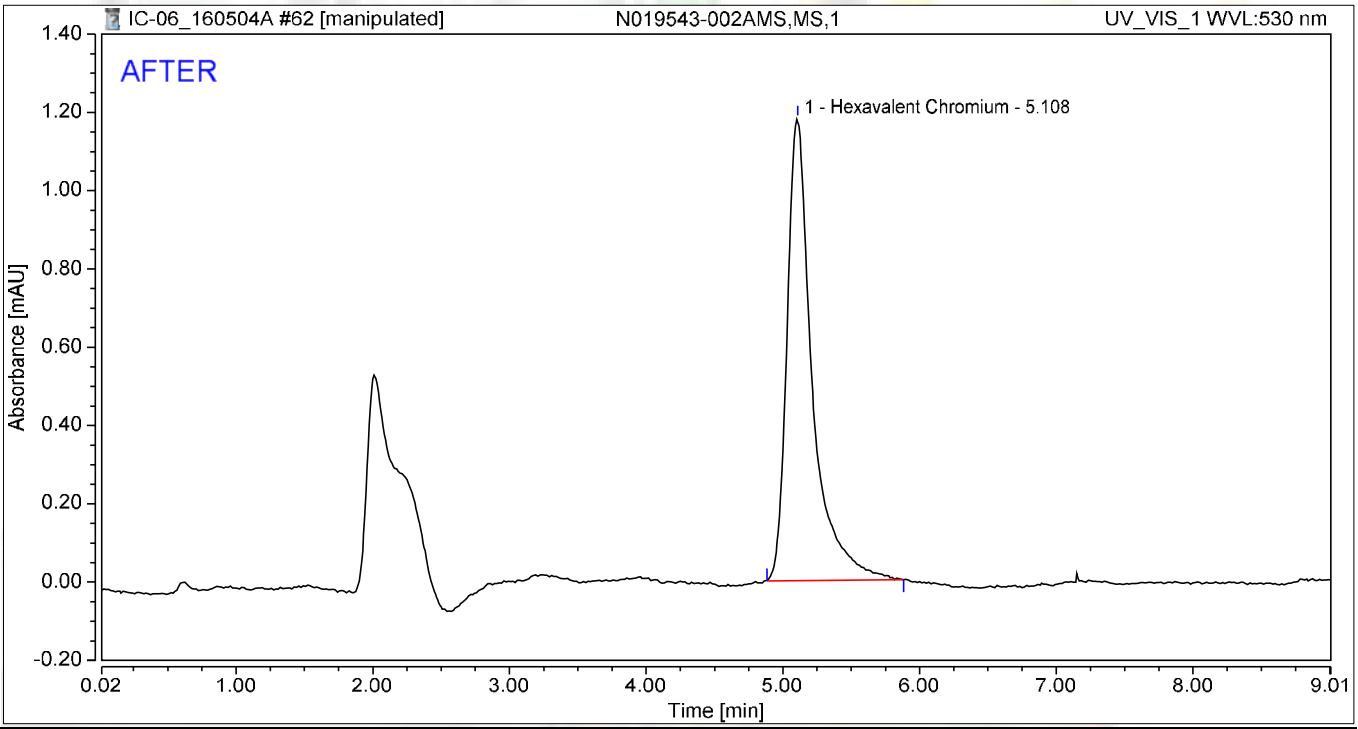
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.016	0.079	100.00	100.00	0.0523
Total:			**0.016**	**0.079**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-002AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.252	1.180	100.00	100.00	1.0612
Total:			**0.252**	**1.180**	**100.00**	**100.00**	

5/10/2016

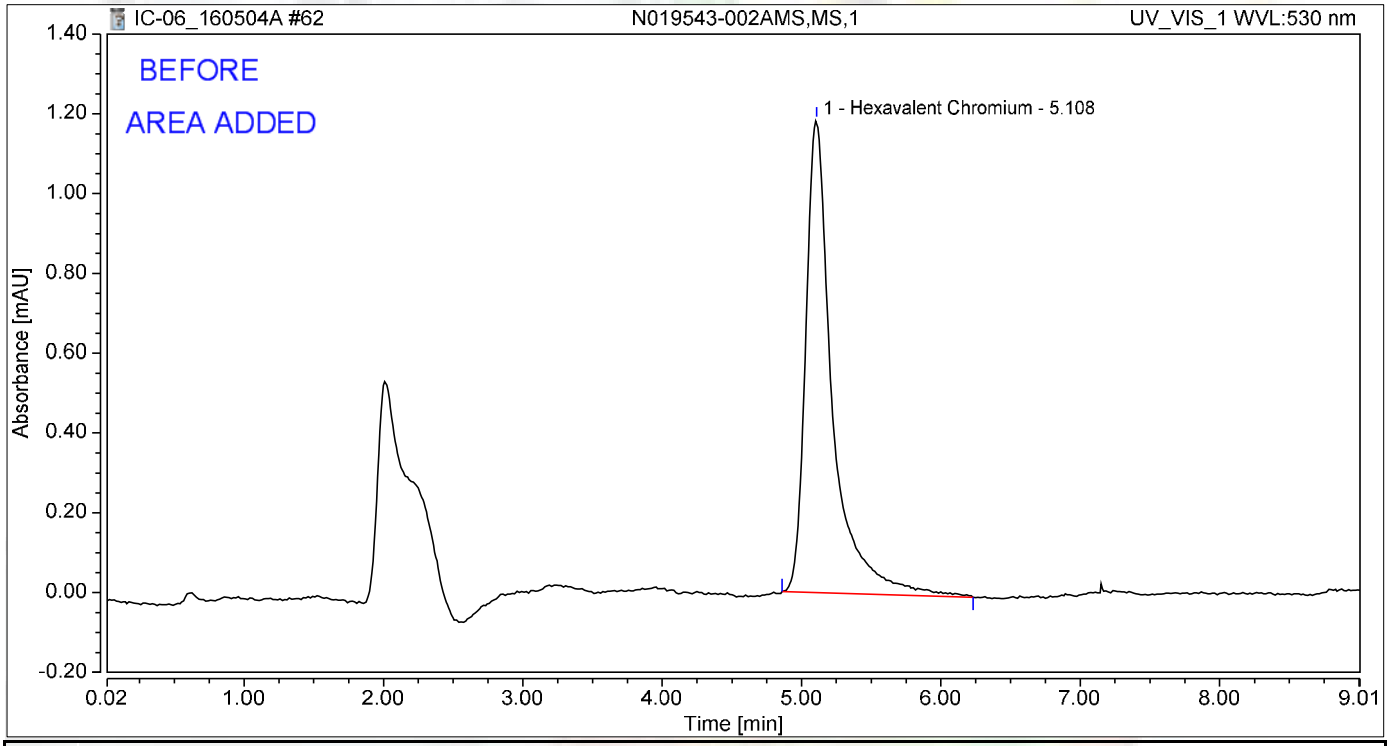
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-002AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.263	1.185	100.00	100.00	1.1080
Total:			**0.263**	**1.185**	**100.00**	**100.00**	

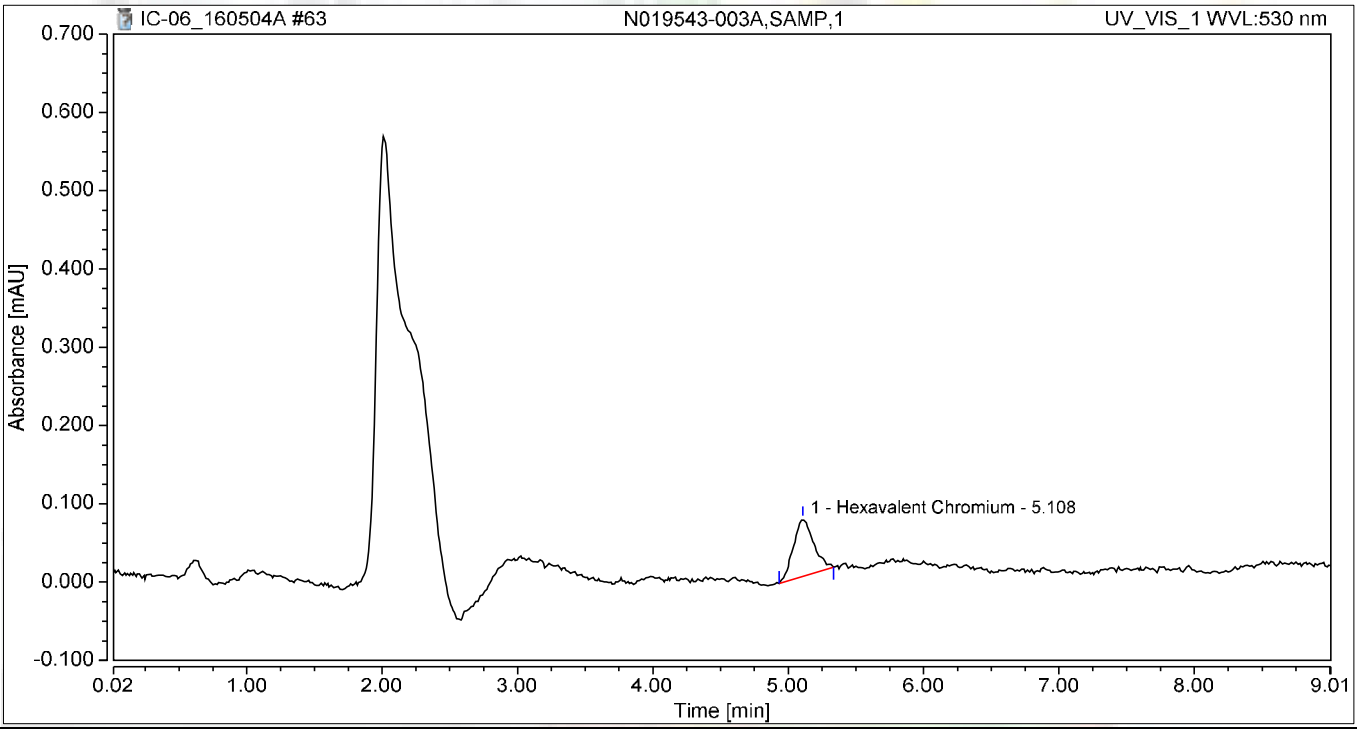
5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

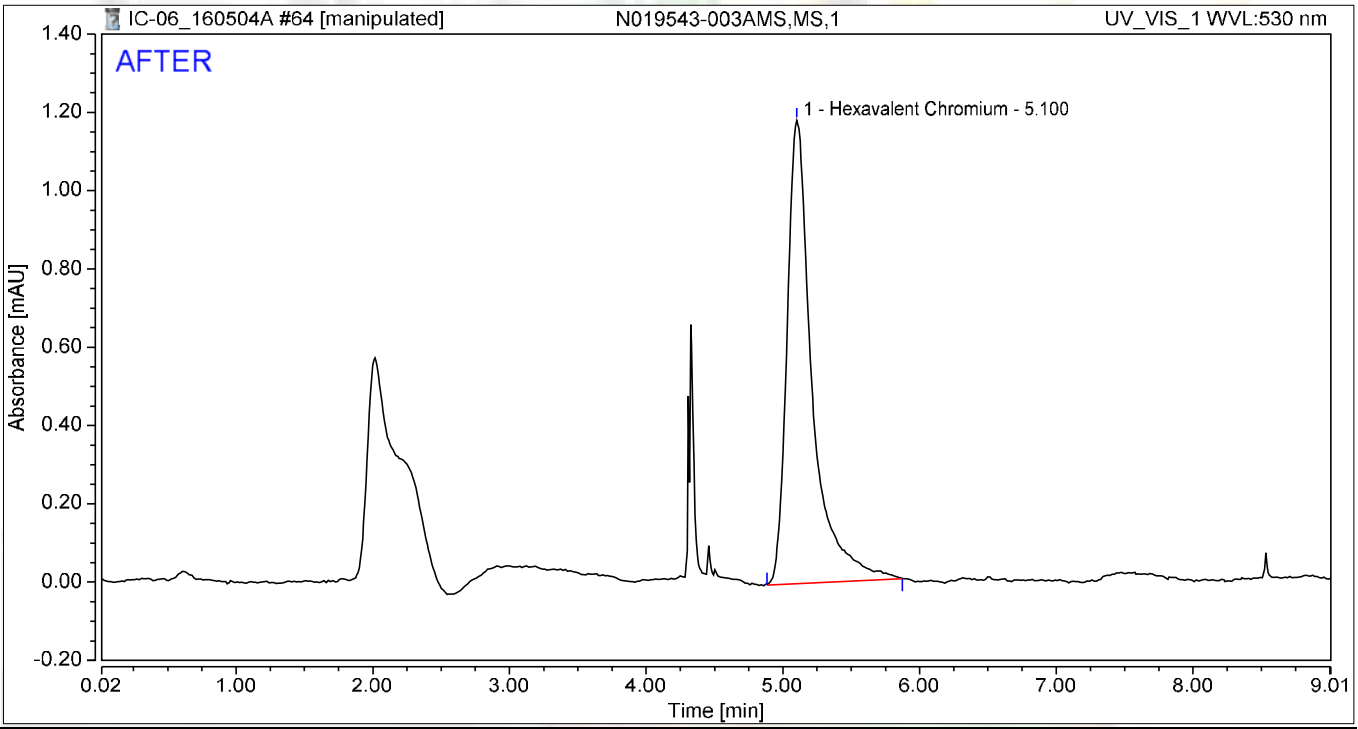
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.013	0.074	100.00	100.00	0.0365
Total:			**0.013**	**0.074**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-003AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.253	1.183	100.00	100.00	1.0636
Total:			**0.253**	**1.183**	**100.00**	**100.00**	

5/10/2016

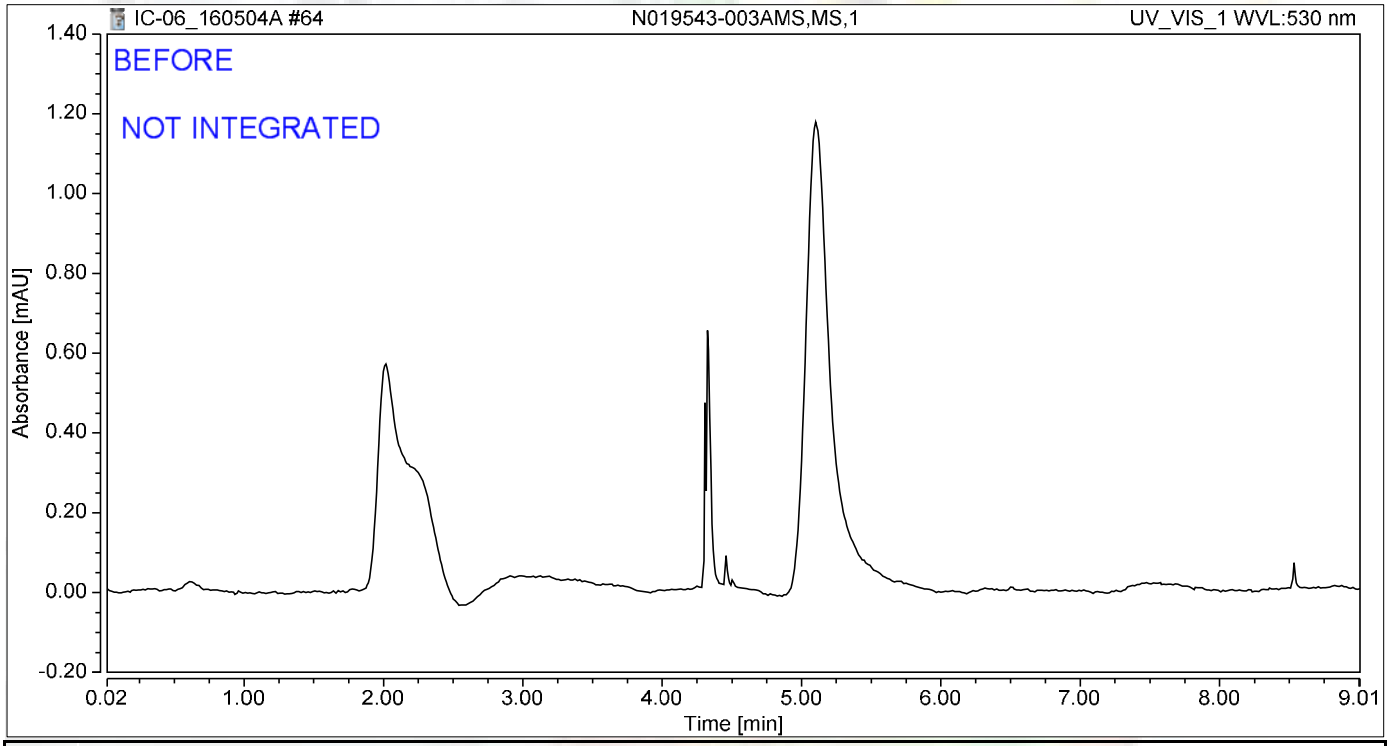
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-003AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

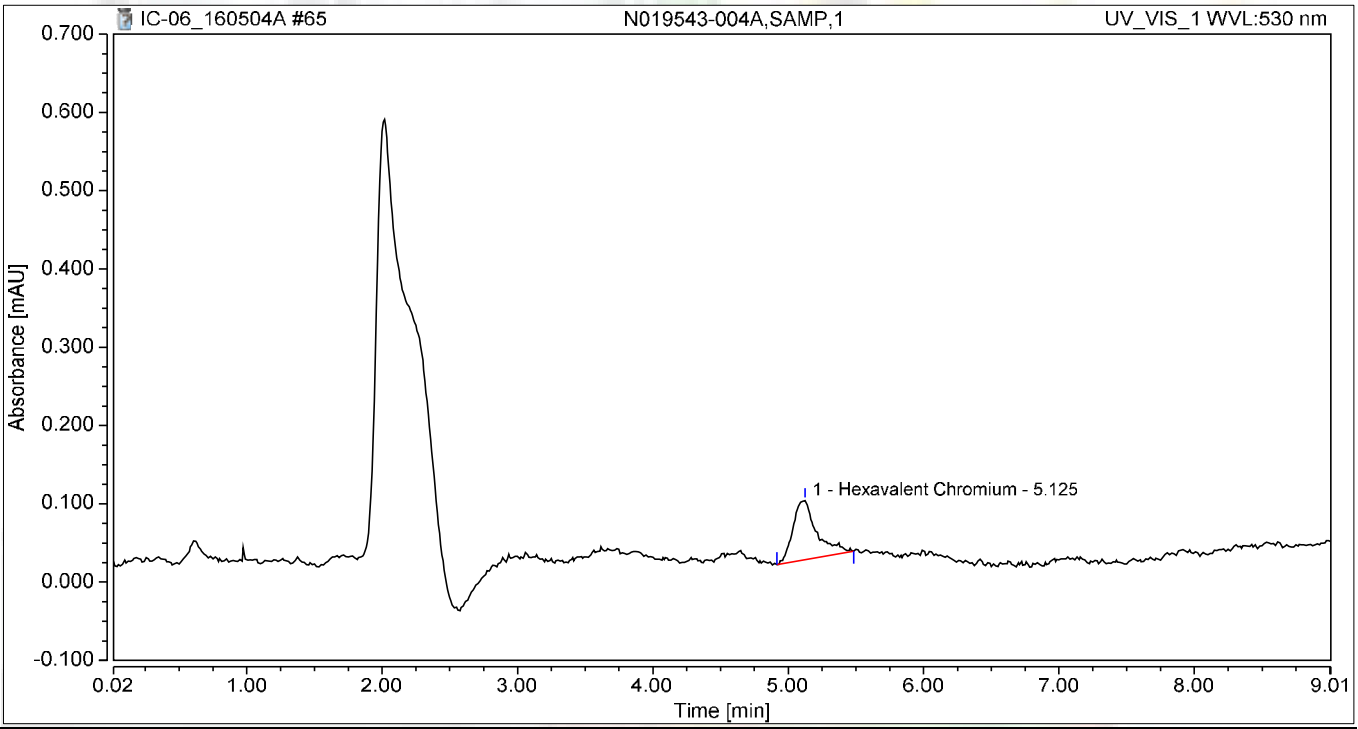
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-004A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

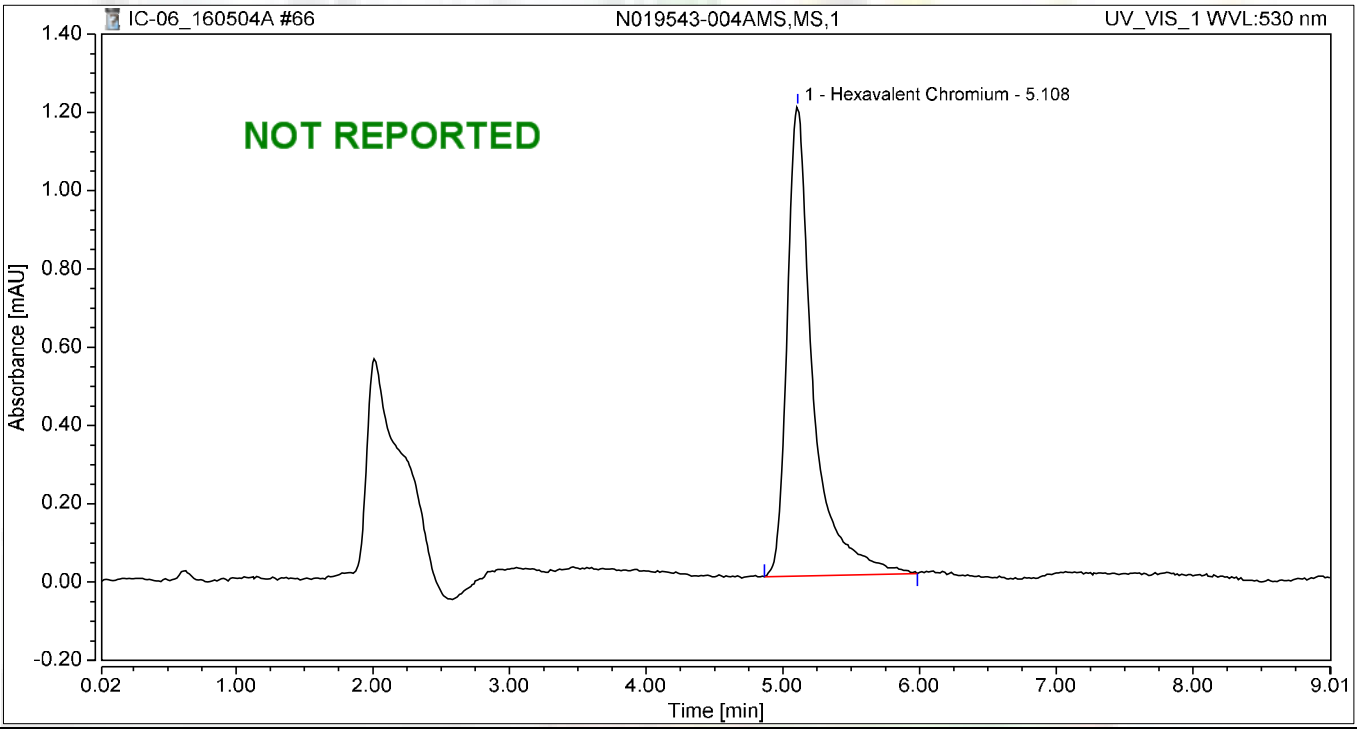
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.125	0.015	0.076	100.00	100.00	0.0482
Total:			**0.015**	**0.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-004AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

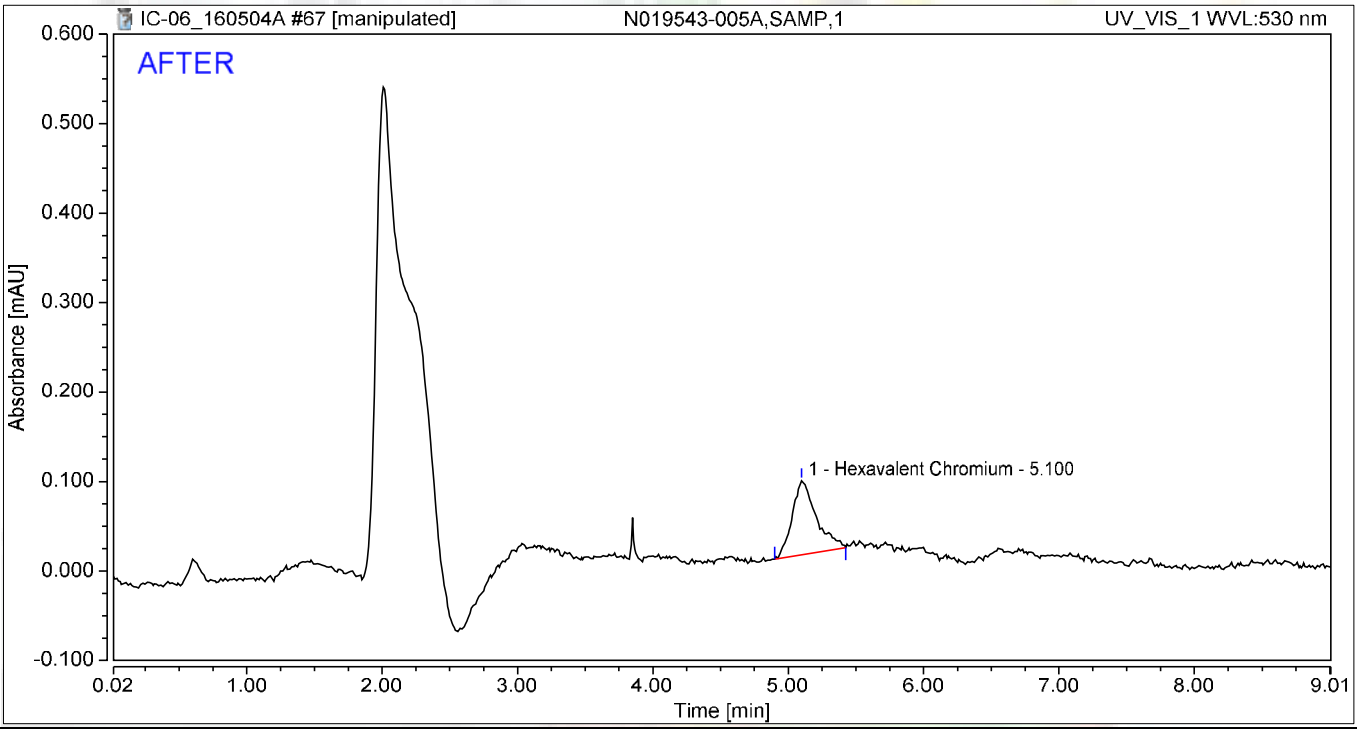
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.263	1.200	100.00	100.00	1.1074
Total:			**0.263**	**1.200**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-005A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.017	0.083	100.00	100.00	0.0555
Total:			**0.017**	**0.083**	**100.00**	**100.00**	

jas 5/10/2016

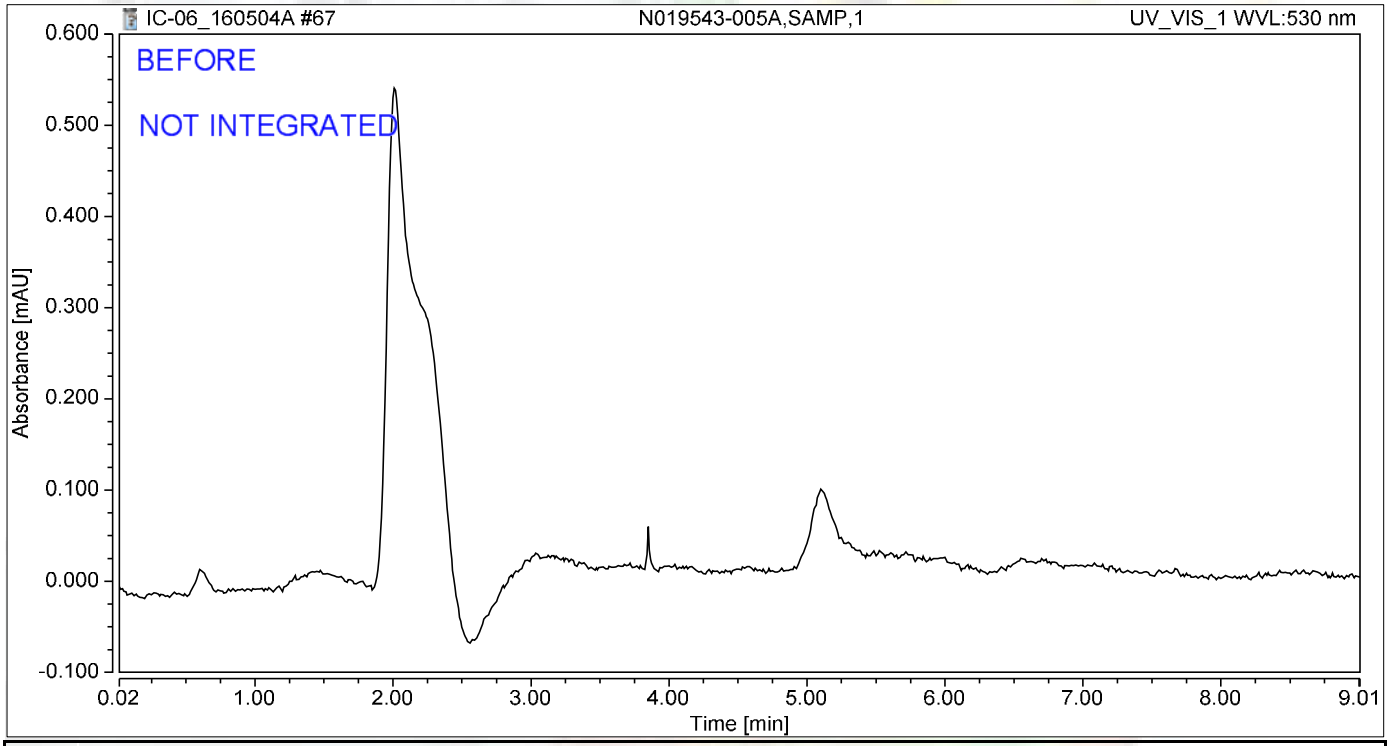
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-005A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

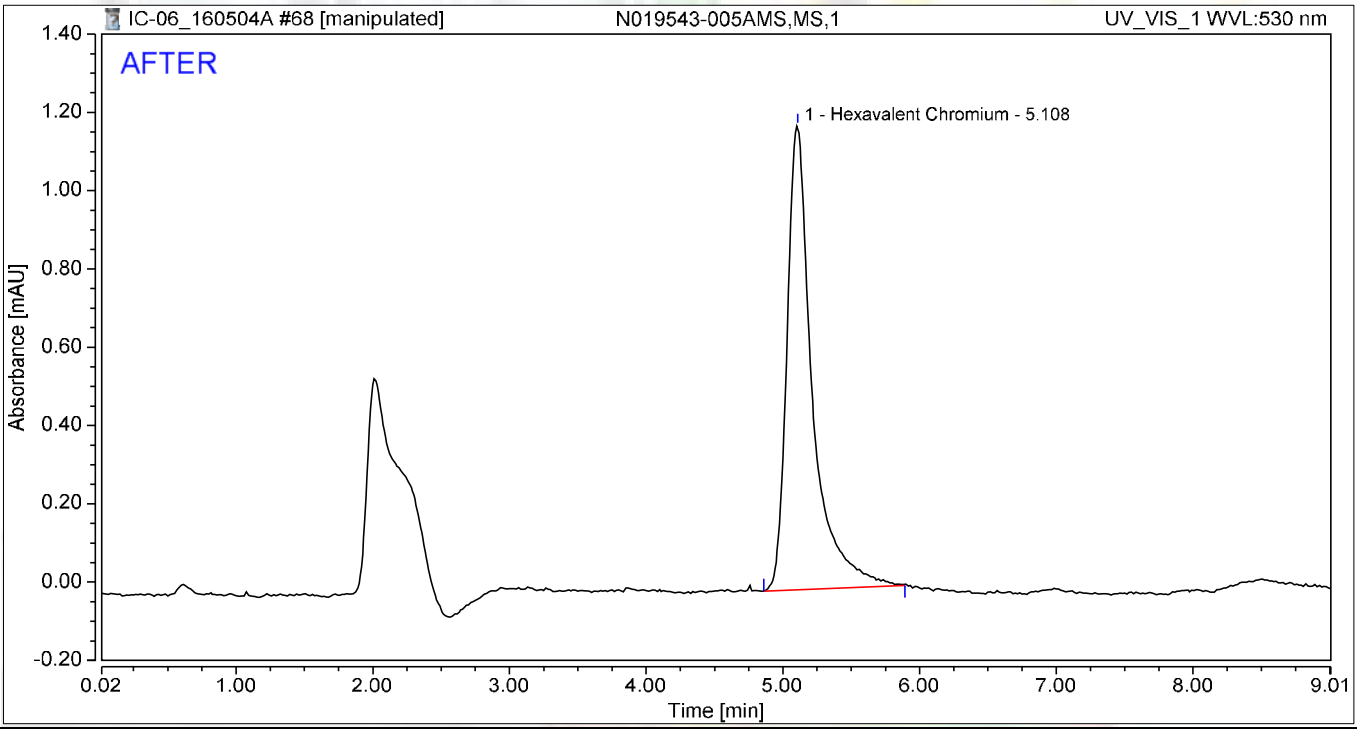
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-005AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.255	1.185	100.00	100.00	1.0743
Total:			**0.255**	**1.185**	**100.00**	**100.00**	

5/10/2016

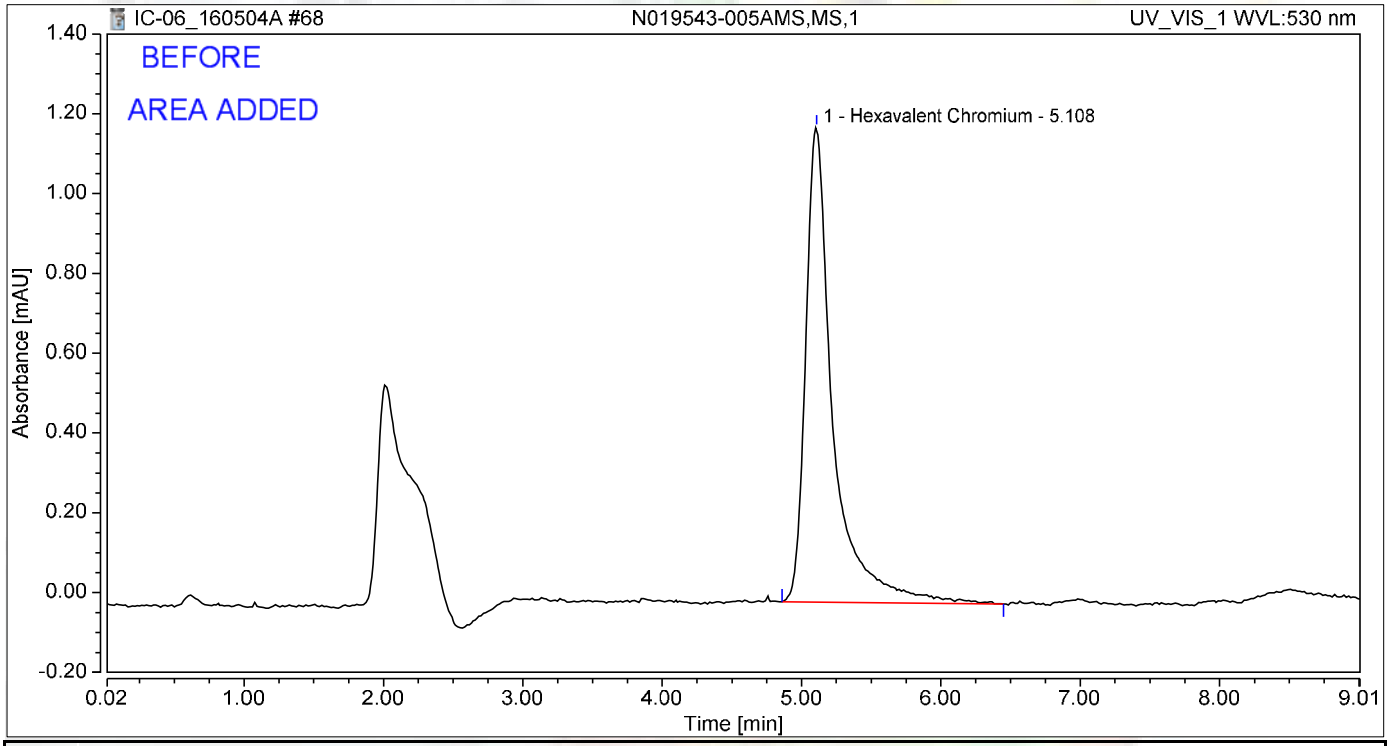
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-005AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.269	1.189	100.00	100.00	1.1356
Total:			**0.269**	**1.189**	**100.00**	**100.00**	

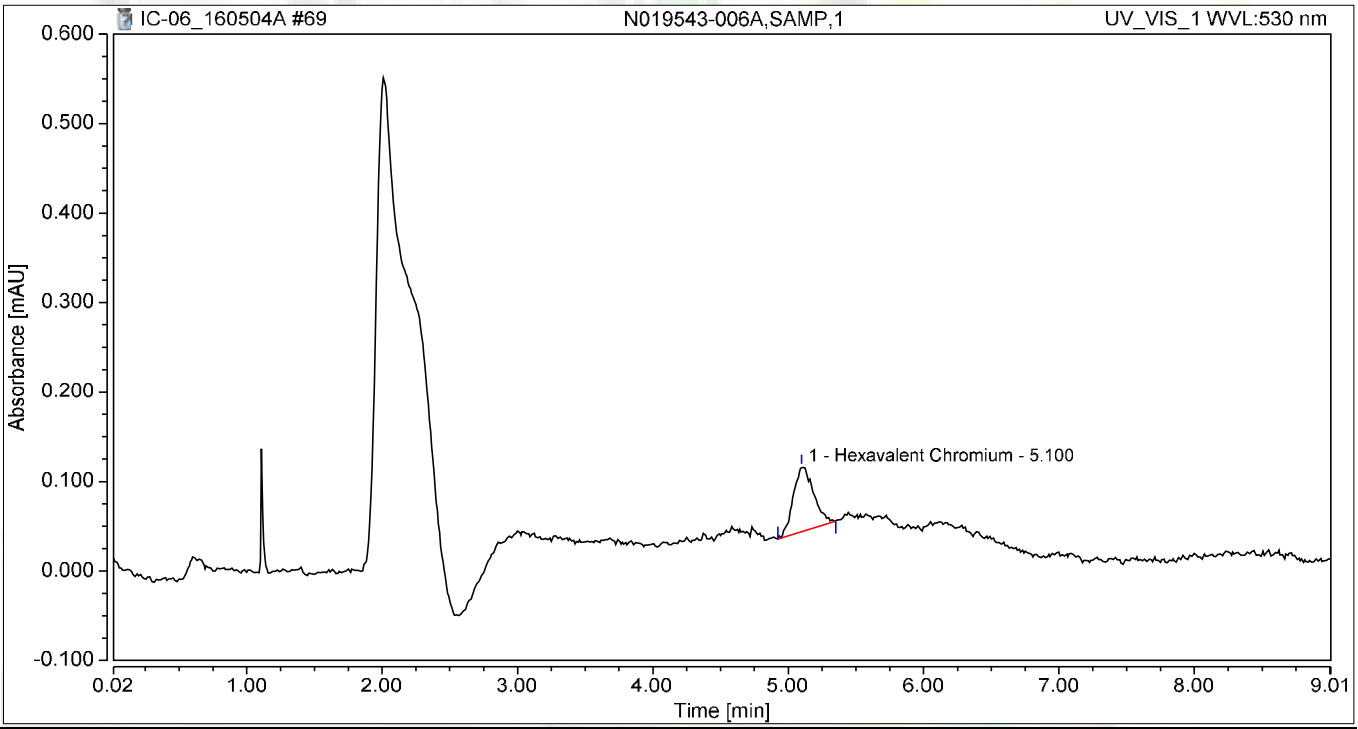
5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-006A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

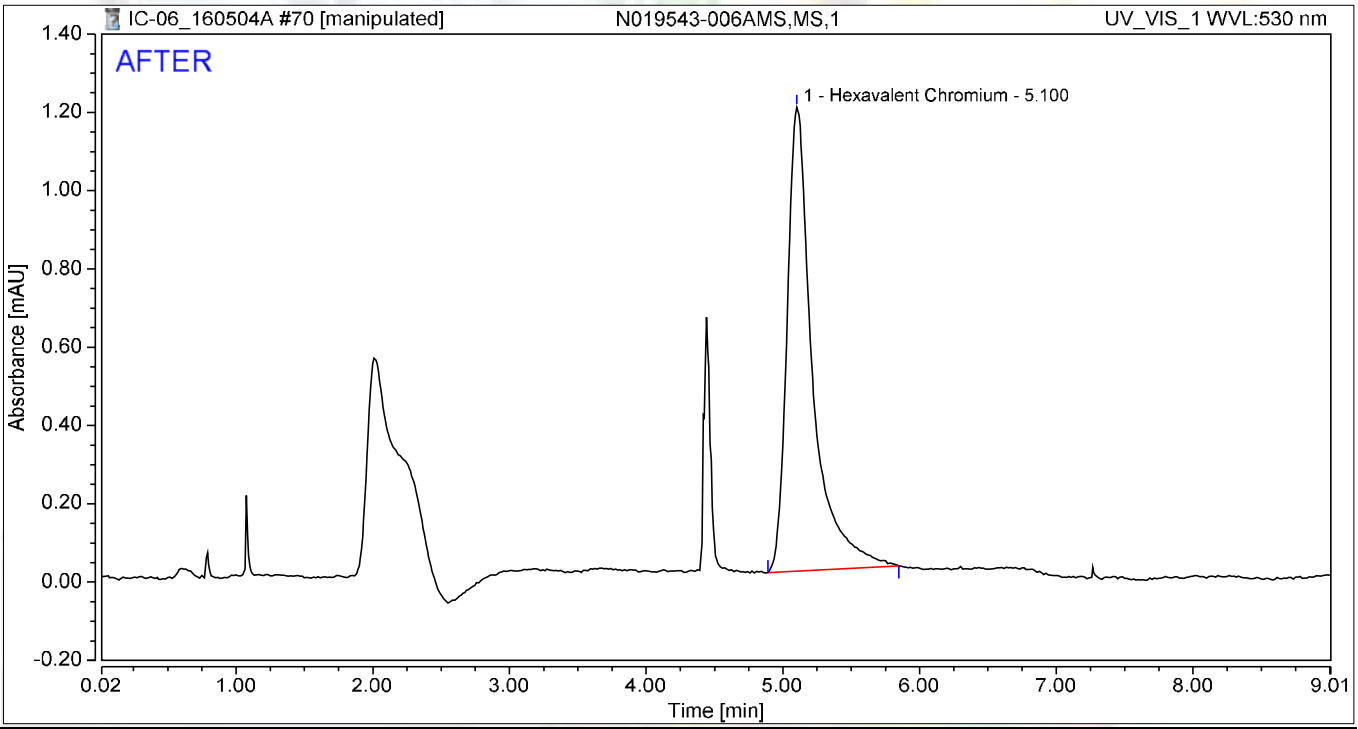
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.013	0.072	100.00	100.00	0.0365
Total:			**0.013**	**0.072**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-006AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.257	1.185	100.00	100.00	1.0820
Total:			**0.257**	**1.185**	**100.00**	**100.00**	

jas 5/10/2016

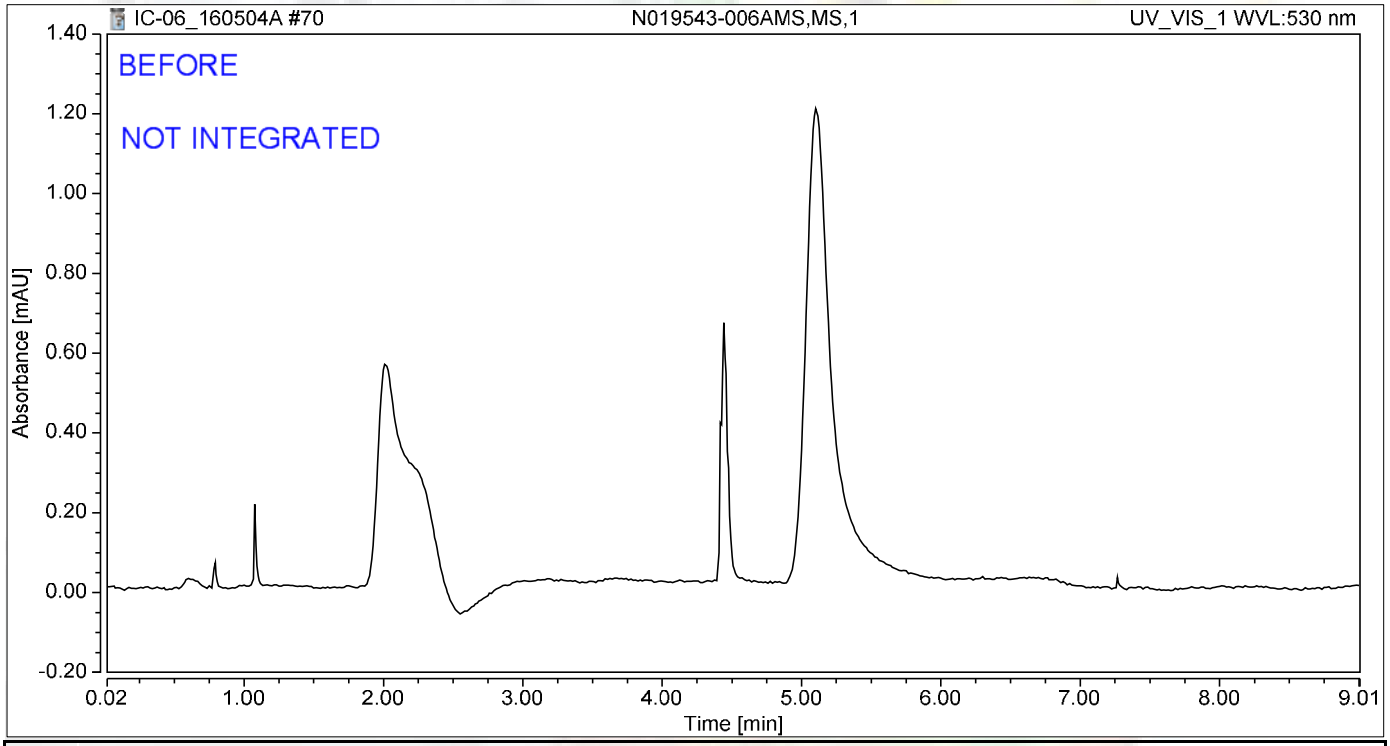
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-006AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

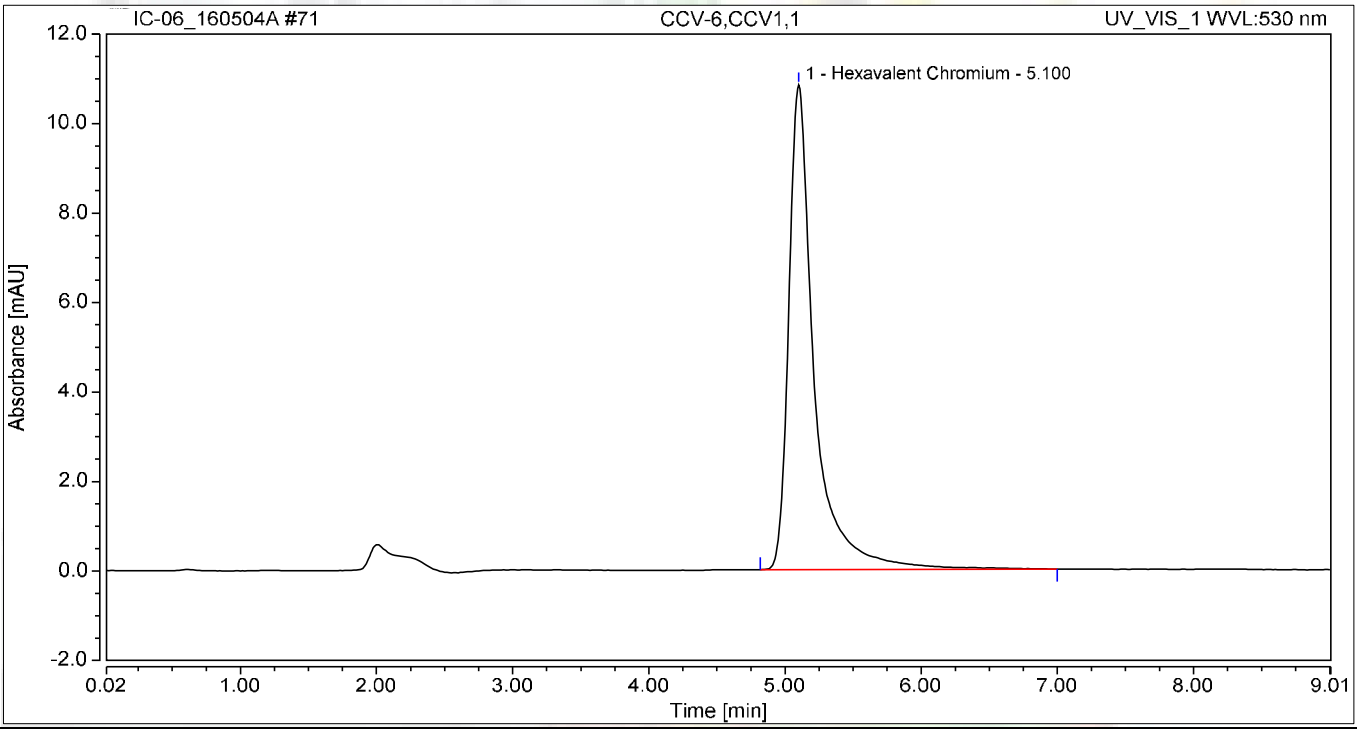
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

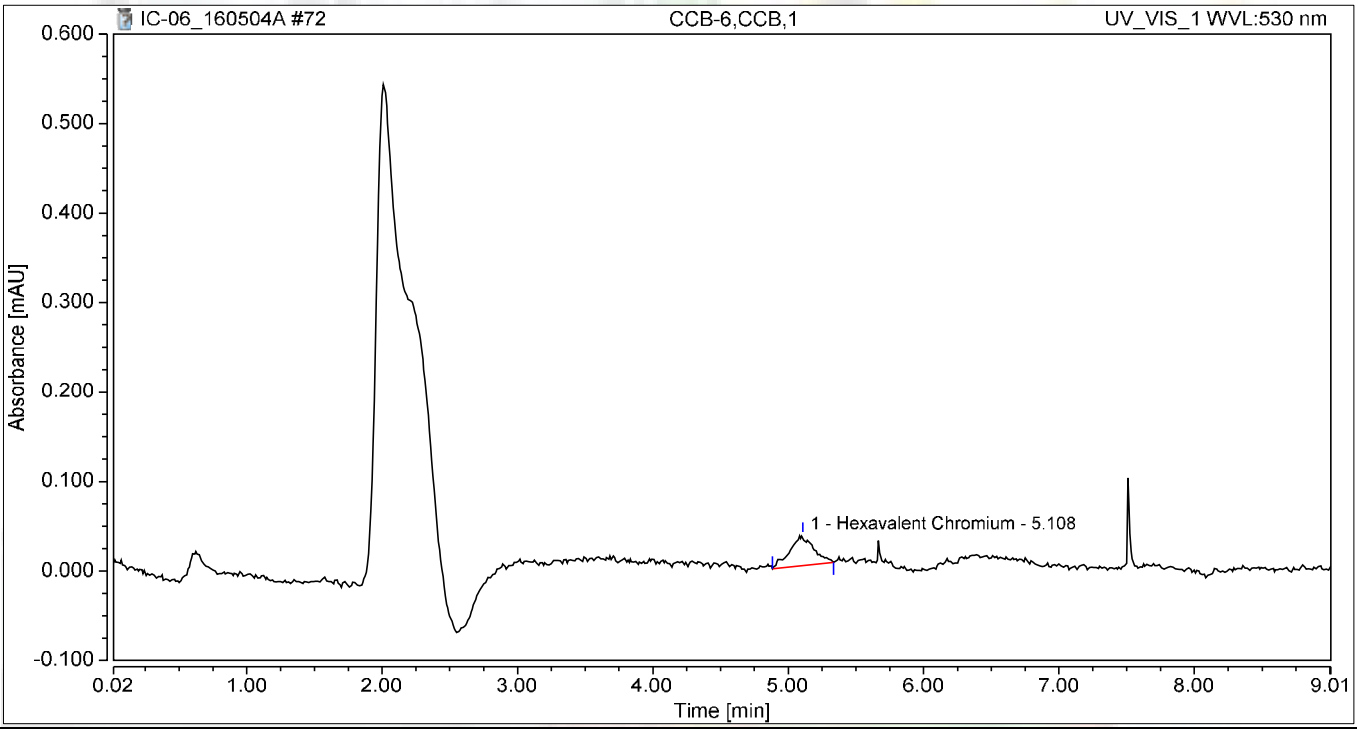
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.366	10.839	100.00	100.00	10.1099
Total:			**2.366**	**10.839**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

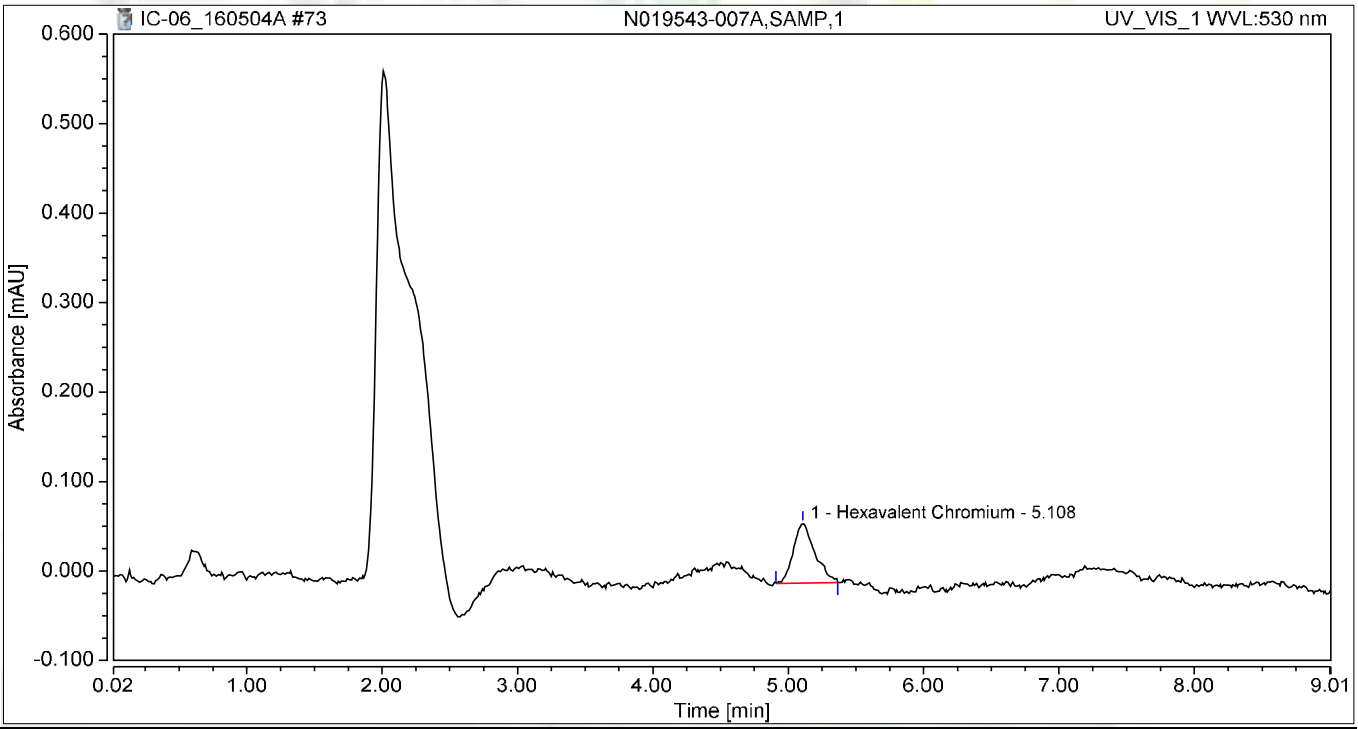
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.007	0.034	100.00	100.00	0.0111
Total:			**0.007**	**0.034**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-007A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

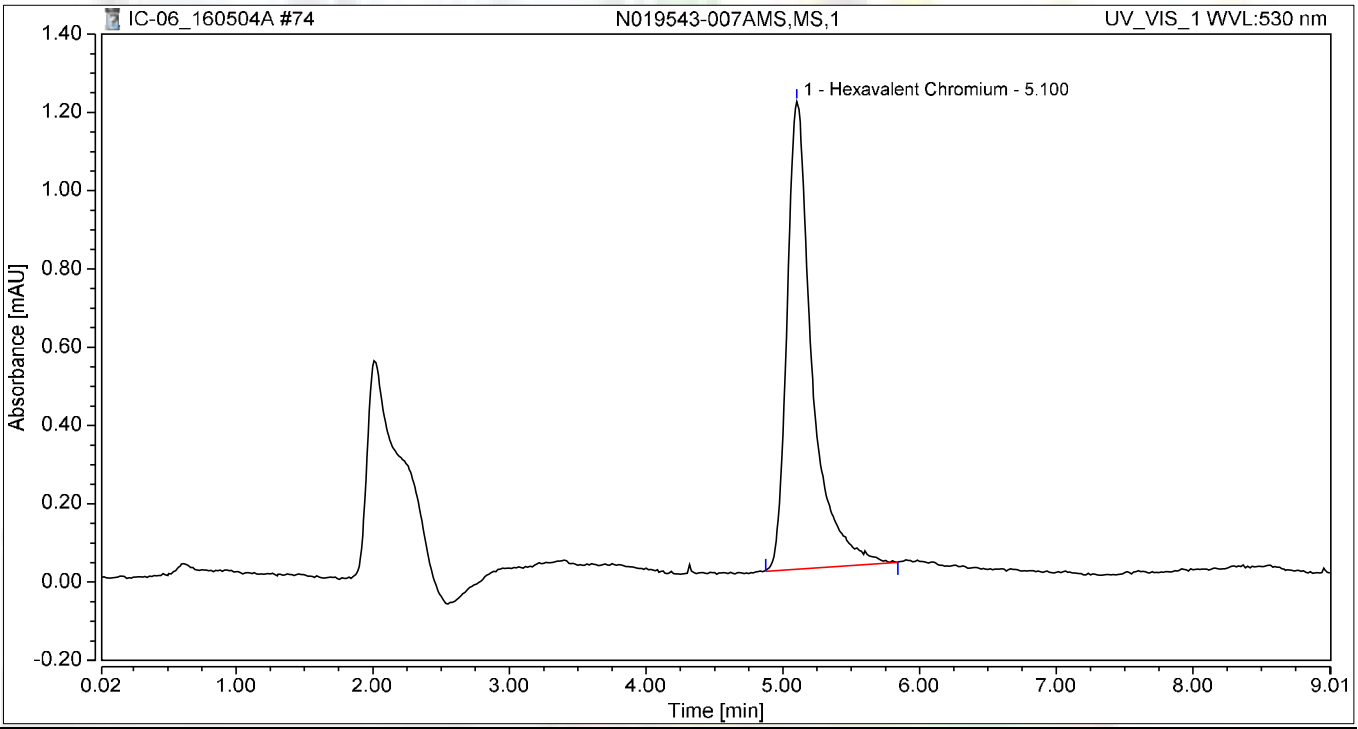
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.012	0.067	100.00	100.00	0.0354
Total:			**0.012**	**0.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-007AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

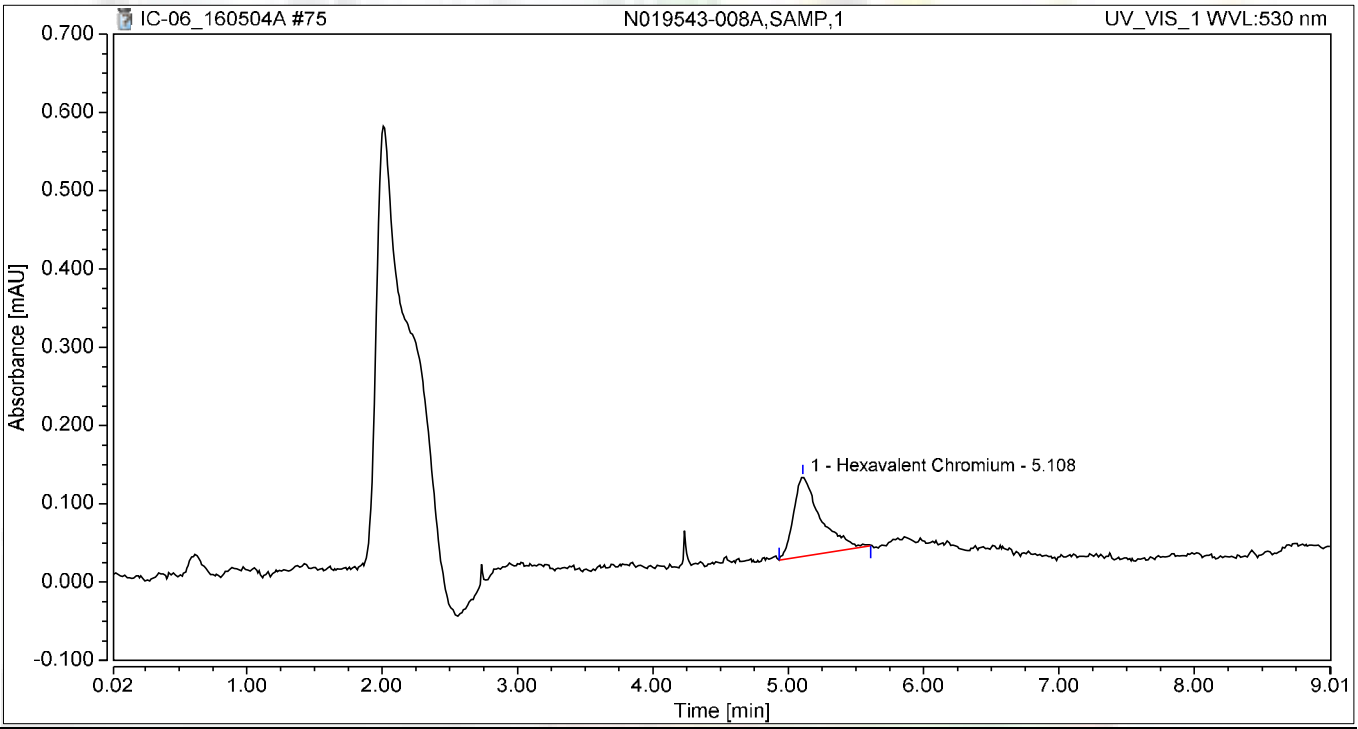
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.254	1.195	100.00	100.00	1.0701
Total:			**0.254**	**1.195**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-008A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

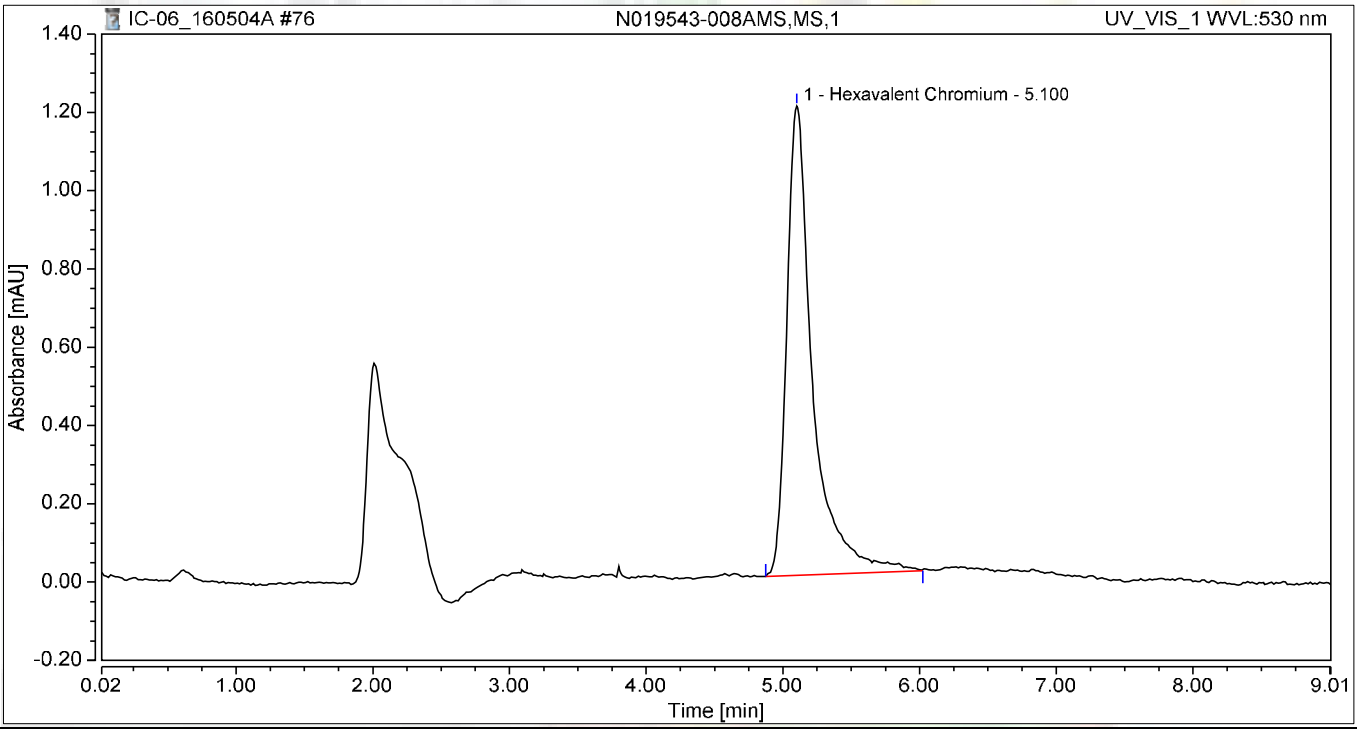
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.024	0.101	100.00	100.00	0.0835
Total:			**0.024**	**0.101**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-008AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

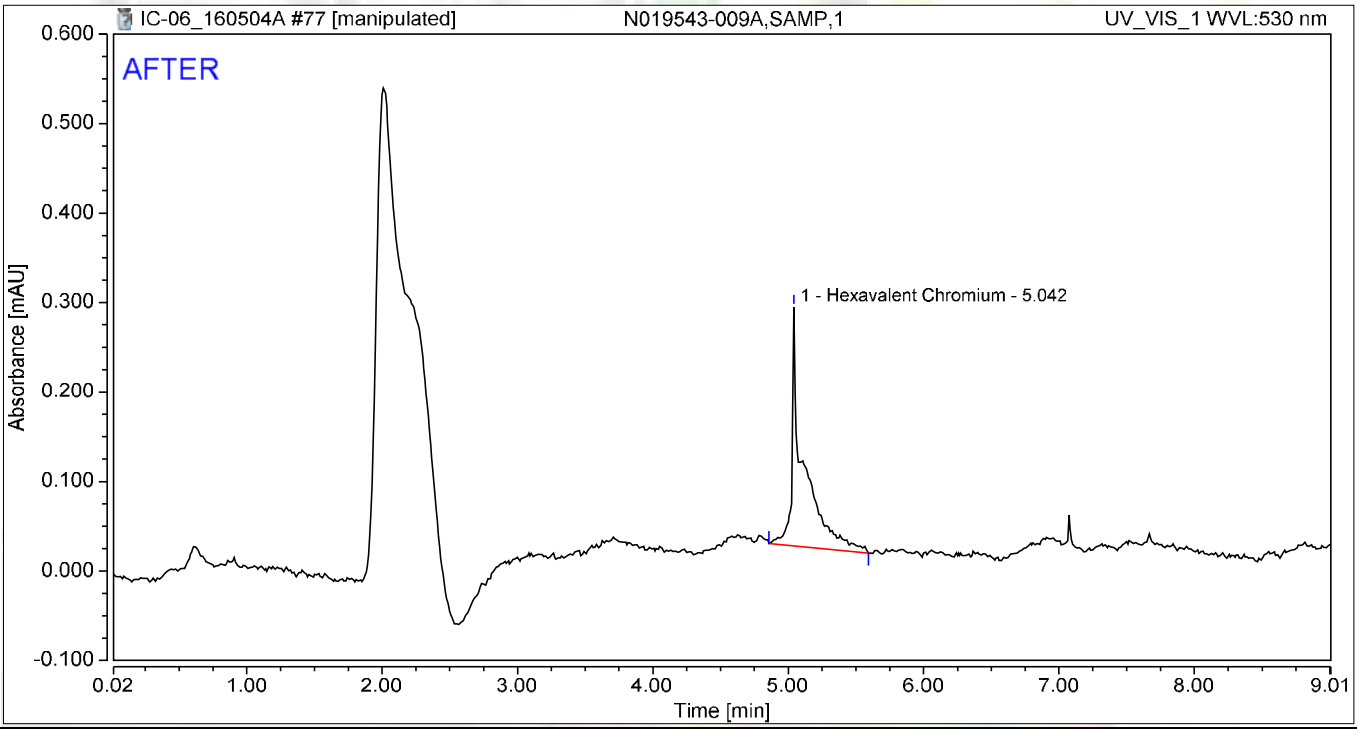
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.264	1.198	100.00	100.00	1.1125
Total:			**0.264**	**1.198**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-009A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.042	0.026	0.267	100.00	100.00	0.0942
Total:			**0.026**	**0.267**	**100.00**	**100.00**	

5/10/2016

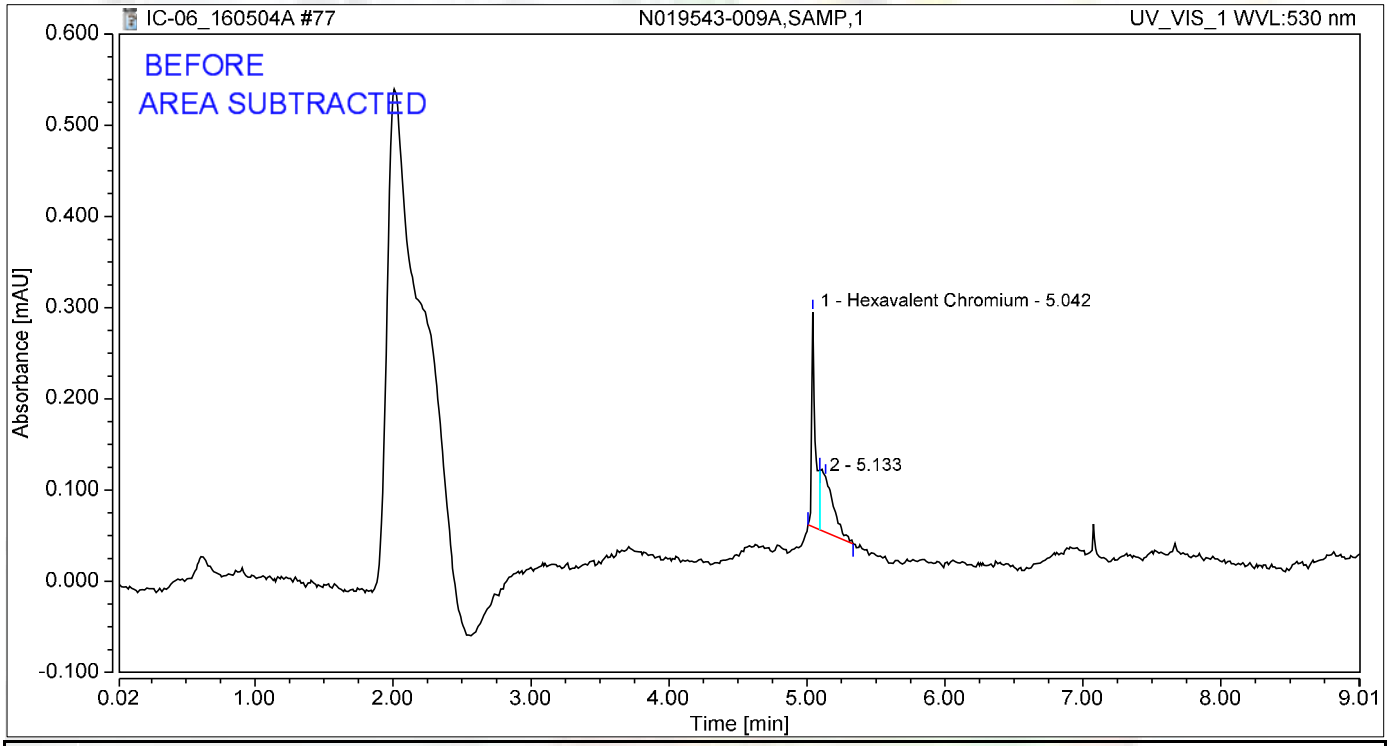
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-009A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.042	0.007	0.235	49.47	79.45	0.0120
2		5.133	0.007	0.061	50.53	20.55	n.a.
Total:			**0.014**	**0.296**	**100.00**	**100.00**	

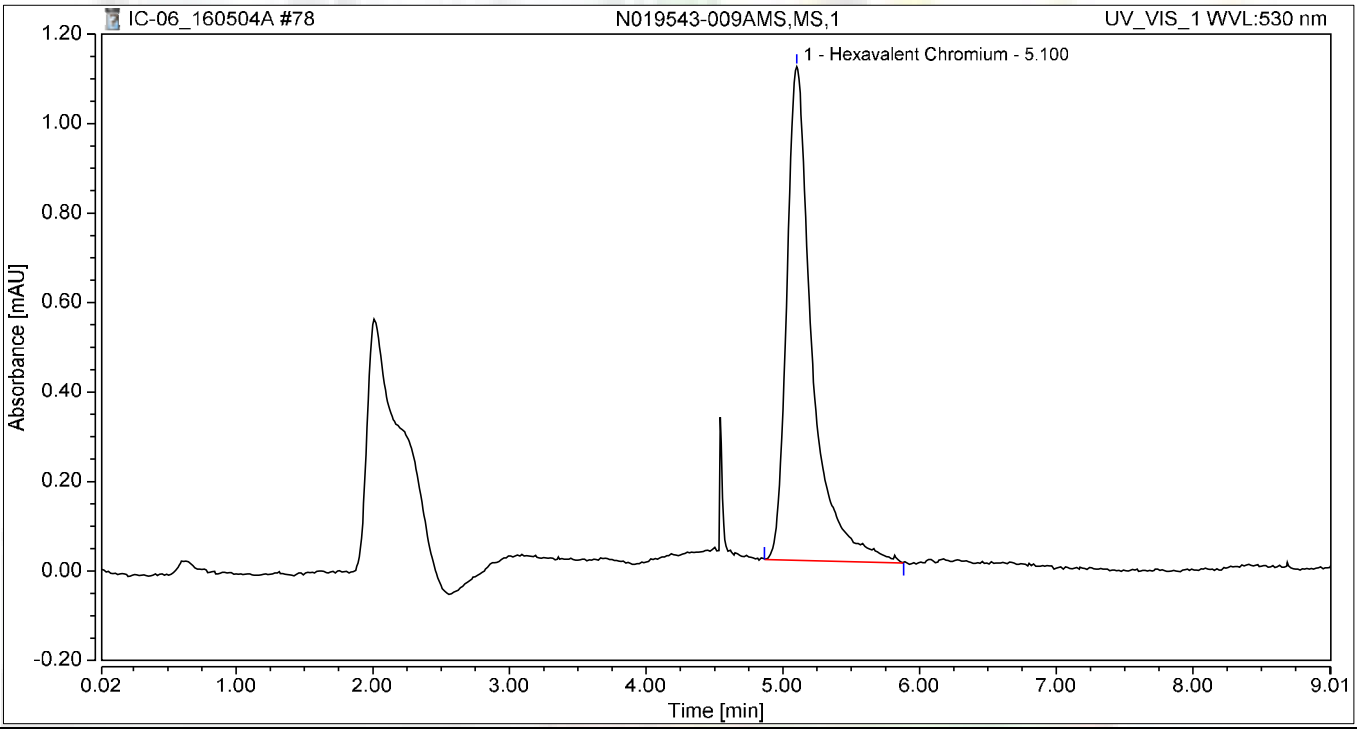
jas 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-009AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

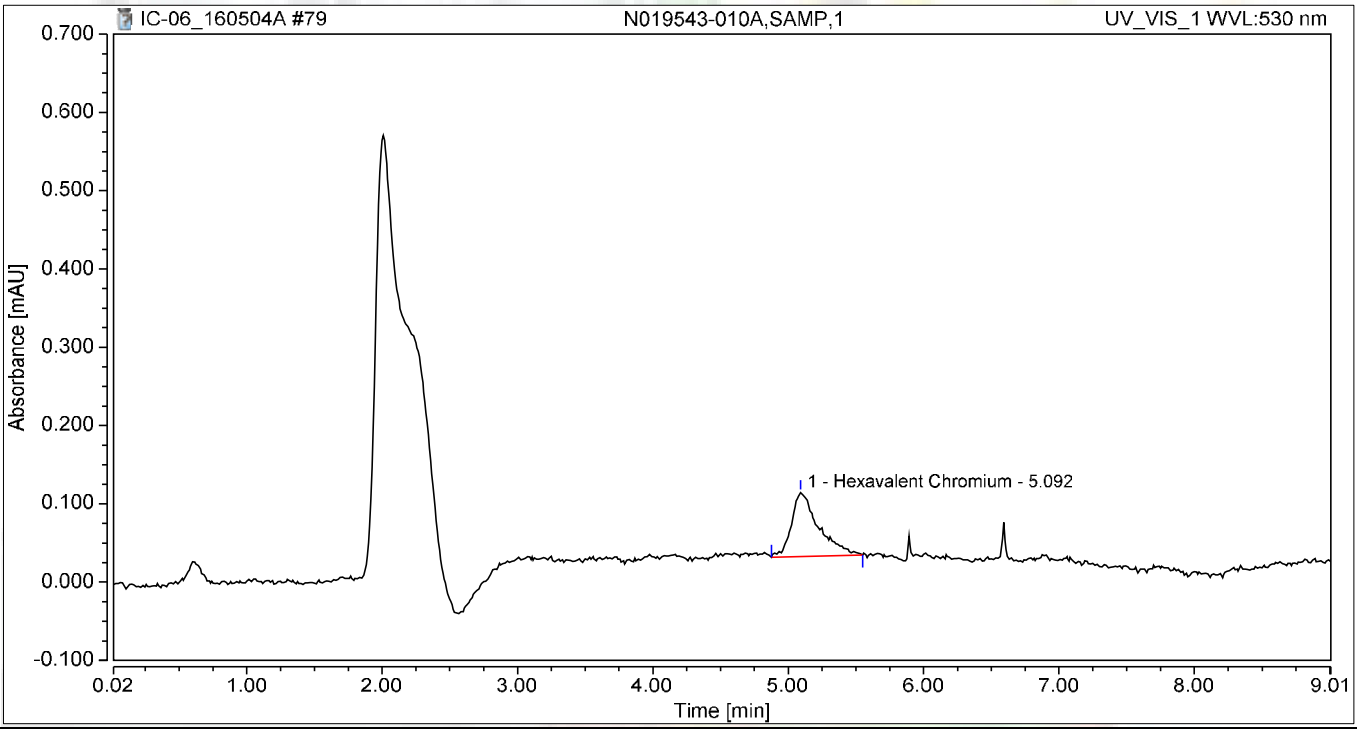
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.238	1.104	100.00	100.00	1.0013
Total:			**0.238**	**1.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-010A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

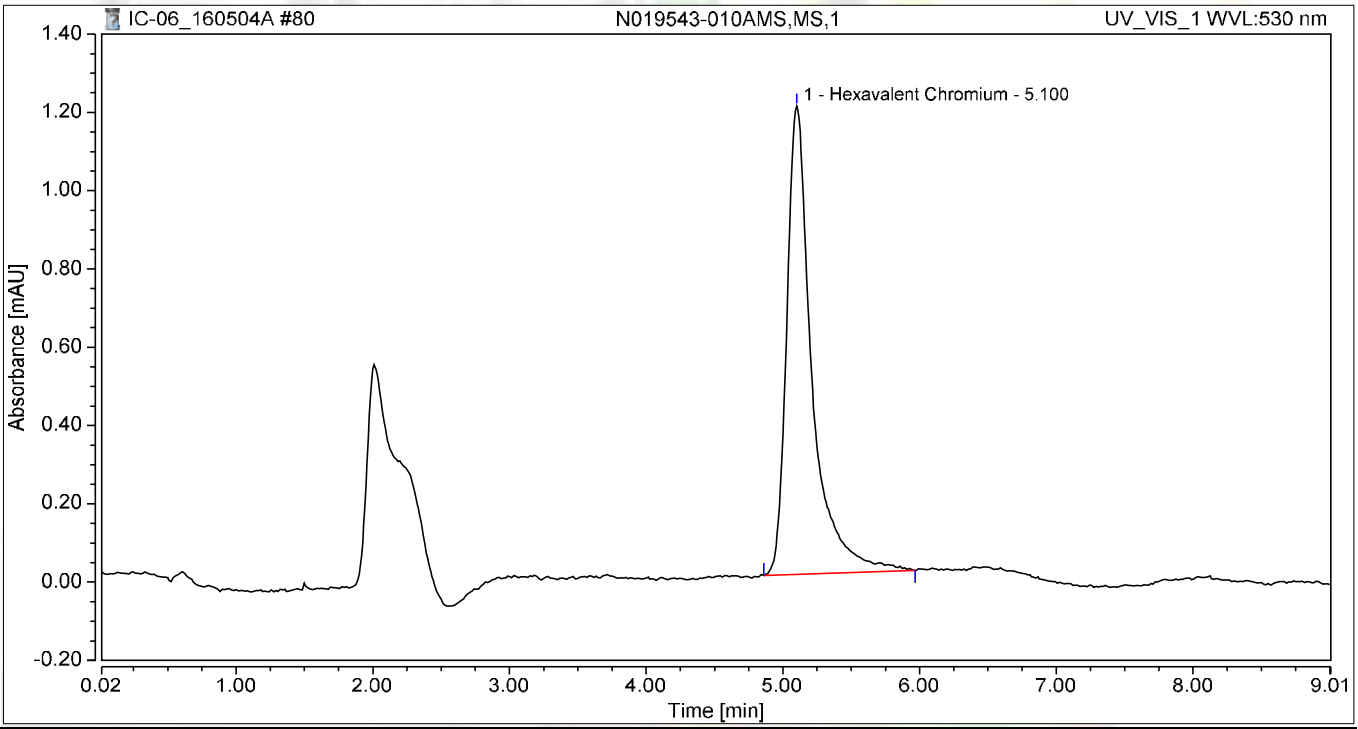
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.019	0.082	100.00	100.00	0.0635
Total:			**0.019**	**0.082**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-010AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

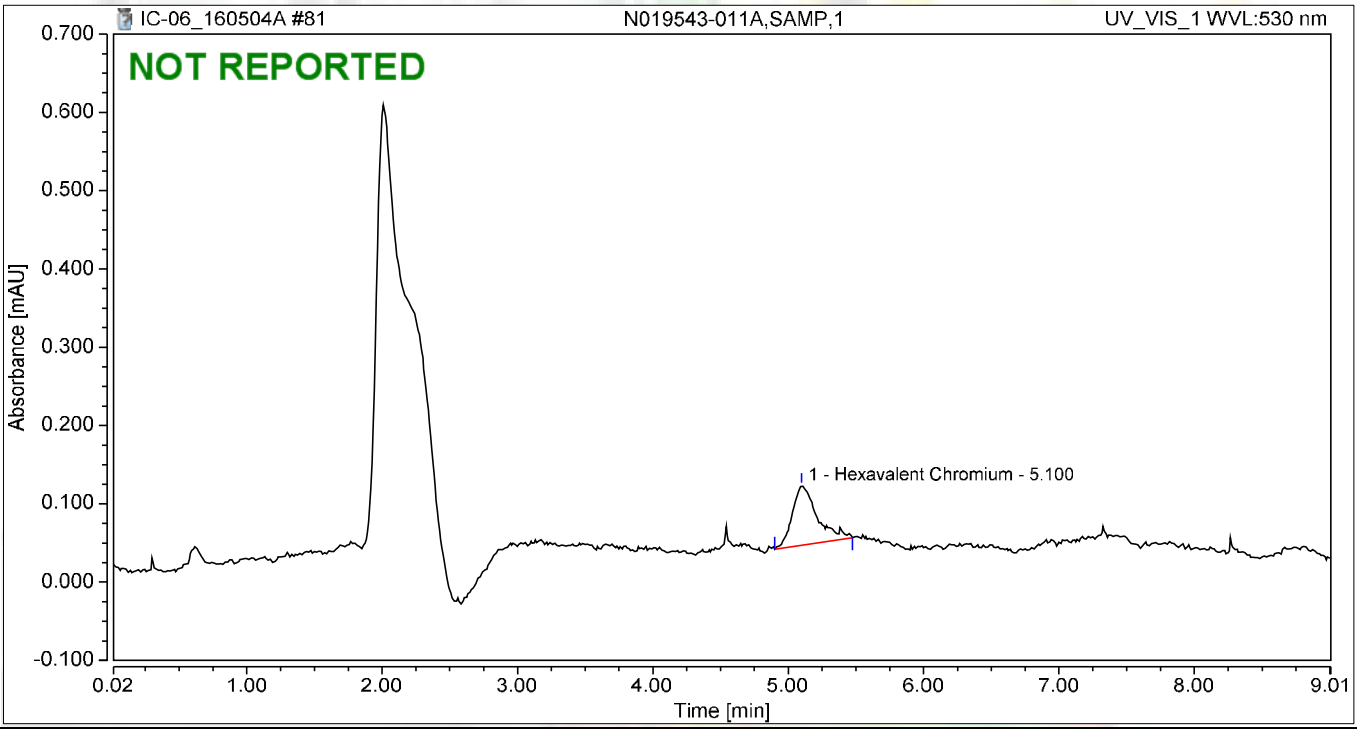
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.256	1.197	100.00	100.00	1.0797
Total:			**0.256**	**1.197**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-011A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

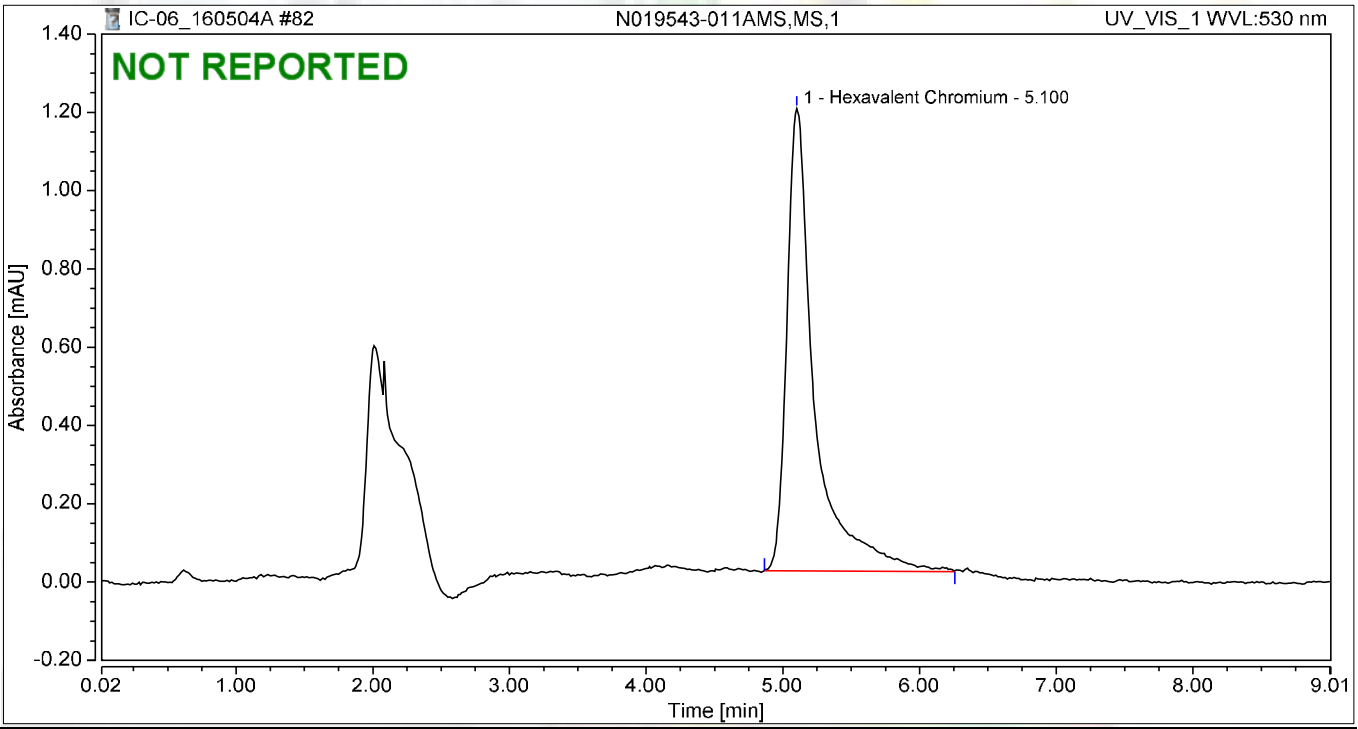
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.016	0.076	100.00	100.00	0.0517
Total:			**0.016**	**0.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-011AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

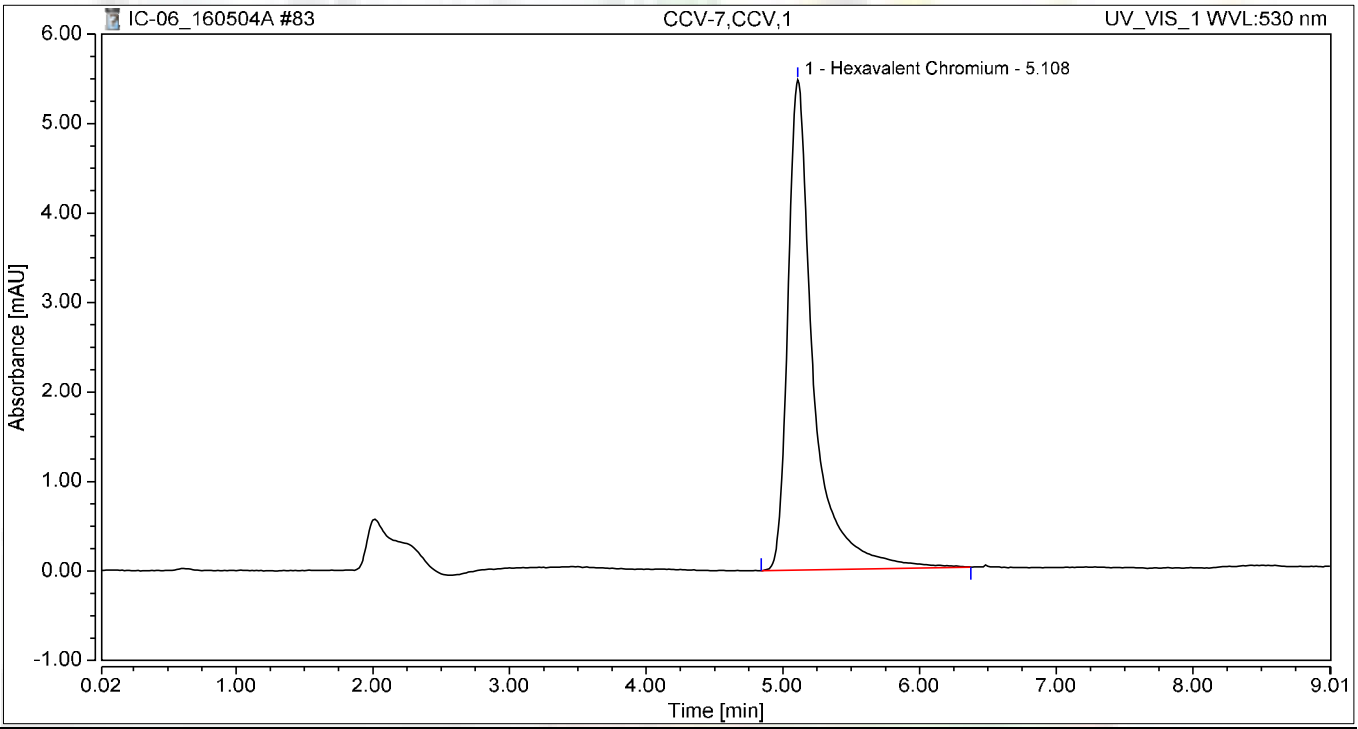
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.278	1.181	100.00	100.00	1.1715
Total:			**0.278**	**1.181**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

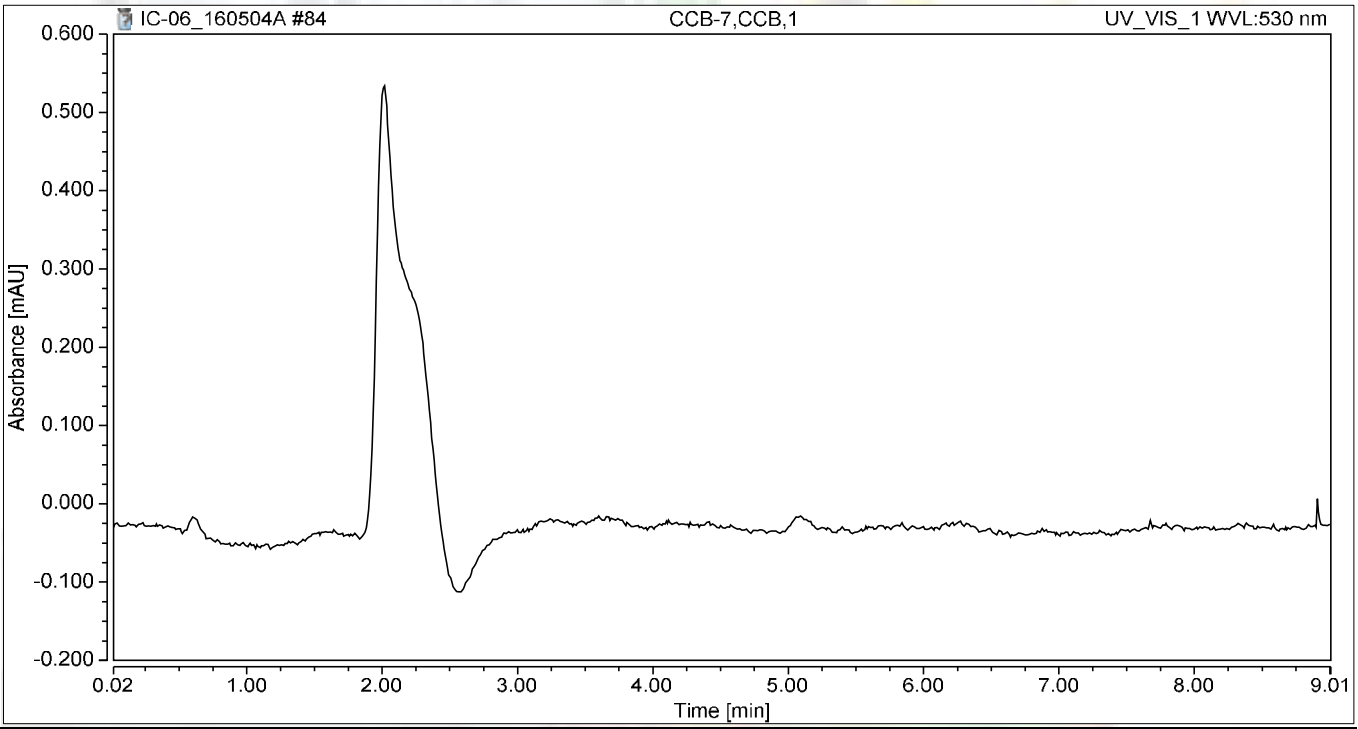
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.189	5.481	100.00	100.00	5.0707
Total:			**1.189**	**5.481**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

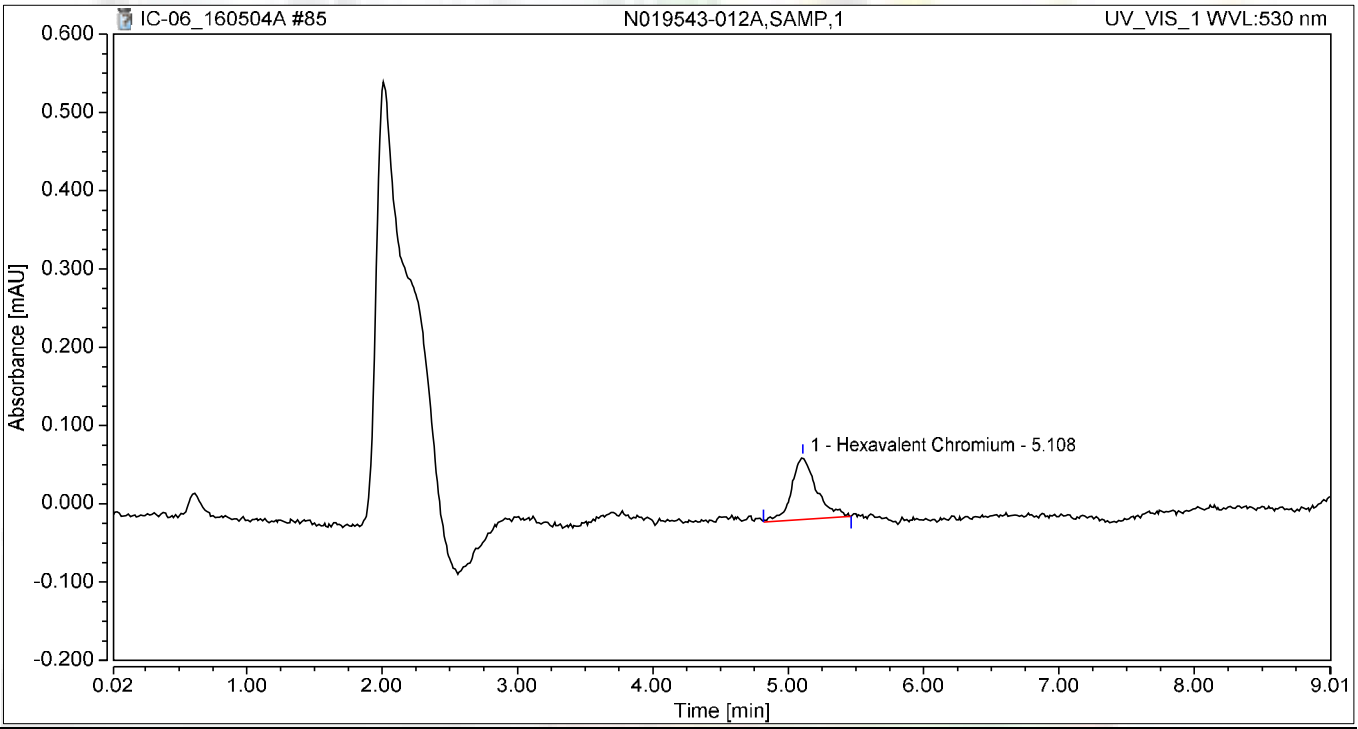
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-012A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

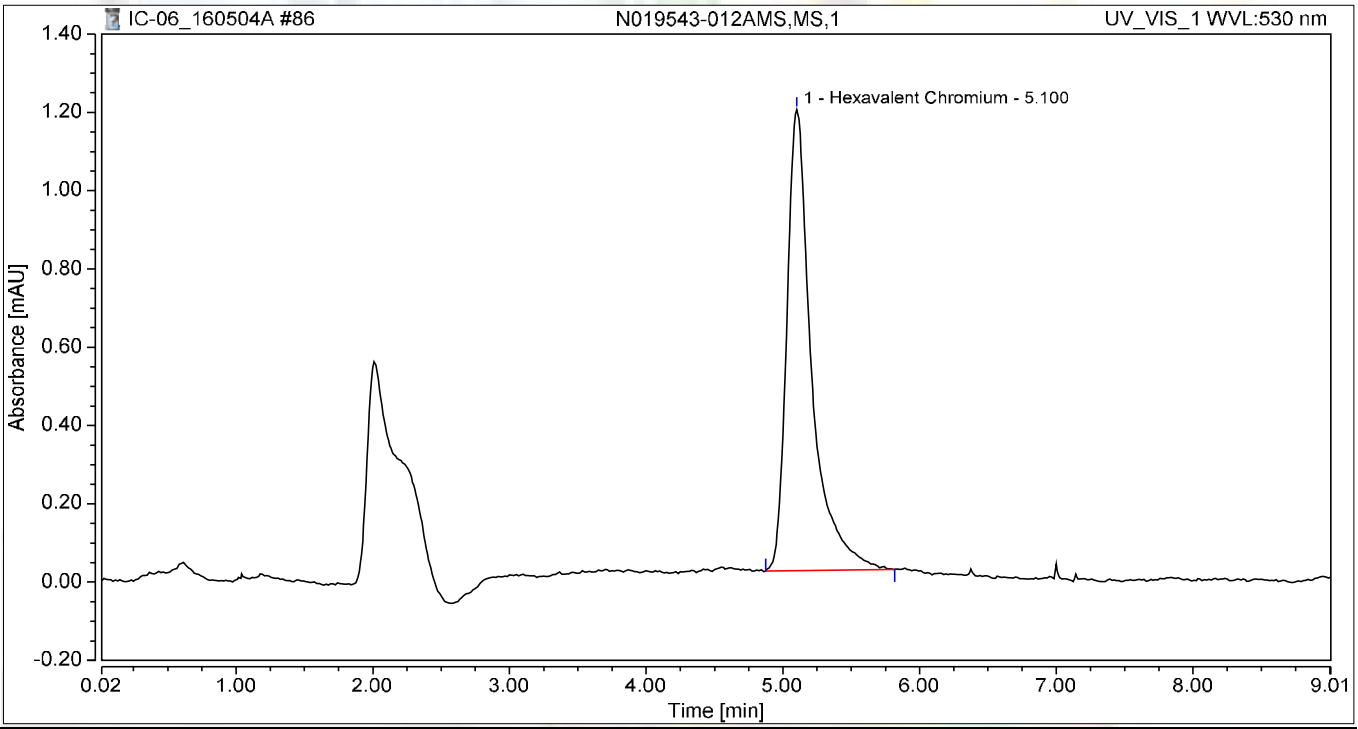
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.017	0.080	100.00	100.00	0.0548
Total:			**0.017**	**0.080**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-012AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

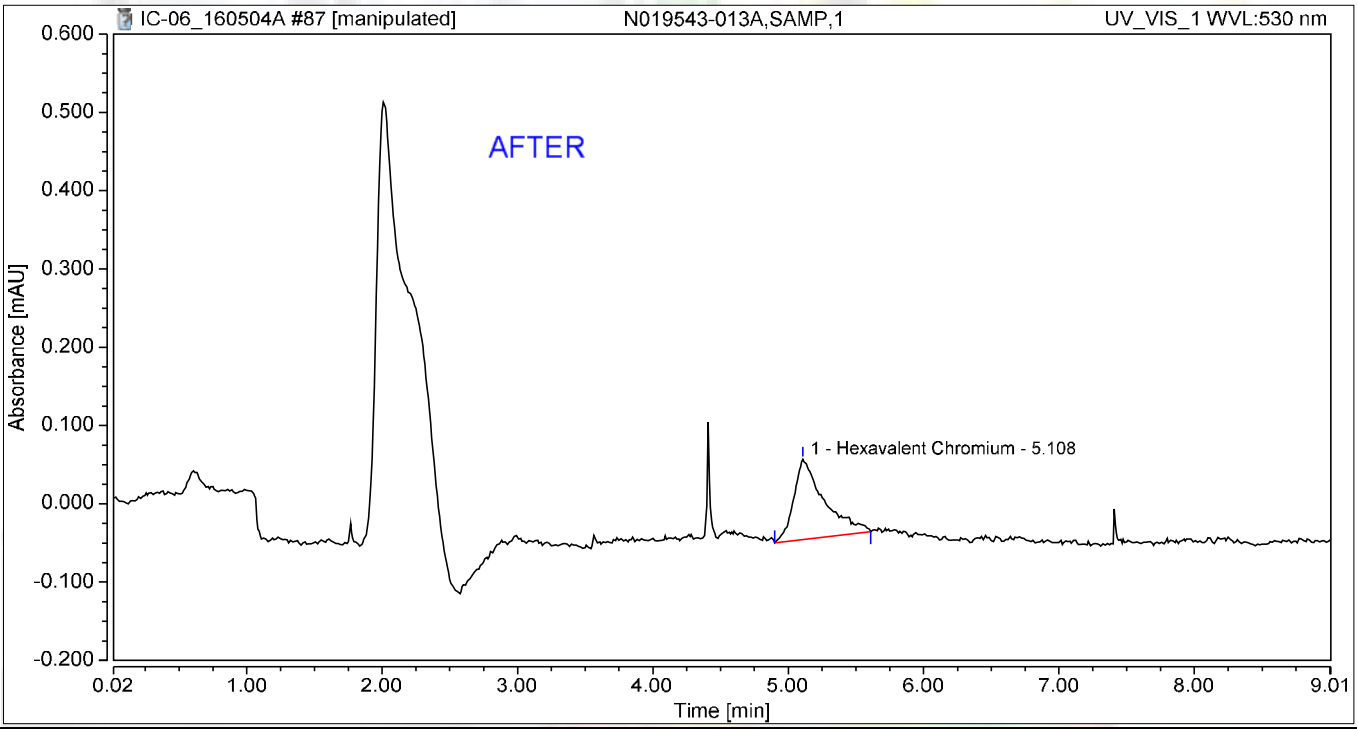
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.248	1.178	100.00	100.00	1.0436
Total:			**0.248**	**1.178**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-013A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.027	0.102	100.00	100.00	0.0957
Total:			**0.027**	**0.102**	**100.00**	**100.00**	

5/10/2016

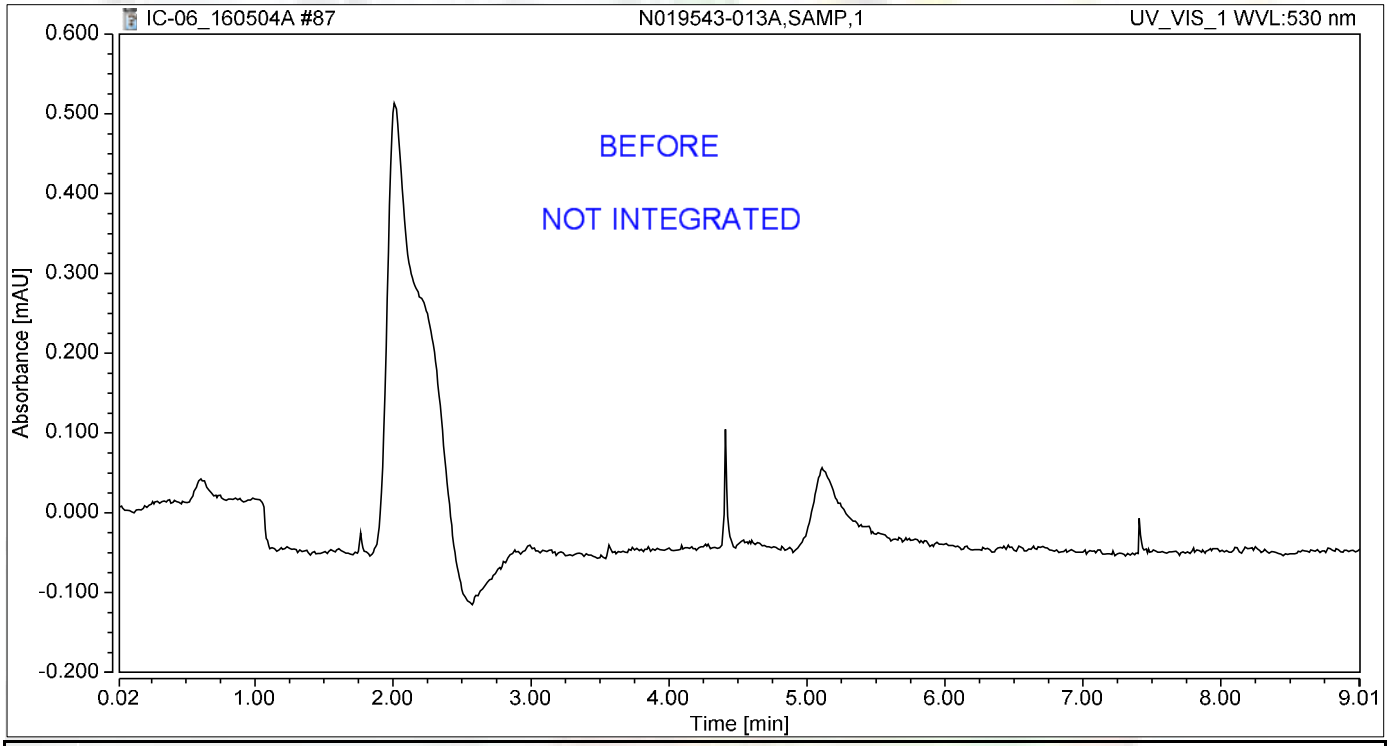
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-013A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

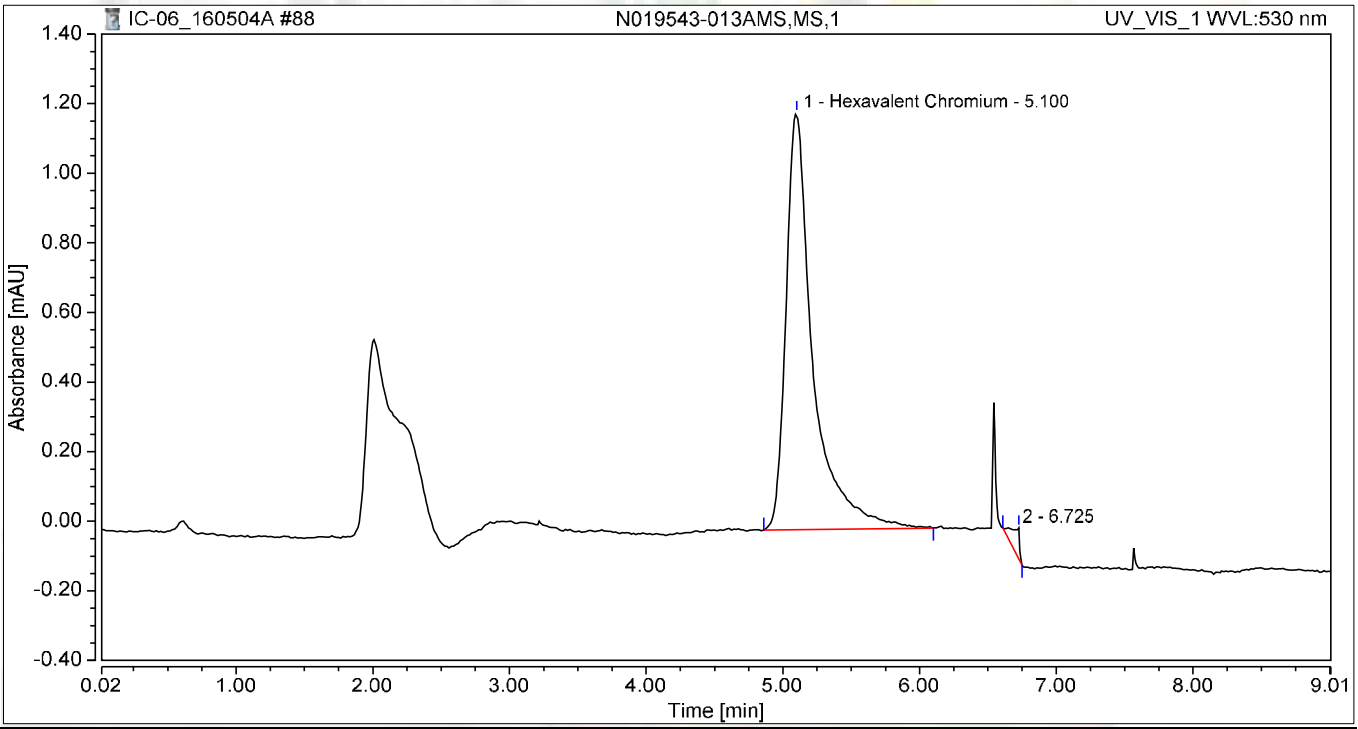
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-013AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

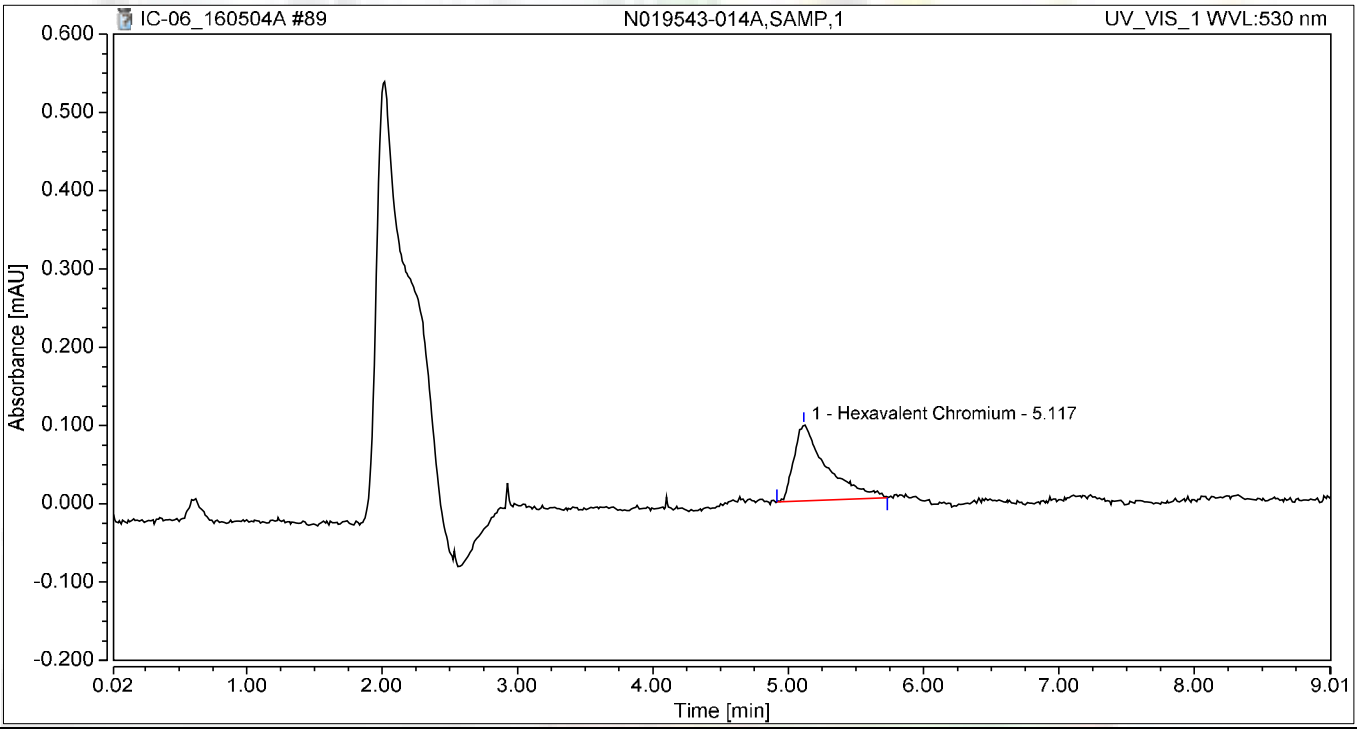
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.272	1.197	98.01	93.16	1.1482
2		6.725	0.006	0.088	1.99	6.84	n.a.
Total:			**0.278**	**1.285**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-014A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

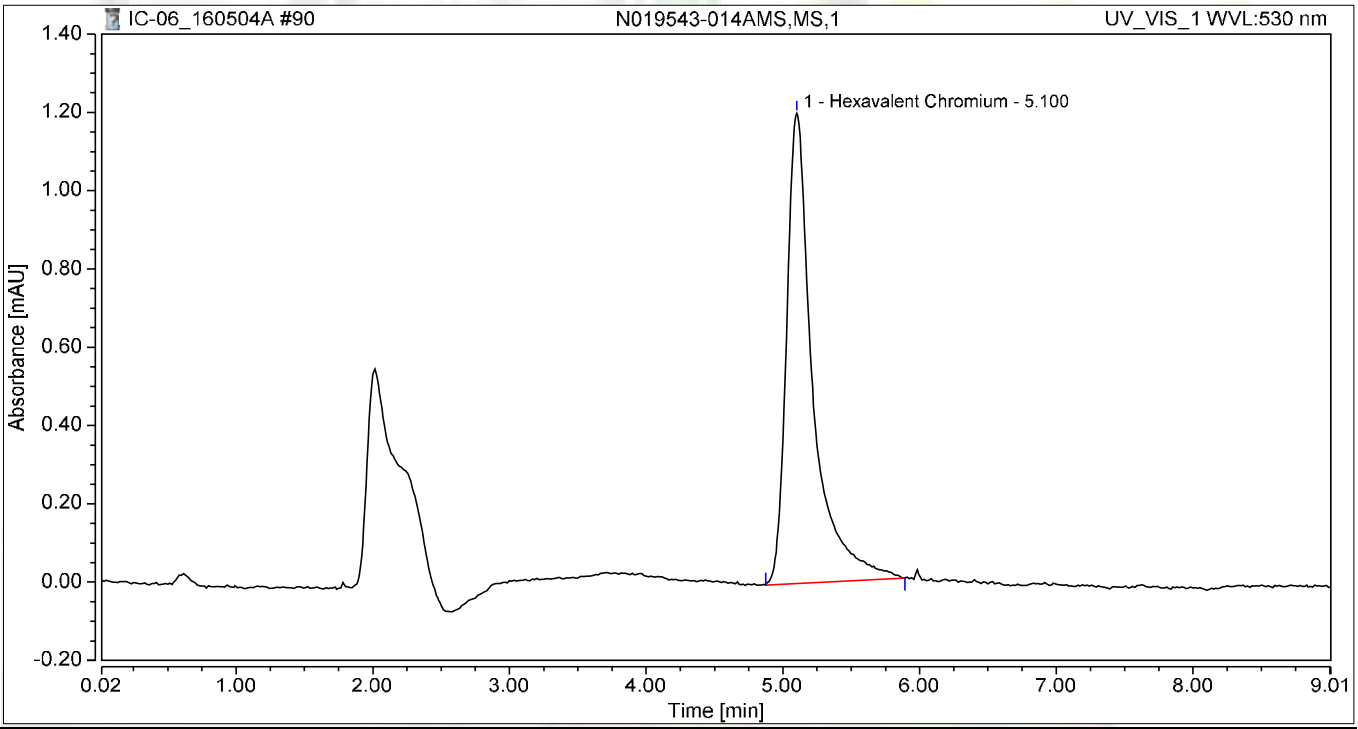
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.028	0.097	100.00	100.00	0.0998
Total:			**0.028**	**0.097**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-014AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

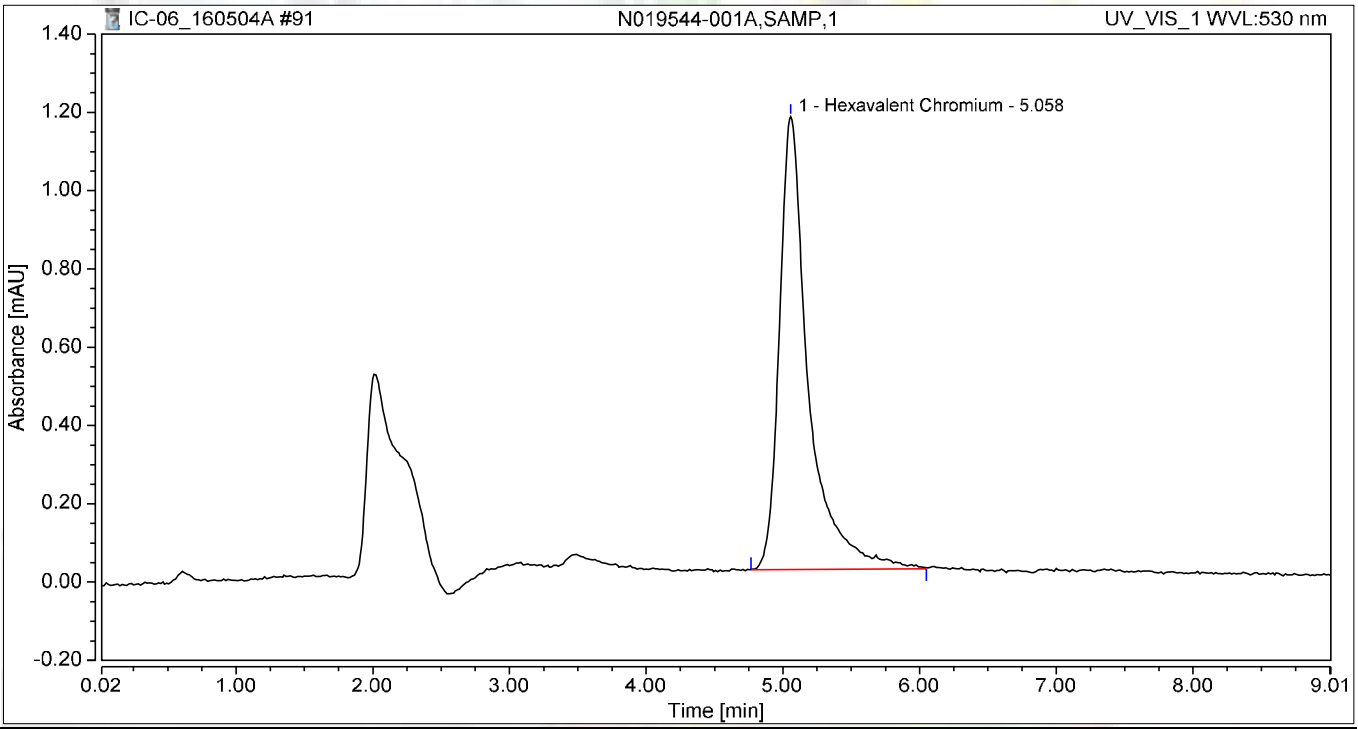
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.269	1.201	100.00	100.00	1.1321
Total:			**0.269**	**1.201**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019544-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

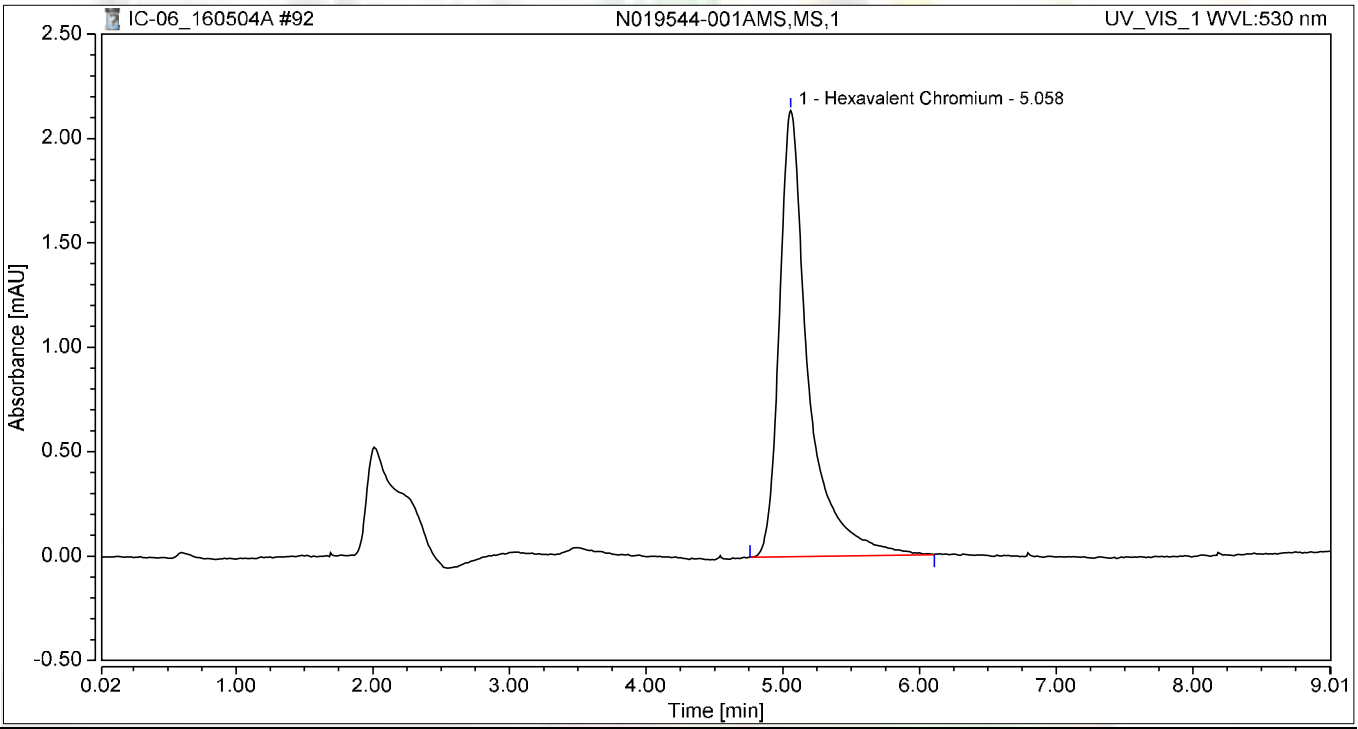
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.058	0.285	1.157	100.00	100.00	1.2010
Total:			**0.285**	**1.157**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019544-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

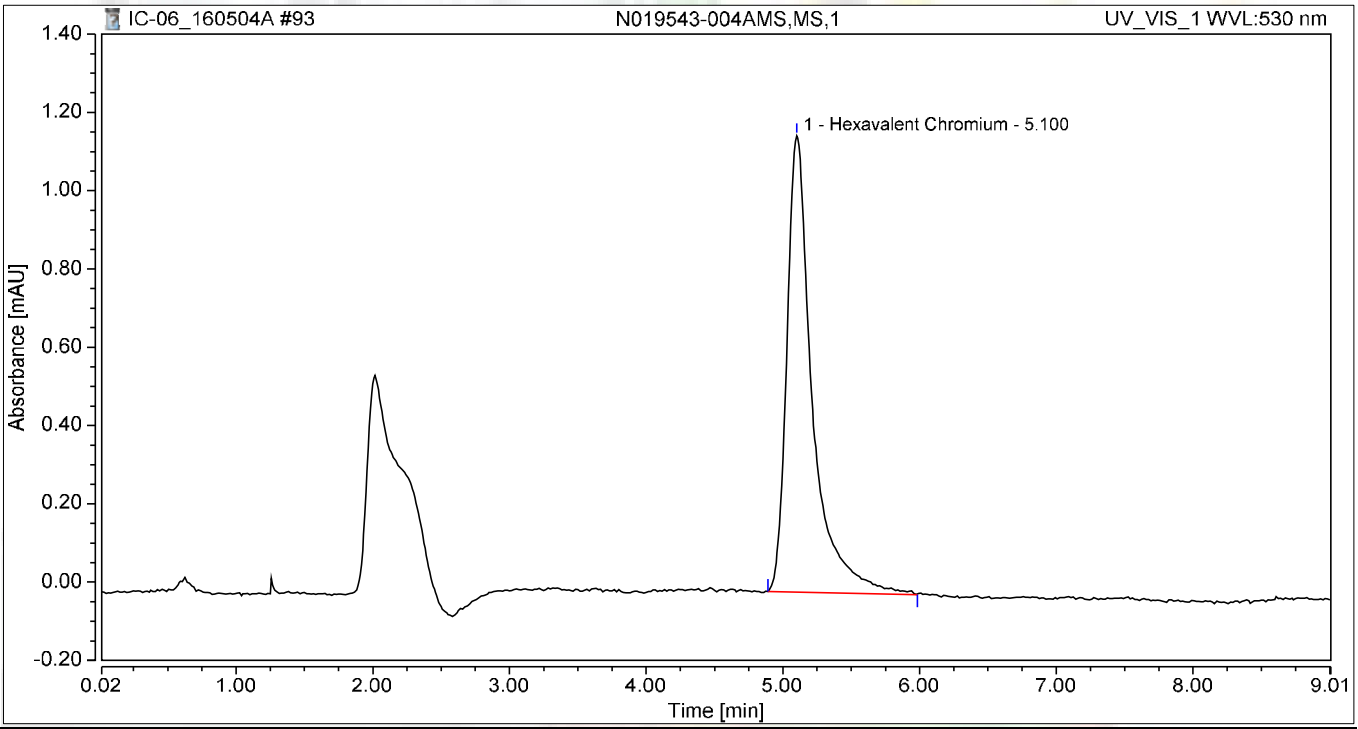
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.058	0.525	2.138	100.00	100.00	2.2313
Total:			**0.525**	**2.138**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-004AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

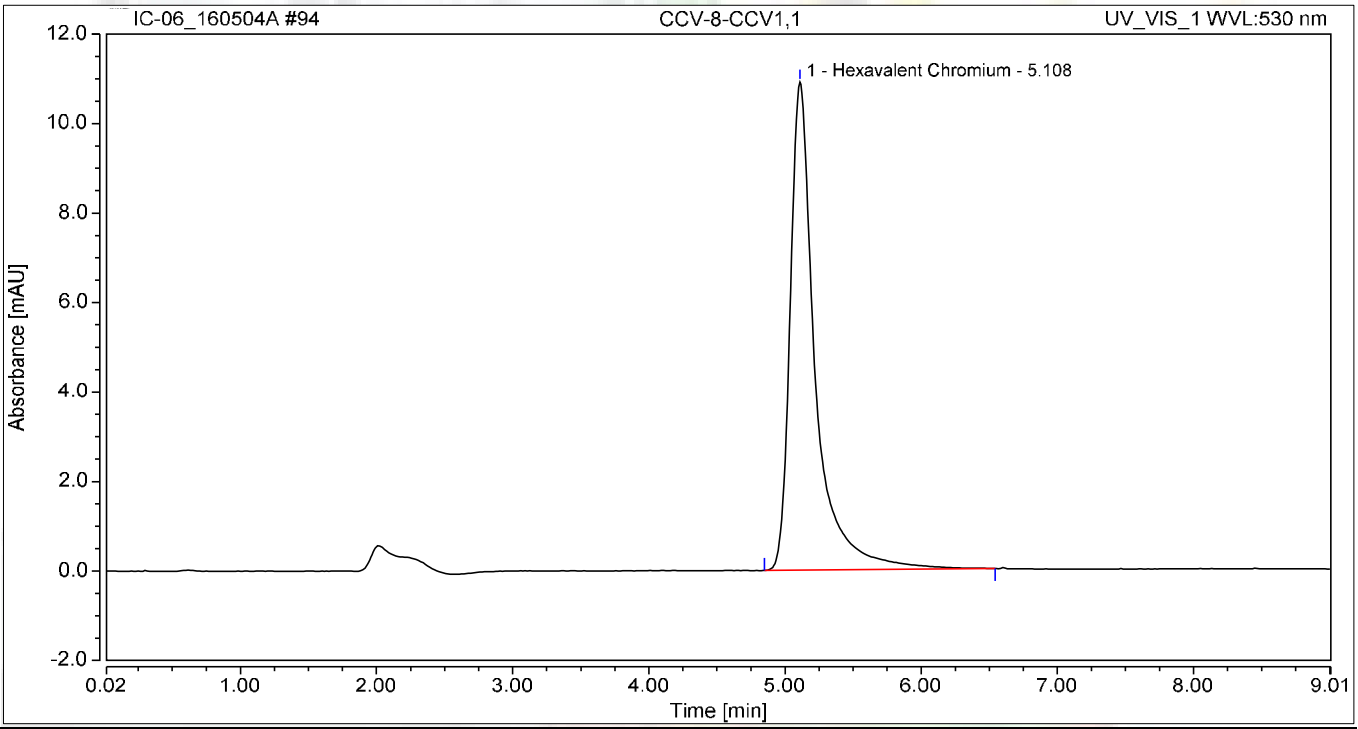
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.252	1.165	100.00	100.00	1.0616
Total:			**0.252**	**1.165**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8-CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

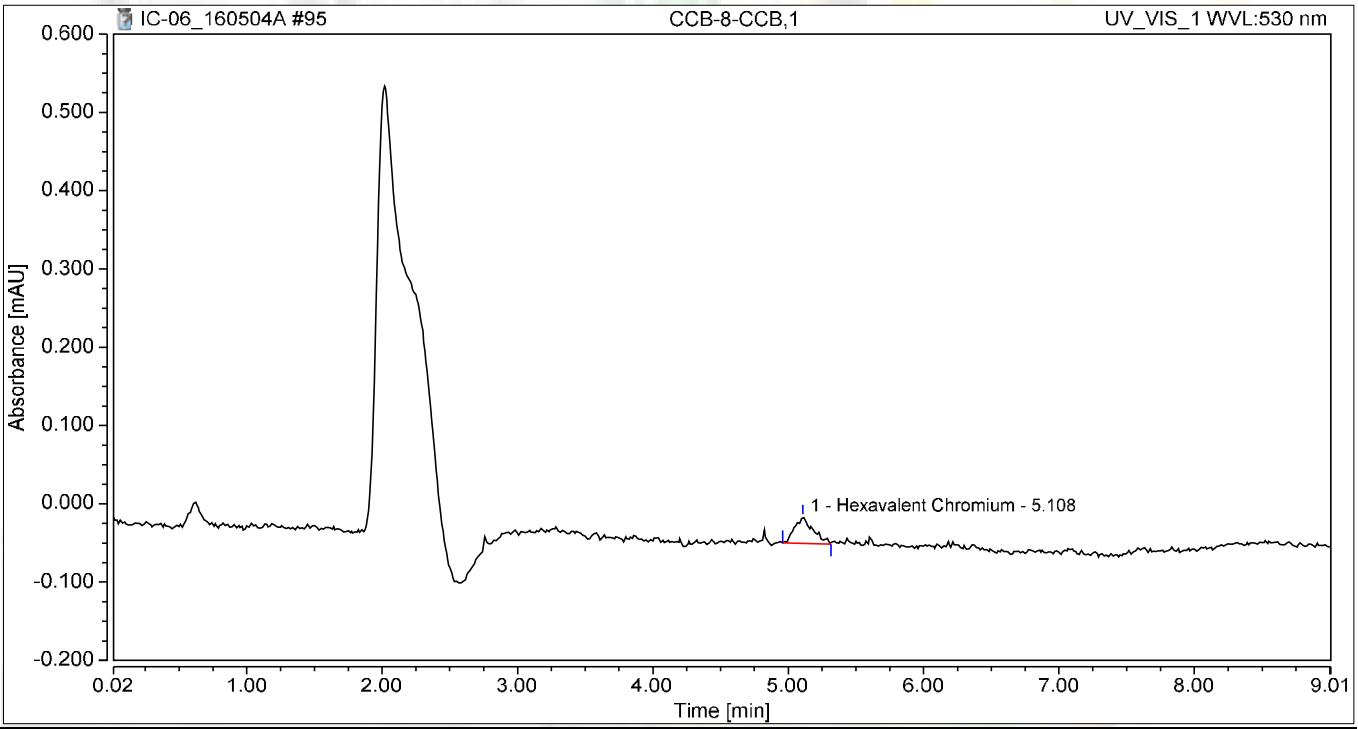
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.335	10.912	100.00	100.00	9.9795
Total:			**2.335**	**10.912**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8-CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.005	0.033	100.00	100.00	0.0045
Total:			**0.005**	**0.033**	**100.00**	**100.00**	

RAW DATA

INJECTION LOG: 160505A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/05/16 9:06 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/05/16 9:18 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/05/16 9:28 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/05/16 9:38 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/05/16 9:48 AM	Reported
15	MB-R108290	MBLK	1	Hexavalent Chromium	05/05/16 9:58 AM	Reported
16	LCS-R108290	LCS	1	Hexavalent Chromium	05/05/16 10:08 AM	Reported
17	N019543-011A	SAMP	1	Hexavalent Chromium	05/05/16 10:18 AM	Reported
18	N019543-011AMS	MS	1	Hexavalent Chromium	05/05/16 10:28 AM	Reported
19	N019559-001A	SAMP	1	Hexavalent Chromium	05/05/16 10:38 AM	Reported
20	N019559-001ADUP	DUP	1	Hexavalent Chromium	05/05/16 10:48 AM	Reported
21	N019559-001AMS	MS	1	Hexavalent Chromium	05/05/16 10:58 AM	Reported
22	N019559-001AMSD	MSD	1	Hexavalent Chromium	05/05/16 11:08 AM	Reported
23	N019559-002A	SAMP	1	Hexavalent Chromium	05/05/16 11:17 AM	Reported
24	N019559-002AMS	MS	1	Hexavalent Chromium	05/05/16 11:27 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/05/16 11:37 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/05/16 11:47 AM	Reported
27	N019559-003A	SAMP	1	Hexavalent Chromium	05/05/16 11:59 AM	Reported
28	N019559-003AMS	MS	1	Hexavalent Chromium	05/05/16 12:11 PM	Not Reported
29	N019559-004A	SAMP	1	Hexavalent Chromium	05/05/16 12:21 PM	Reported
30	N019559-004AMS	MS	1	Hexavalent Chromium	05/05/16 12:31 PM	Reported
31	N019559-005A	SAMP	1	Hexavalent Chromium	05/05/16 12:41 PM	Reported
32	N019559-005AMS	MS	1	Hexavalent Chromium	05/05/16 12:51 PM	Reported
33	N019559-006A	SAMP	1	Hexavalent Chromium	05/05/16 1:01 PM	Reported
34	N019559-006AMS	MS	1	Hexavalent Chromium	05/05/16 1:11 PM	Reported
35	N019559-007A	SAMP	1	Hexavalent Chromium	05/05/16 1:21 PM	Reported
36	N019559-007AMS	MS	1	Hexavalent Chromium	05/05/16 1:31 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/05/16 1:41 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/05/16 1:51 PM	Reported
39	N019559-008A	SAMP	1	Hexavalent Chromium	05/05/16 2:01 PM	Reported
40	N019559-008AMS	MS	1	Hexavalent Chromium	05/05/16 2:11 PM	Reported
41	N019559-009A	SAMP	1	Hexavalent Chromium	05/05/16 2:21 PM	Reported
42	N019559-009AMS	MS	1	Hexavalent Chromium	05/05/16 2:31 PM	Reported
43	N019559-010A	SAMP	1	Hexavalent Chromium	05/05/16 2:41 PM	Reported
44	N019559-010AMS	MS	1	Hexavalent Chromium	05/05/16 2:51 PM	Not Reported
45	N019559-011A	SAMP	1	Hexavalent Chromium	05/05/16 3:01 PM	Reported
46	N019559-011AMS	MS	1	Hexavalent Chromium	05/05/16 3:11 PM	Reported
47	N019559-012A	SAMP	1	Hexavalent Chromium	05/05/16 3:21 PM	Reported
48	N019559-012AMS	MS	1	Hexavalent Chromium	05/05/16 3:31 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/05/16 3:41 PM	Reported

5/16/2016

INJECTION LOG: 160505A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-4	CCB	1	Hexavalent Chromium	05/05/16 3:51 PM	Reported
51	N019559-013A	SAMP	1	Hexavalent Chromium	05/05/16 4:01 PM	Reported
52	N019559-013AMS	MS	1	Hexavalent Chromium	05/05/16 4:10 PM	Reported
53	N019559-014A	SAMP	1	Hexavalent Chromium	05/05/16 4:20 PM	Reported
54	N019559-014AMS	MS	1	Hexavalent Chromium	05/05/16 4:30 PM	Reported
55	N019559-003AMS	MS	1	Hexavalent Chromium	05/05/16 4:47 PM	Reported
56	N019559-010AMS	MS	1	Hexavalent Chromium	05/05/16 5:00 PM	Reported
57	CCV-5	CCV	1	Hexavalent Chromium	05/05/16 5:12 PM	Reported
58	CCB-5	CCB	1	Hexavalent Chromium	05/05/16 5:22 PM	Reported
59	MB-R108291	MBLK	1	Hexavalent Chromium	05/05/16 5:32 PM	Reported
60	LCS-R108291	LCS	1	Hexavalent Chromium	05/05/16 5:44 PM	Reported
61	N019560-001A	SAMP	1	Hexavalent Chromium	05/05/16 5:54 PM	Reported
62	N019560-001ADUP	DUP	1	Hexavalent Chromium	05/05/16 6:04 PM	Reported
63	N019560-001AMS	MS	1	Hexavalent Chromium	05/05/16 6:14 PM	Reported
64	N019560-001AMSD	MSD	1	Hexavalent Chromium	05/05/16 6:24 PM	Reported
65	N019560-002A	SAMP	1	Hexavalent Chromium	05/05/16 6:34 PM	Reported
66	N019560-002AMS	MS	1	Hexavalent Chromium	05/05/16 6:44 PM	Reported
67	N019560-003A	SAMP	1	Hexavalent Chromium	05/05/16 6:54 PM	Not Reported
68	N019560-003AMS	MS	1	Hexavalent Chromium	05/05/16 7:04 PM	Not Reported
69	CCV-6	CCV1	1	Hexavalent Chromium	05/05/16 7:14 PM	Reported
70	CCB-6	CCB	1	Hexavalent Chromium	05/05/16 7:24 PM	Reported
71	N019560-004A	SAMP	1	Hexavalent Chromium	05/05/16 7:34 PM	Not Reported
72	N019560-004AMS	MS	1	Hexavalent Chromium	05/05/16 7:44 PM	Not Reported
73	N019560-005A	SAMP	1	Hexavalent Chromium	05/05/16 7:54 PM	Not Reported
74	N019560-005AMS	MS	1	Hexavalent Chromium	05/05/16 8:04 PM	Not Reported
75	N019560-006A	SAMP	100	Hexavalent Chromium	05/05/16 8:14 PM	Reported
76	N019560-006AMS	MS	100	Hexavalent Chromium	05/05/16 8:24 PM	Reported
77	N019560-007A	SAMP	500	Hexavalent Chromium	05/05/16 8:34 PM	Reported
78	N019560-007AMS	MS	500	Hexavalent Chromium	05/05/16 8:44 PM	Reported
79	N019560-008A	SAMP	100	Hexavalent Chromium	05/05/16 8:54 PM	Reported
80	N019560-008AMS	MS	100	Hexavalent Chromium	05/05/16 9:04 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	05/05/16 9:13 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	05/05/16 9:23 PM	Reported
83	N019560-009A	SAMP	1	Hexavalent Chromium	05/05/16 9:33 PM	Not Reported
84	N019560-009AMS	MS	1	Hexavalent Chromium	05/05/16 9:43 PM	Not Reported
85	N019560-010A	SAMP	1	Hexavalent Chromium	05/05/16 9:53 PM	Not Reported
86	N019560-010AMS	MS	1	Hexavalent Chromium	05/05/16 10:03 PM	Not Reported
87	N019560-011A	SAMP	20	Hexavalent Chromium	05/05/16 10:13 PM	Reported
88	N019560-011AMS	MS	20	Hexavalent Chromium	05/05/16 10:23 PM	Reported
89	N019560-012A	SAMP	200	Hexavalent Chromium	05/05/16 10:33 PM	Reported
90	N019560-012AMS	MS	200	Hexavalent Chromium	05/05/16 10:43 PM	Reported
91	N019560-013	SAMP	1	Hexavalent Chromium	05/05/16 10:53 PM	Reported
92	N019560-013AMS	MS	1	Hexavalent Chromium	05/05/16 11:03 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	05/05/16 11:13 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	05/05/16 11:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160505A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**06/May/16 10:59:20**
No. of Injections:	**97**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/05/2016 09:06	Finished	CCV @ 5ppb, IWST-160401A
11	BLANK	2	1000	Unknown		05/05/2016 09:18	Finished	CCV @ 5ppb, IWST-160401A
12	CCV-1,CCV,1	3	1000	Unknown		05/05/2016 09:28	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/05/2016 09:38	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/05/2016 09:48	Finished	CCB R160501A
15	MB-H2O,MBLK,1	6	1000	Unknown		05/05/2016 09:58	Finished	MB R160426A
16	LCS-H2O,LCS,1	7	1000	Unknown		05/05/2016 10:08	Finished	LCS(5ppb), IWST-160401B
17	N019543-011A,SAMP,1	8	1000	Unknown		05/05/2016 10:18	Finished	SAMP, 10mL
18	N019543-011AMS,MS,1	9	1000	Unknown		05/05/2016 10:28	Finished	MS (1ppb), IWST-160401B, 10 mL
19	N019559-001A,SAMP,1	10	1000	Unknown		05/05/2016 10:38	Finished	SAMP, 10mL
20	N019559-001ADUP,DUP,1	11	1000	Unknown		05/05/2016 10:48	Finished	DUP, 10mL
21	N019559-001AMS,MS,1	12	1000	Unknown		05/05/2016 10:58	Finished	MS (1ppb), IWST-160401B, 10 mL
22	N019559-001AMSD,MSD,1	13	1000	Unknown		05/05/2016 11:08	Finished	MSD (1ppb), IWST-160401B, 10 r
23	N019559-002A,SAMP,1	14	1000	Unknown		05/05/2016 11:17	Finished	SAMP, 10mL
24	N019559-002AMS,MS,1	15	1000	Unknown		05/05/2016 11:27	Finished	MS (1ppb), IWST-160401B, 10 mL
25	CCV-2,CCV1,1	16	1000	Unknown		05/05/2016 11:37	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/05/2016 11:47	Finished	CCB R160426G
27	N019559-003A,SAMP,1	18	1000	Unknown		05/05/2016 11:59	Finished	SAMP, 10mL
28	N019559-003AMS,MS,1	19	1000	Unknown		05/05/2016 12:11	Finished	MS (1ppb), IWST-160401B, 10 mL
29	N019559-004A,SAMP,1	20	1000	Unknown		05/05/2016 12:21	Finished	SAMP, 10mL
30	N019559-004AMS,MS,1	21	1000	Unknown		05/05/2016 12:31	Finished	MS (1ppb), IWST-160401B, 10 mL
31	N019559-005A,SAMP,1	22	1000	Unknown		05/05/2016 12:41	Finished	SAMP, 10mL
32	N019559-005AMS,MS,1	23	1000	Unknown		05/05/2016 12:51	Finished	MS (1ppb), IWST-160401B, 10 mL
33	N019559-006A,SAMP,1	24	1000	Unknown		05/05/2016 13:01	Finished	SAMP, 10mL
34	N019559-006AMS,MS,1	25	1000	Unknown		05/05/2016 13:11	Finished	MS (1ppb), IWST-160401B, 10 mL
35	N019559-007A,SAMP,1	26	1000	Unknown		05/05/2016 13:21	Finished	SAMP, 10mL
36	N019559-007AMS,MS,1	27	1000	Unknown		05/05/2016 13:31	Finished	MS (1ppb), IWST-160401B, 10 mL
37	CCV-3,CCV,1	28	1000	Unknown		05/05/2016 13:41	Finished	CCV @ 5ppb, IWST-160401A
38	CCB-3,CCB,1	29	1000	Unknown		05/05/2016 13:51	Finished	CCB
39	N019559-008A,SAMP,1	30	1000	Unknown		05/05/2016 14:01	Finished	SAMP, 10mL
40	N019559-008AMS,MS,1	31	1000	Unknown		05/05/2016 14:11	Finished	MS (1ppb), IWST-160401B, 10 mL
41	N019559-009A,SAMP,1	32	1000	Unknown		05/05/2016 14:21	Finished	SAMP, 10mL
42	N019559-009AMS,MS,1	33	1000	Unknown		05/05/2016 14:31	Finished	MS (1ppb), IWST-160401B, 10 mL
43	N019559-010A,SAMP,1	34	1000	Unknown		05/05/2016 14:41	Finished	SAMP, 10mL
44	N019559-010AMS,MS,1	35	1000	Unknown		05/05/2016 14:51	Finished	MS (1ppb), IWST-160401B, 10 mL
45	N019559-011A,SAMP,1	36	1000	Unknown		05/05/2016 15:01	Finished	SAMP, 10mL
46	N019559-011AMS,MS,1	37	1000	Unknown		05/05/2016 15:11	Finished	MS (1ppb), IWST-160401B, 10 mL
47	N019559-012A,SAMP,1	38	1000	Unknown		05/05/2016 15:21	Finished	SAMP, 10mL
48	N019559-012AMS,MS,1	39	1000	Unknown		05/05/2016 15:31	Finished	MS (1ppb), IWST-160401B, 10 mL
49	CCV-4,CCV1,1	40	1000	Unknown		05/05/2016 15:41	Finished	CCV @ 10ppb, IWST-160401A
50	CCB-4,CCB,1	41	1000	Unknown		05/05/2016 15:51	Finished	CCB R160331B
51	N019559-013A,SAMP,1	42	1000	Unknown		05/05/2016 16:01	Finished	SAMP, 10mL
52	N019559-013AMS,MS,1	43	1000	Unknown		05/05/2016 16:10	Finished	MS (1ppb), IWST-160401B, 10 mL
53	N019559-014A,SAMP,1	44	1000	Unknown		05/05/2016 16:20	Finished	SAMP, 10mL
54	N019559-014AMS,MS,1	45	1000	Unknown		05/05/2016 16:30	Finished	MS (1ppb), IWST-160401B, 10 mL
55	N019559-003AMS,MS,1	46	1000	Unknown		05/05/2016 16:47	Finished	MS (1ppb), IWST-160401B, 10 mL
56	N019559-010AMS,MS,1	47	1000	Unknown		05/05/2016 17:00	Finished	MS (1ppb), IWST-160401B, 10 mL
57	CCV-5,CCV,1	48	1000	Unknown		05/05/2016 17:12	Finished	CCV @ 5ppb, IWST-160401A
58	CCB-5,CCB,1	49	1000	Unknown		05/05/2016 17:22	Finished	CCB
59	MB-H2O,MBLK,1	1	1000	Unknown		05/05/2016 17:32	Finished	MB R160426G
60	LCS-H2O,LCS,1	2	1000	Unknown		05/05/2016 17:44	Finished	LCS(5ppb), IWST-160401B
61	N019560-001A,SAMP,1	3	1000	Unknown		05/05/2016 17:54	Finished	SAMP, 10mL
62	N019560-001ADUP,DUP,1	4	1000	Unknown		05/05/2016 18:04	Finished	DUP, 10mL
63	N019560-001AMS,MS,1	5	1000	Unknown		05/05/2016 18:14	Finished	MS (1ppb), IWST-160401B, 10 mL
64	N019560-001AMSD,MSD,1	6	1000	Unknown		05/05/2016 18:24	Finished	MSD (1ppb), IWST-160401B, 10 r
65	N019560-002A,SAMP,1	7	1000	Unknown		05/05/2016 18:34	Finished	SAMP, 10mL
66	N019560-002AMS,MS,1	8	1000	Unknown		05/05/2016 18:44	Finished	MS (1ppb), IWST-160401B, 10 mL
67	N019560-003A,SAMP,1	9	1000	Unknown		05/05/2016 18:54	Finished	SAMP, 10mL
68	N019560-003AMS,MS,1	10	1000	Unknown		05/05/2016 19:04	Finished	MS (1ppb), IWST-160401B, 10 mL
69	CCV-6,CCV1,1	11	1000	Unknown		05/05/2016 19:14	Finished	CCV @ 10ppb, IWST-160401A
70	CCB-6,CCB,1	12	1000	Unknown		05/05/2016 19:24	Finished	CCB

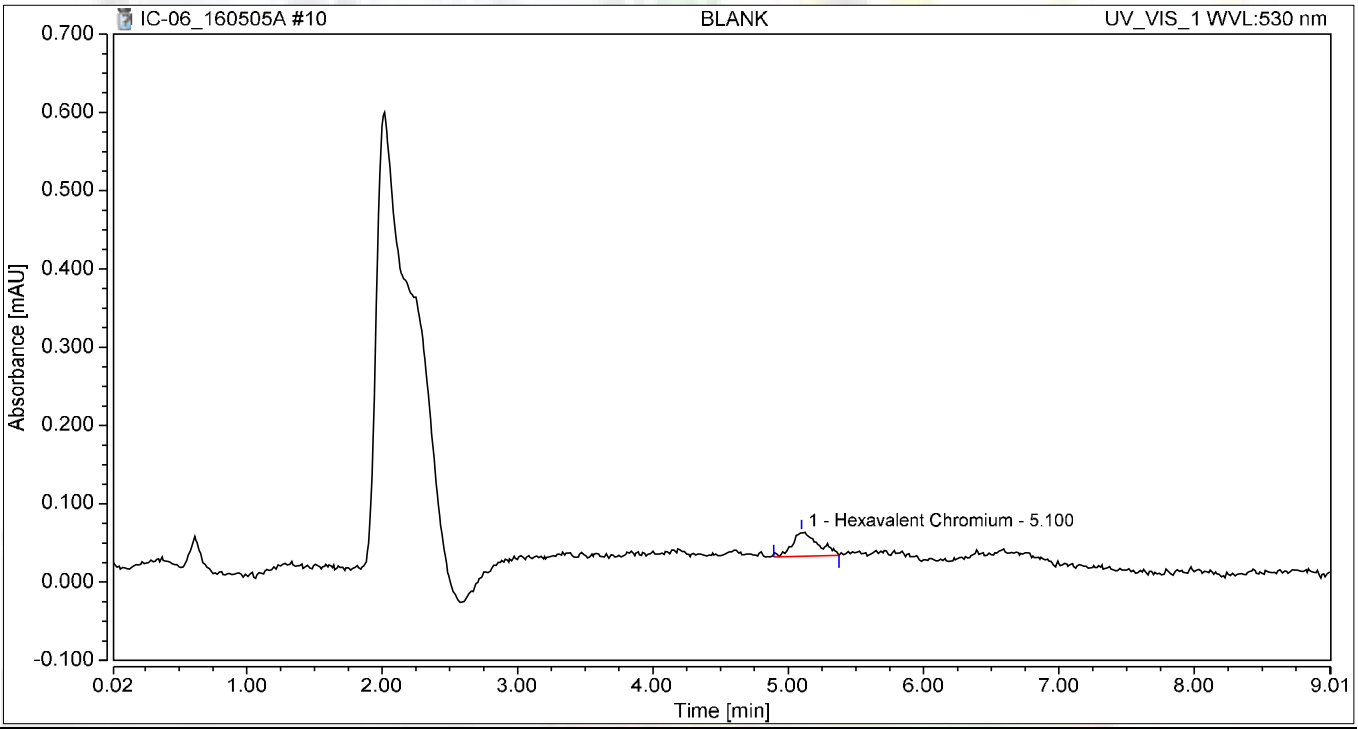
71	N019560-004A,SAMP,1	13	1000	Unknown		05/05/2016 19:34	Finished	SAMP, 10mL
72	N019560-004AMS,MS,1	14	1000	Unknown		05/05/2016 19:44	Finished	MS (1ppb), IWST-160401B, 10 mL
73	N019560-005A,SAMP,1	15	1000	Unknown		05/05/2016 19:54	Finished	SAMP, 10mL
74	N019560-005AMS,MS,1	16	1000	Unknown		05/05/2016 20:04	Finished	MS (1ppb), IWST-160401B, 10 mL
75	N019560-006A,SAMP,100	17	1000	Unknown		05/05/2016 20:14	Finished	SAMP, 0.10>10mL
76	N019560-006AMS,MS,100	18	1000	Unknown		05/05/2016 20:24	Finished	MS (5ppb), IWST-160401B, 0.10>
77	N019560-007A,SAMP,500	19	1000	Unknown		05/05/2016 20:34	Finished	SAMP, 20uL>10mL
78	N019560-007AMS,MS,500	20	1000	Unknown		05/05/2016 20:44	Finished	MS (5ppb), IWST-160401B, 20uL>
79	N019560-008A,SAMP,100	21	1000	Unknown		05/05/2016 20:54	Finished	SAMP, 0.10>10mL
80	N019560-008AMS,MS,100	22	1000	Unknown		05/05/2016 21:04	Finished	MS (5ppb), IWST-160401B, 0.10>
81	CCV-7,CCV,1	23	1000	Unknown		05/05/2016 21:13	Finished	CCV @ 5ppb, IWST-160401A
82	CCB-7,CCB,1	24	1000	Unknown		05/05/2016 21:23	Finished	CCB
83	N019560-009A,SAMP,1	25	1000	Unknown		05/05/2016 21:33	Finished	SAMP, 10mL
84	N019560-009AMS,MS,1	26	1000	Unknown		05/05/2016 21:43	Finished	MS (5ppb), IWST-160401B, 10 mL
85	N019560-010A,SAMP,1	27	1000	Unknown		05/05/2016 21:53	Finished	SAMP, 10mL
86	N019560-010AMS,MS,1	28	1000	Unknown		05/05/2016 22:03	Finished	MS (5ppb), IWST-160401B, 10 mL
87	N019560-011A,SAMP,20	29	1000	Unknown		05/05/2016 22:13	Finished	SAMP, 0.5> 10mL
88	N019560-011AMS,MS,20	30	1000	Unknown		05/05/2016 22:23	Finished	MS (5ppb), IWST-160401B, 0.5>1
89	N019560-012A,SAMP,200	31	1000	Unknown		05/05/2016 22:33	Finished	SAMP, 50uL>10mL
90	N019560-012AMS,MS,200	32	1000	Unknown		05/05/2016 22:43	Finished	MS (5ppb), IWST-160401B, 50uL>
91	N019560-013,SAMP,1	33	1000	Unknown		05/05/2016 22:53	Finished	SAMP, 10mL
92	N019560-013AMS,MS,1	34	1000	Unknown		05/05/2016 23:03	Finished	MS (1ppb), IWST-160401B, 10 mL
93	CCV-8-CCV1,1	35	1000	Unknown		05/05/2016 23:13	Finished	CCV @ 10ppb, IWST-160401A
94	CCB-8-CCB,1	36	1000	Unknown		05/05/2016 23:23	Finished	CCB
95	SHUTDOWN	37	1000	Unknown		05/05/2016 23:33	Finished	
96	Eluent: R160503A	38	1000	Unknown		n.a.	Finished	Eluent
97	PCR: R160504A	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.007	0.031	100.00	100.00	0.0114
Total:			**0.007**	**0.031**	**100.00**	**100.00**	

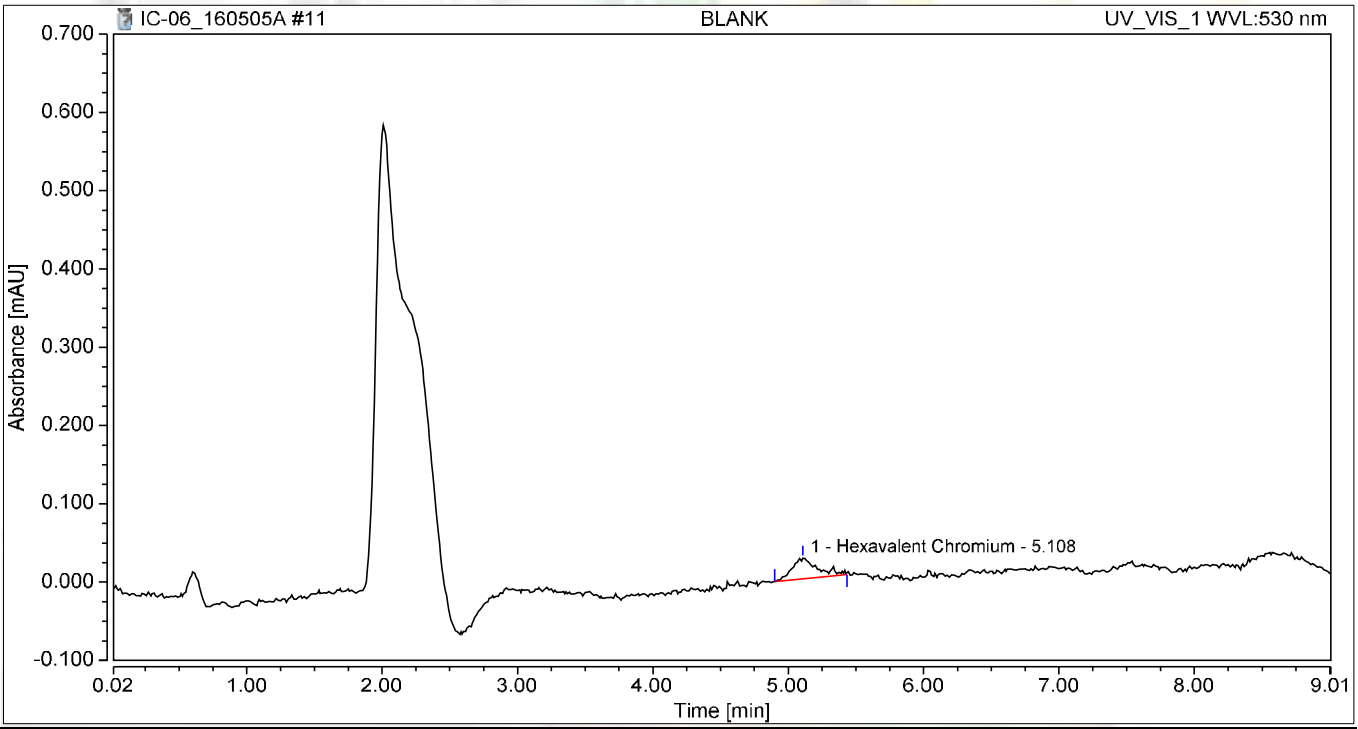
not reported

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.006	0.026	100.00	100.00	0.0064
Total:			**0.006**	**0.026**	**100.00**	**100.00**	

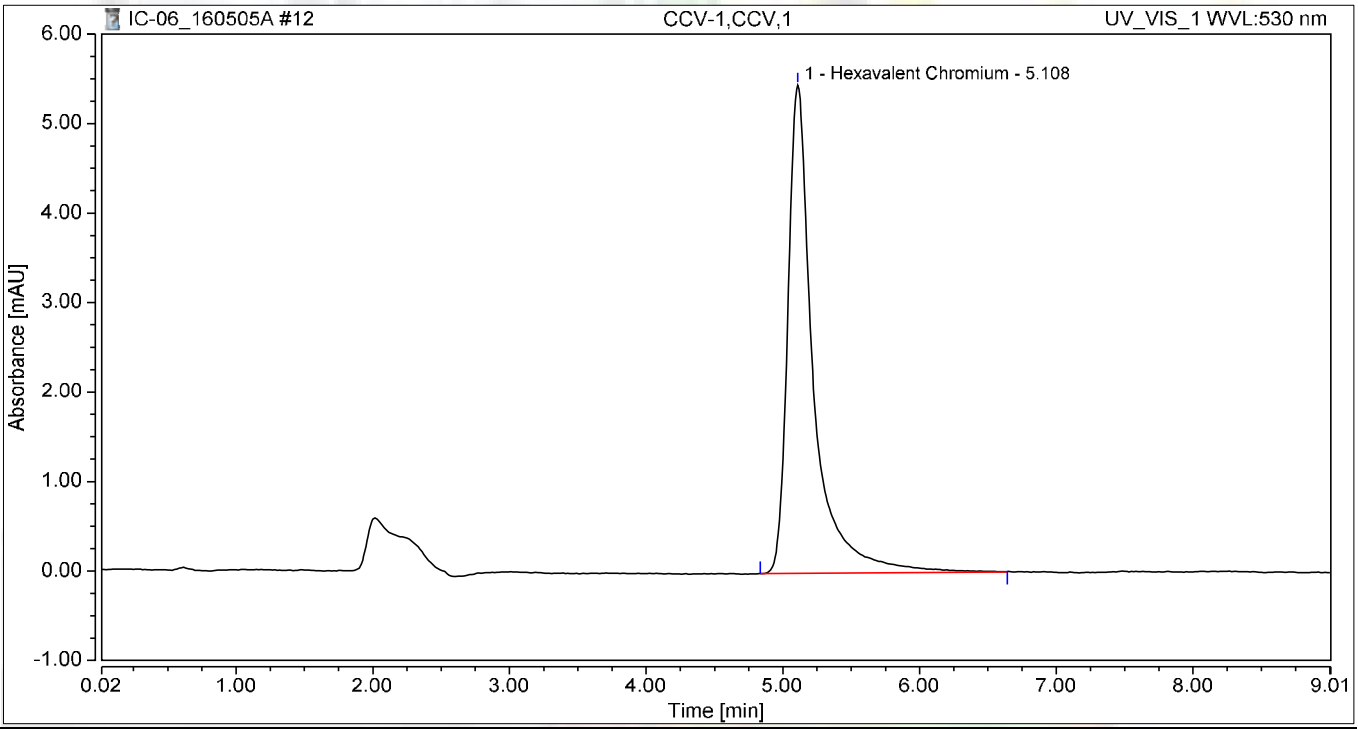
not reported

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

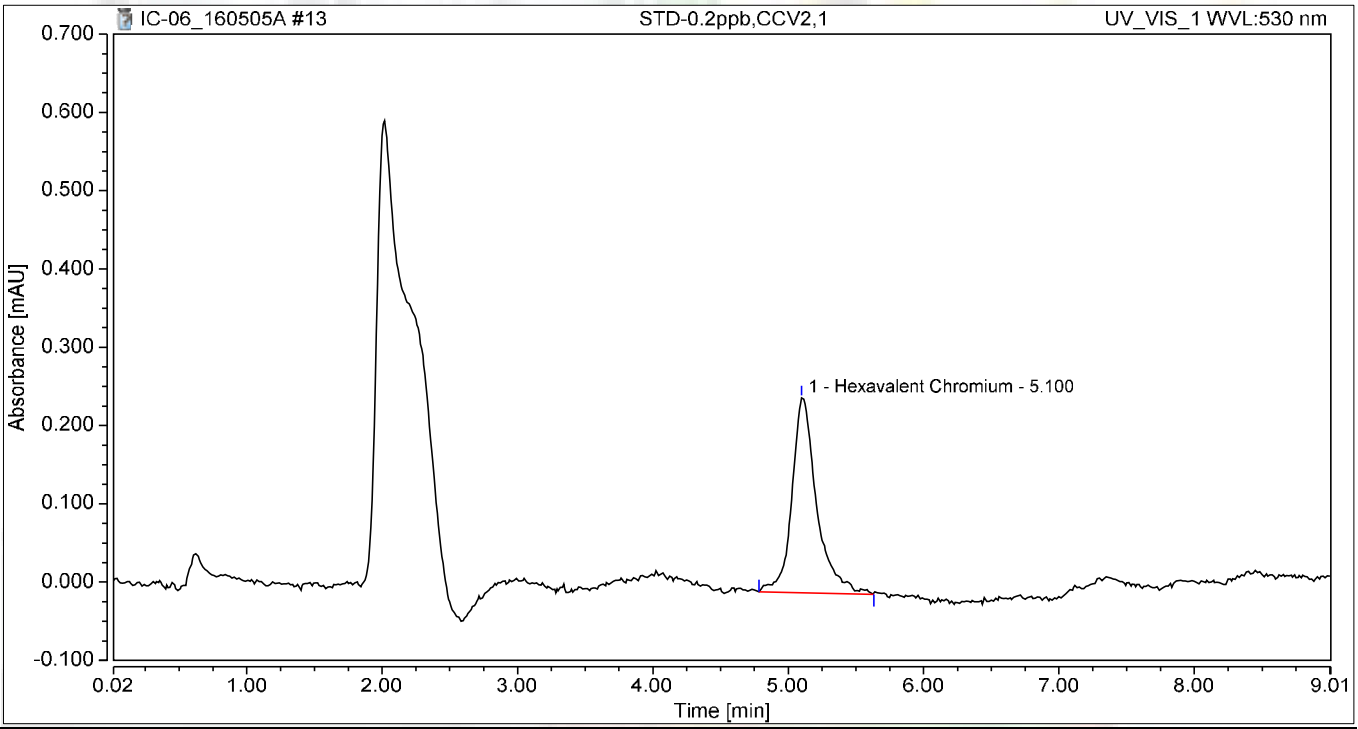
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.186	5.458	100.00	100.00	5.0592
Total:			**1.186**	**5.458**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

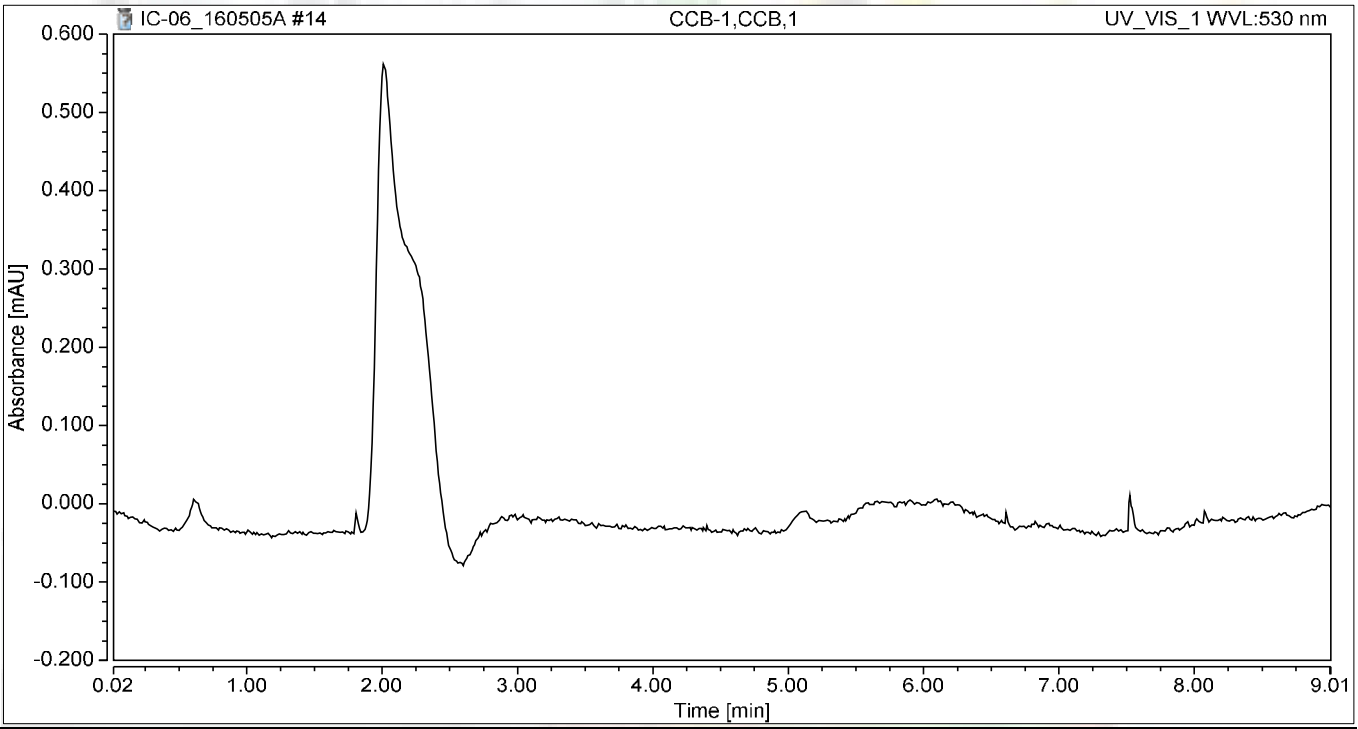
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.053	0.249	100.00	100.00	0.2087
Total:			**0.053**	**0.249**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

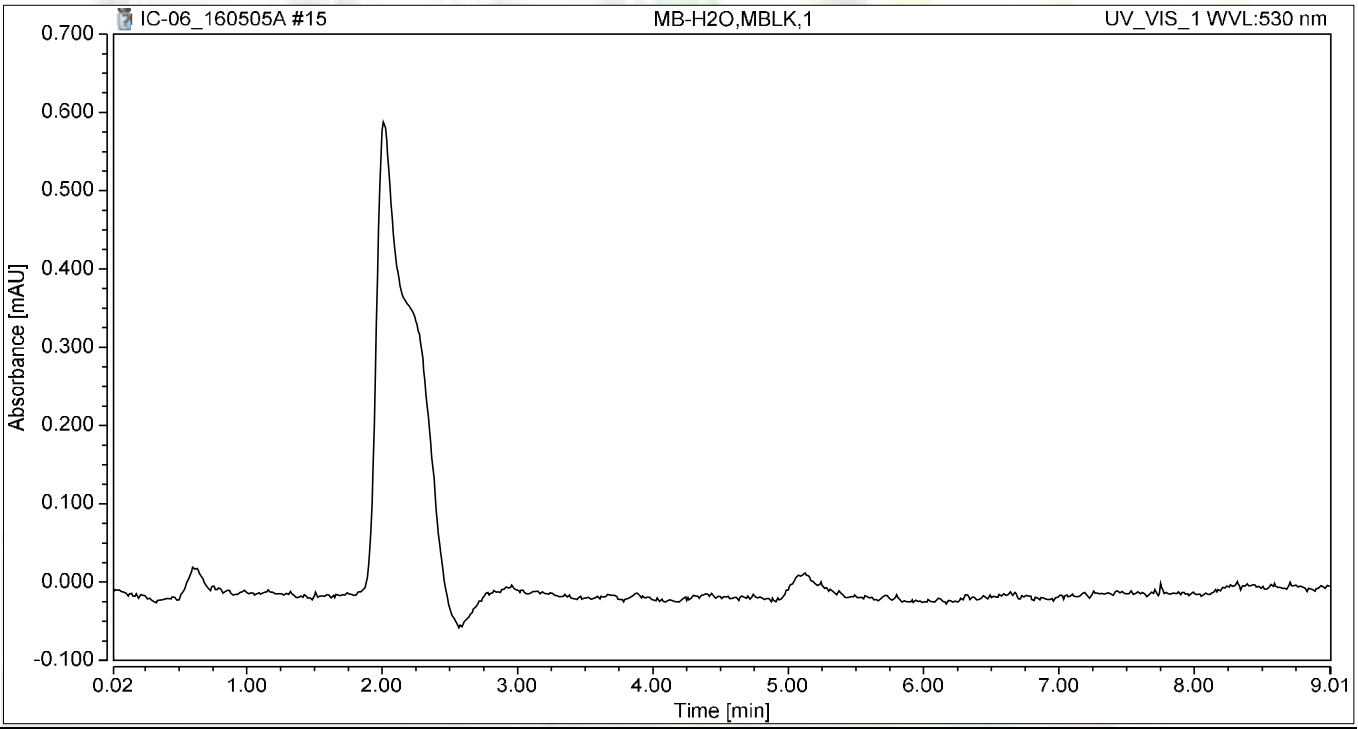
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

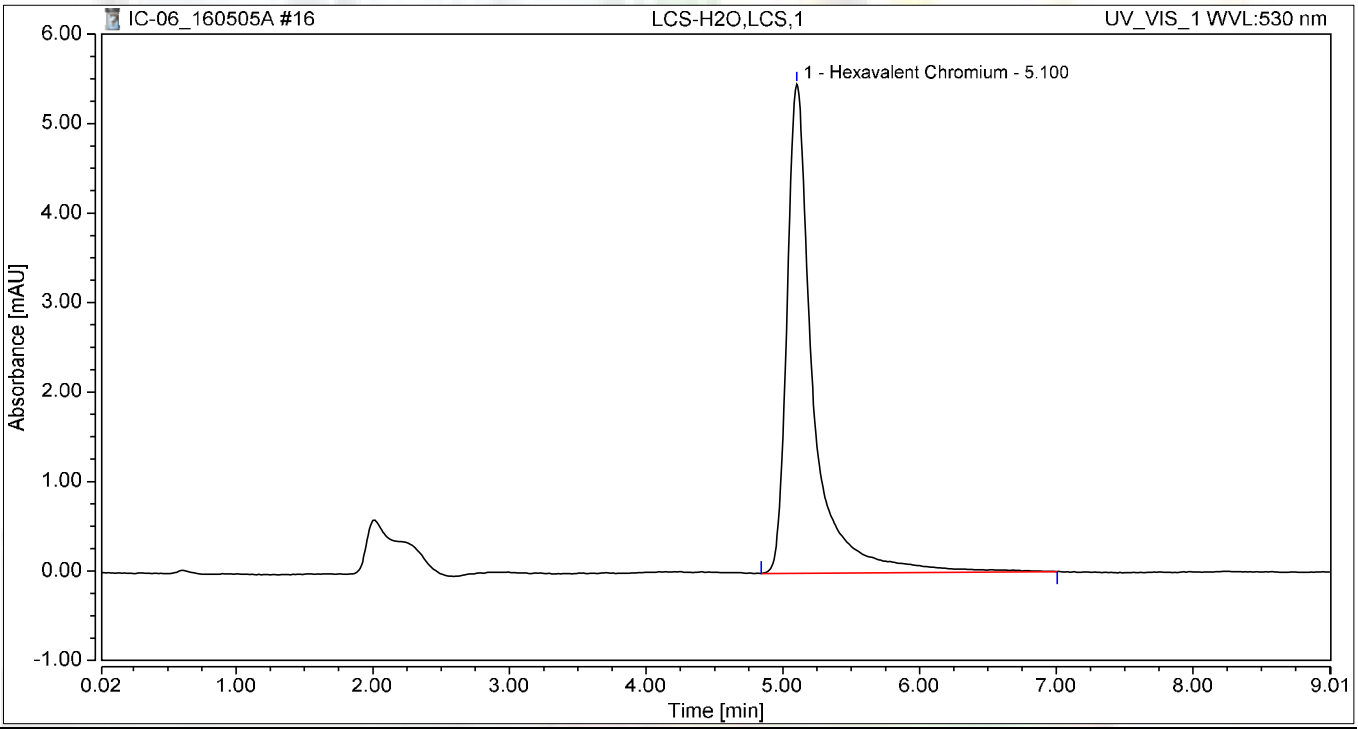
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

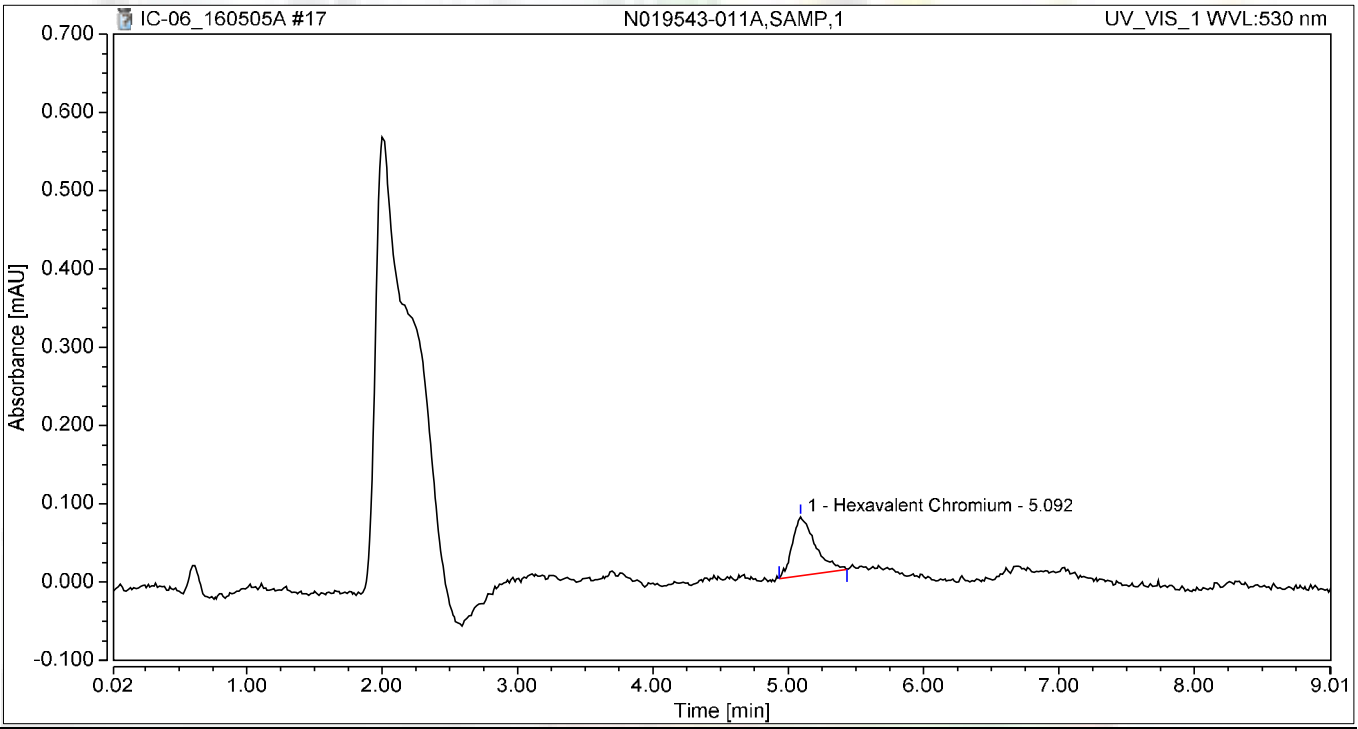
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.214	5.465	100.00	100.00	5.1786
Total:			**1.214**	**5.465**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-011A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

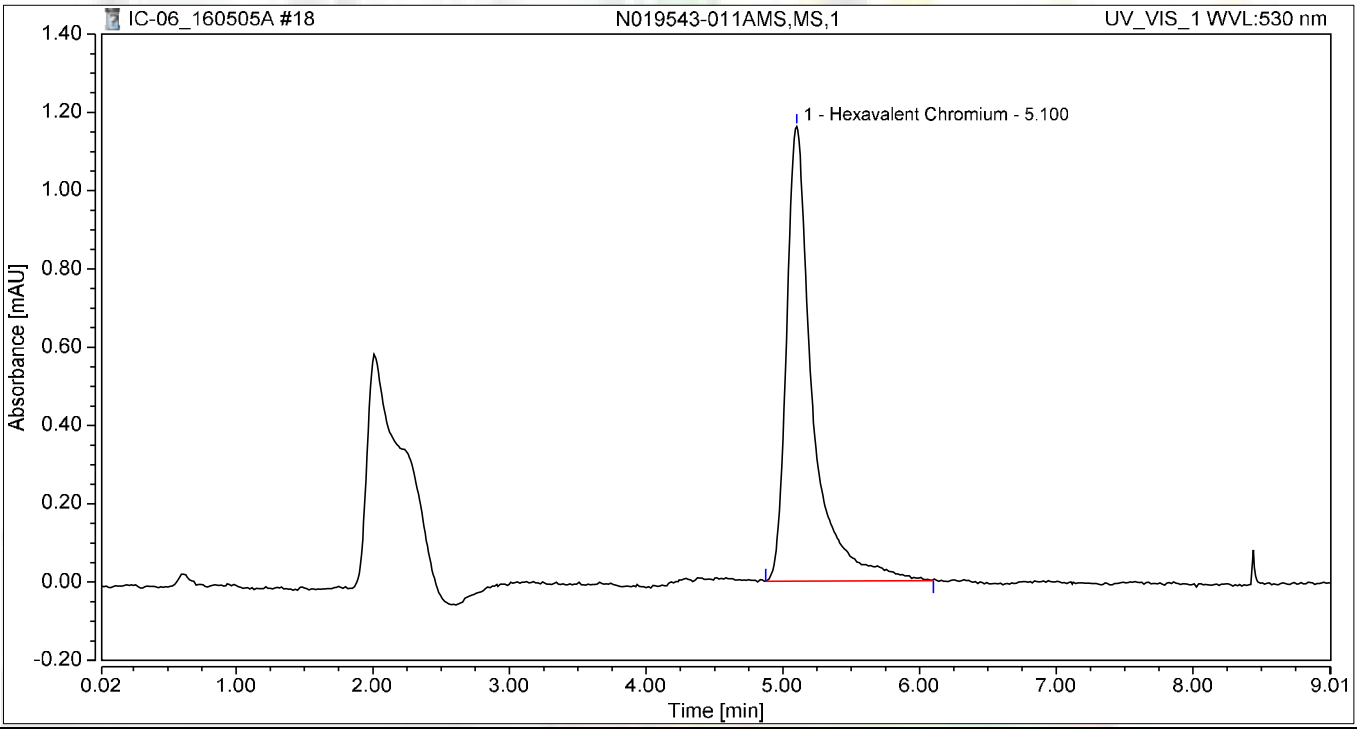
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.015	0.075	100.00	100.00	0.0458
Total:			**0.015**	**0.075**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-011AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

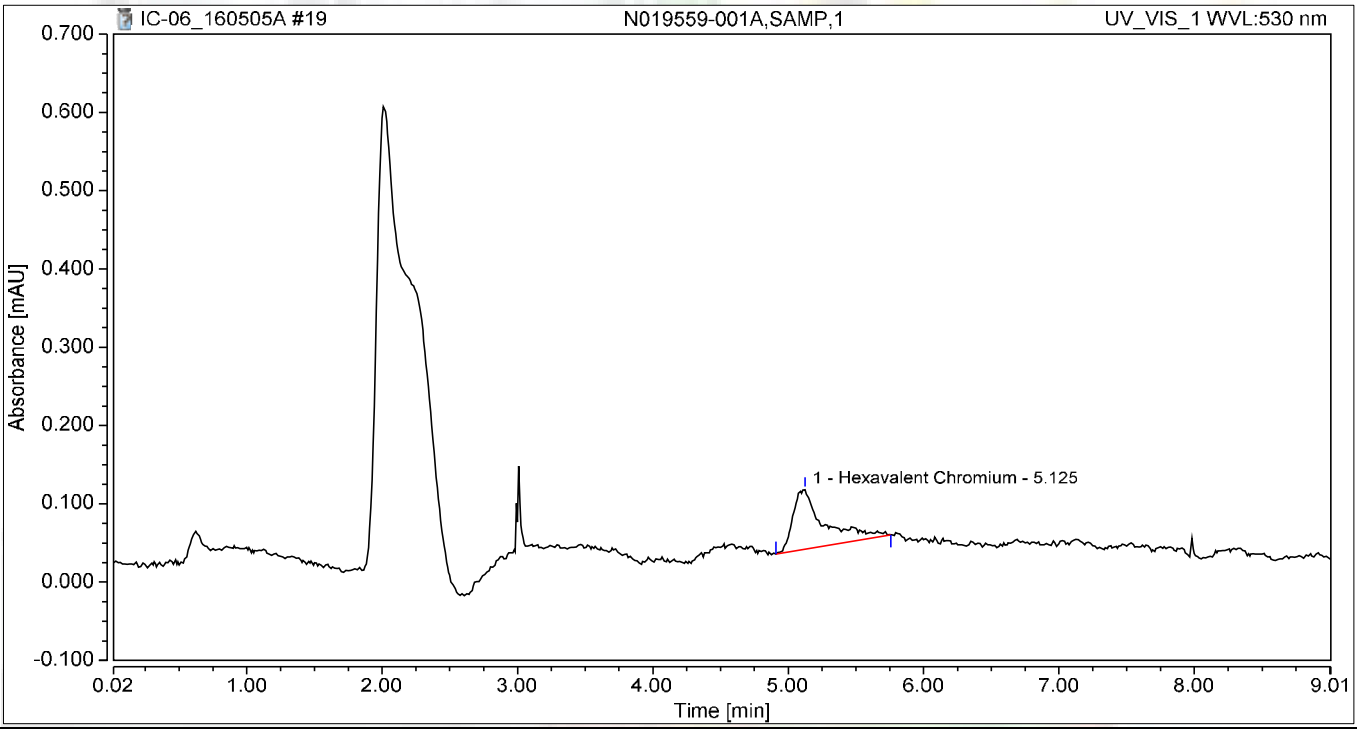
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.256	1.161	100.00	100.00	1.0774
Total:			**0.256**	**1.161**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

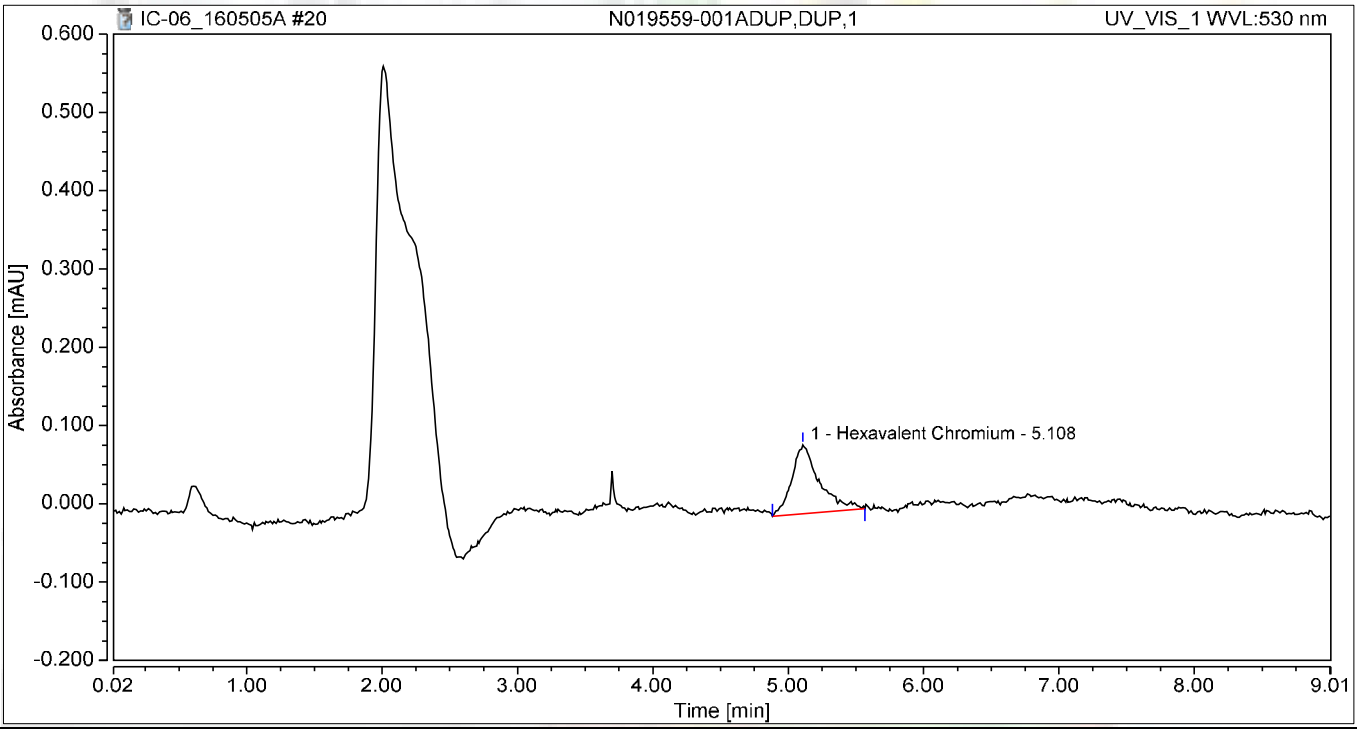
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.125	0.020	0.076	100.00	100.00	0.0690
Total:			**0.020**	**0.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-001ADUP,DUP,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

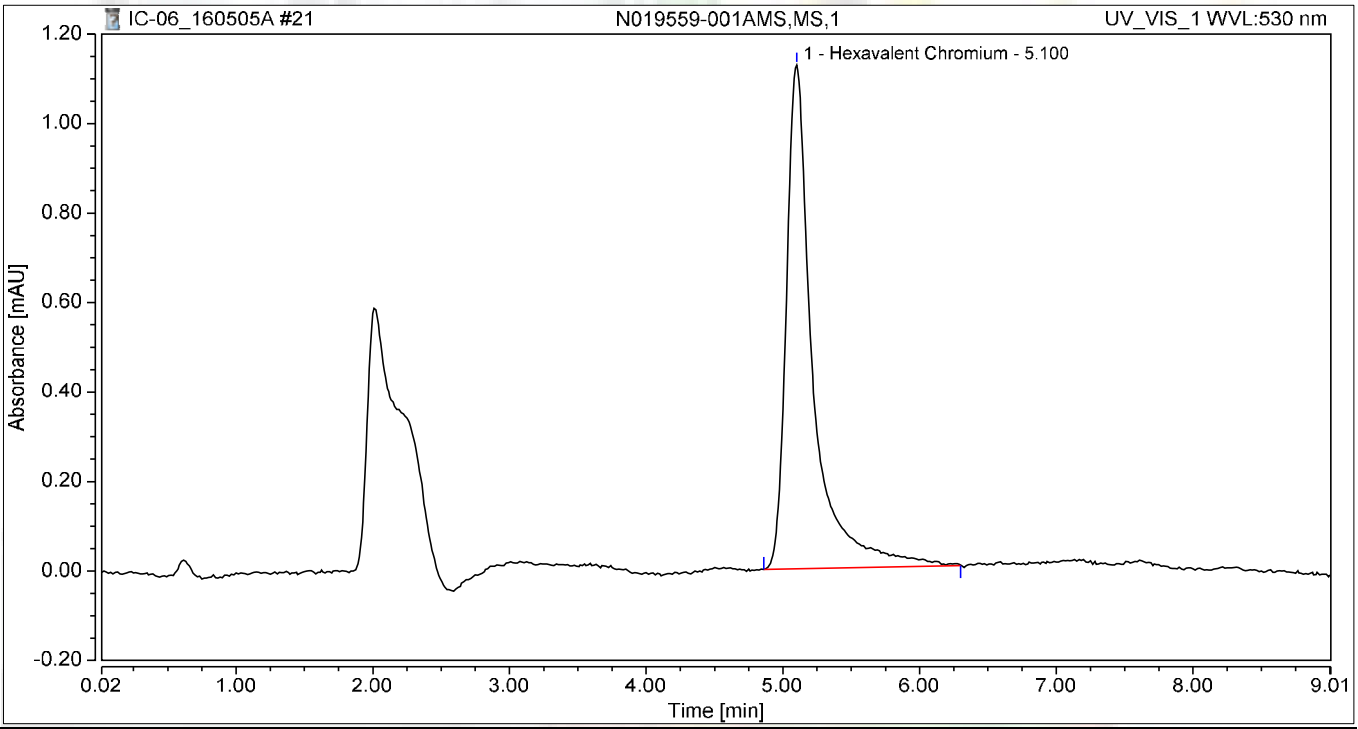
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.021	0.088	100.00	100.00	0.0711
Total:			**0.021**	**0.088**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

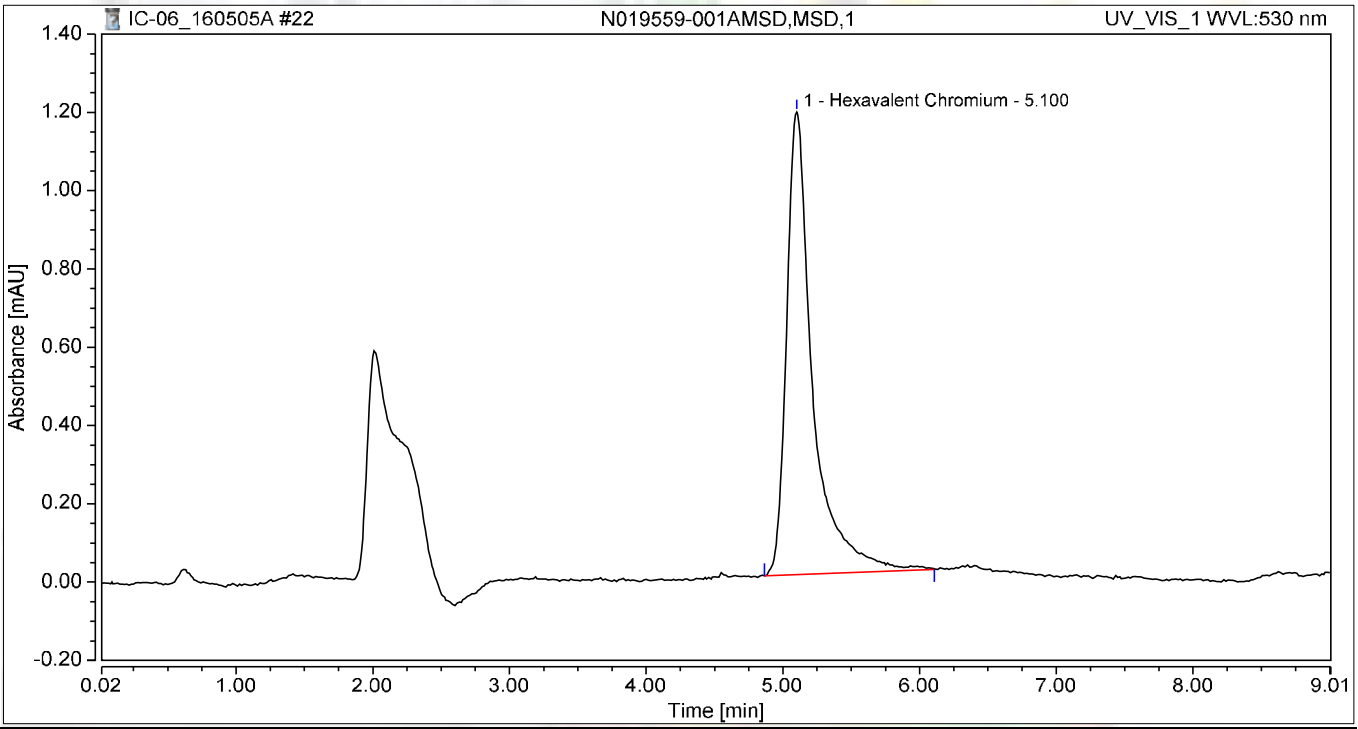
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.254	1.126	100.00	100.00	1.0698
Total:			**0.254**	**1.126**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-001AMSD,MSD,1**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

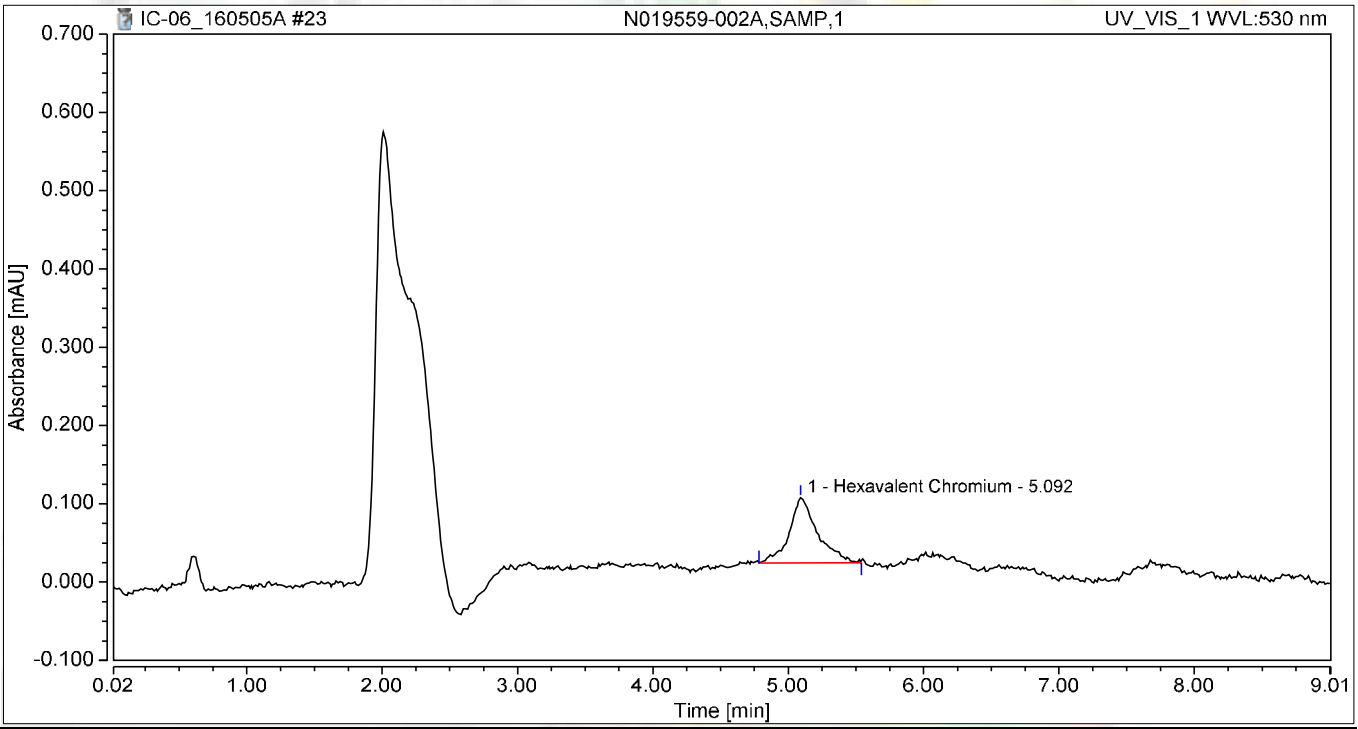
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.262	1.182	100.00	100.00	1.1041
Total:			**0.262**	**1.182**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-002A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

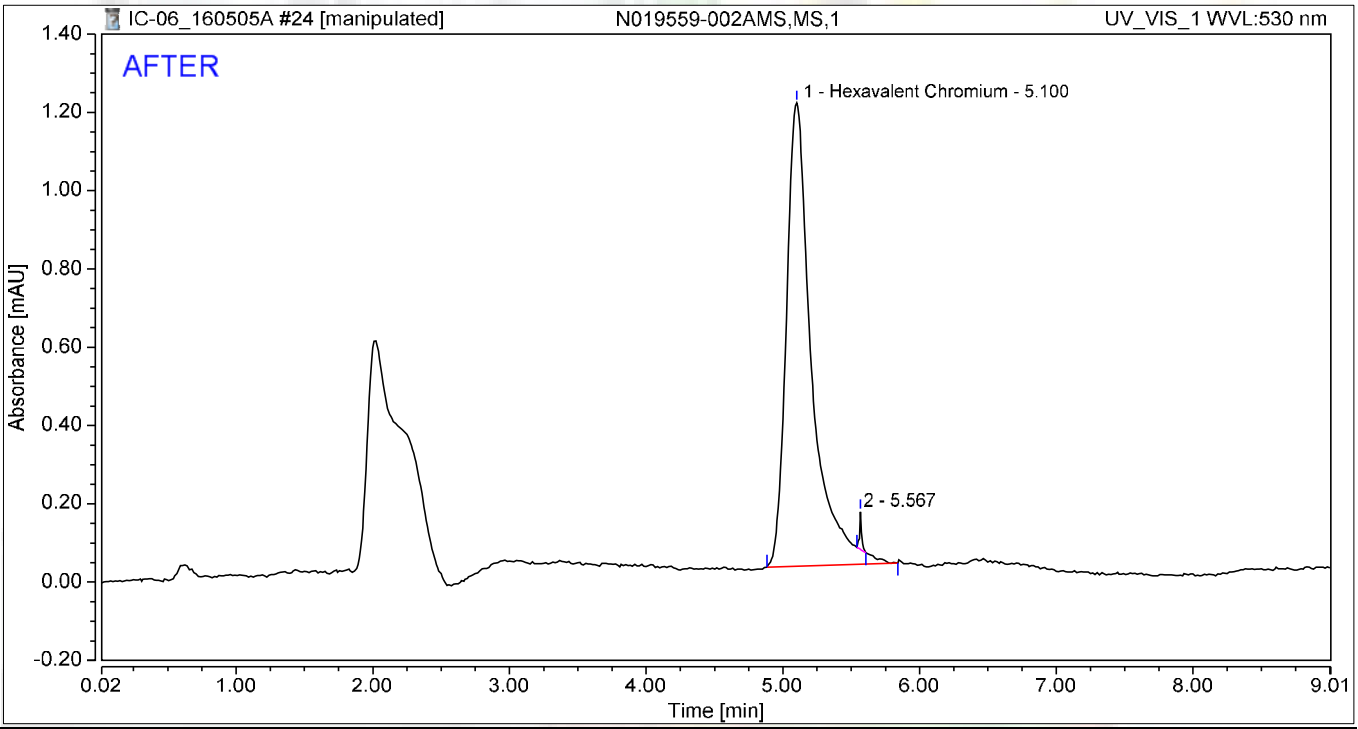
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.020	0.083	100.00	100.00	0.0684
Total:			**0.020**	**0.083**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-002AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.254	1.183	99.30	92.48	1.0680
2		5.567	0.002	0.096	0.70	7.52	n.a.
Total:			**0.255**	**1.280**	**100.00**	**100.00**	

JAS 5/10/2016

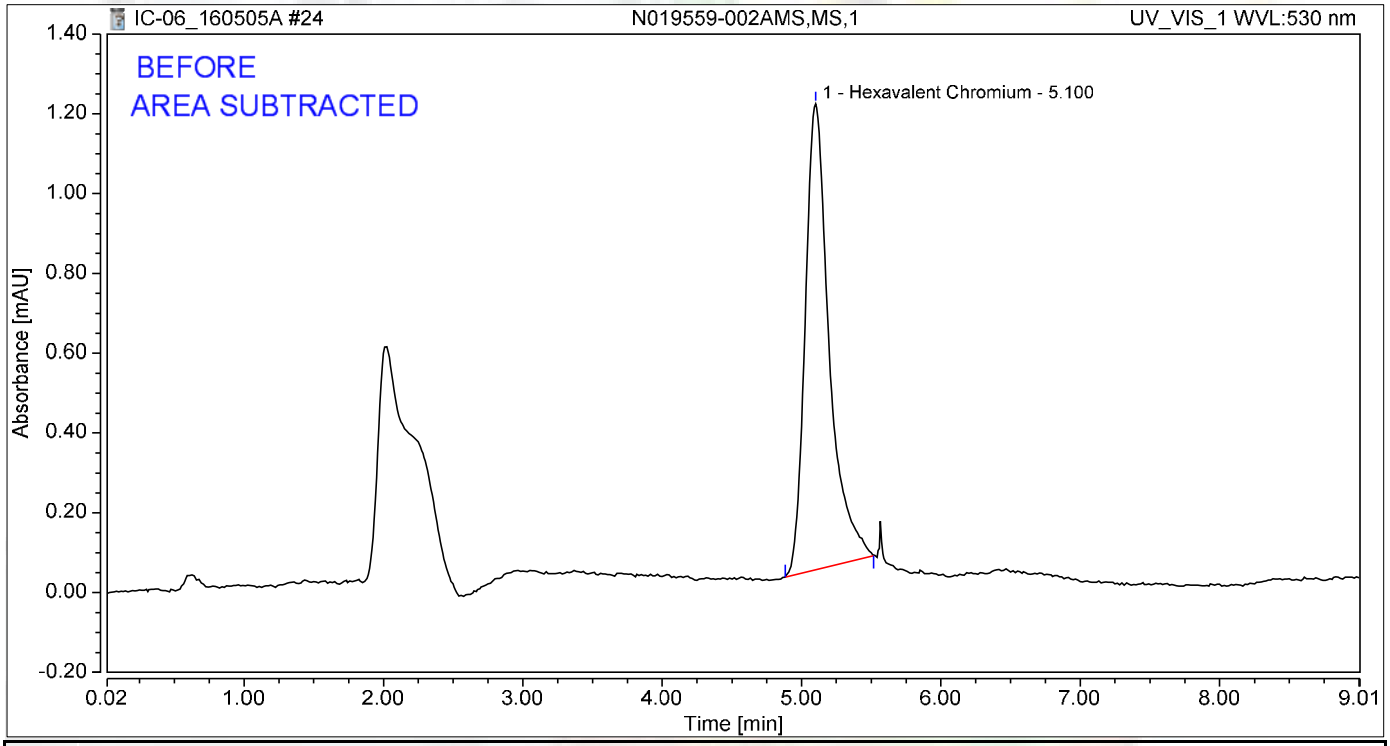
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019559-002AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.233	1.167	100.00	100.00	0.9781
Total:			**0.233**	**1.167**	**100.00**	**100.00**	

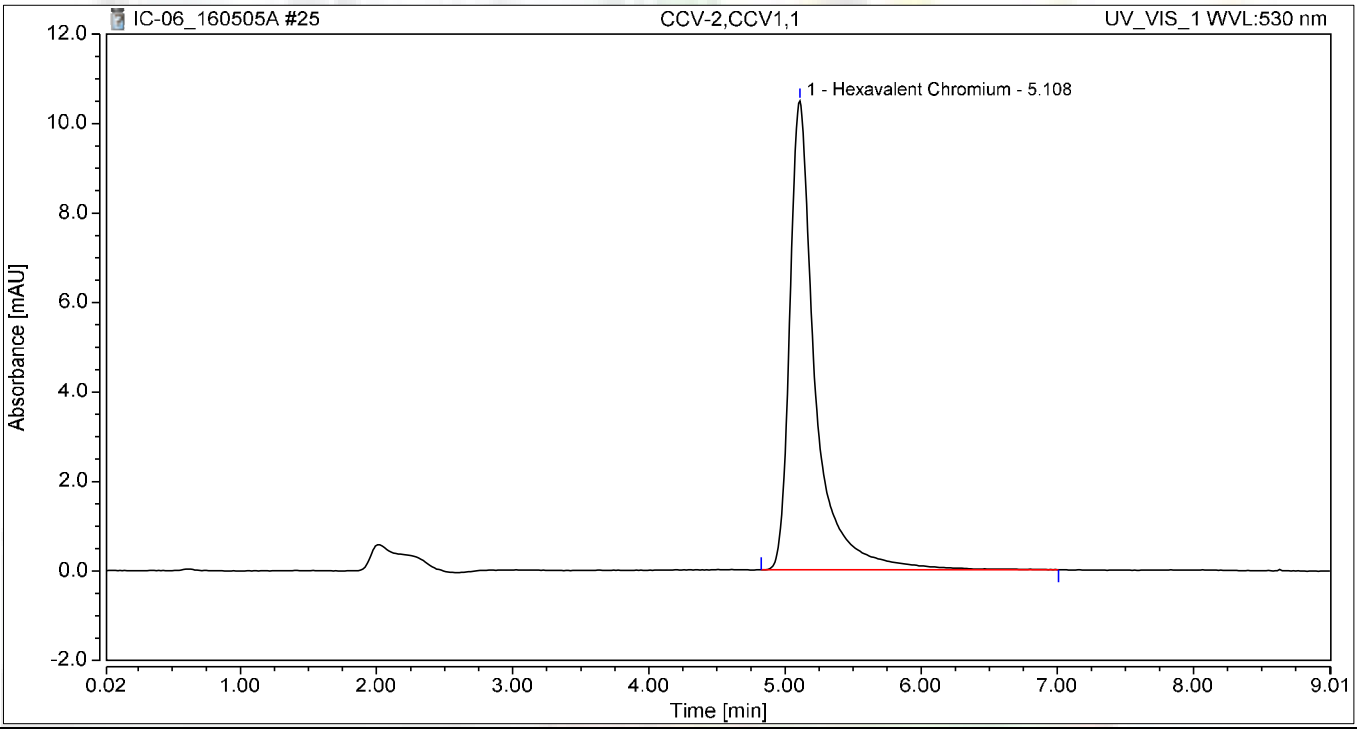
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

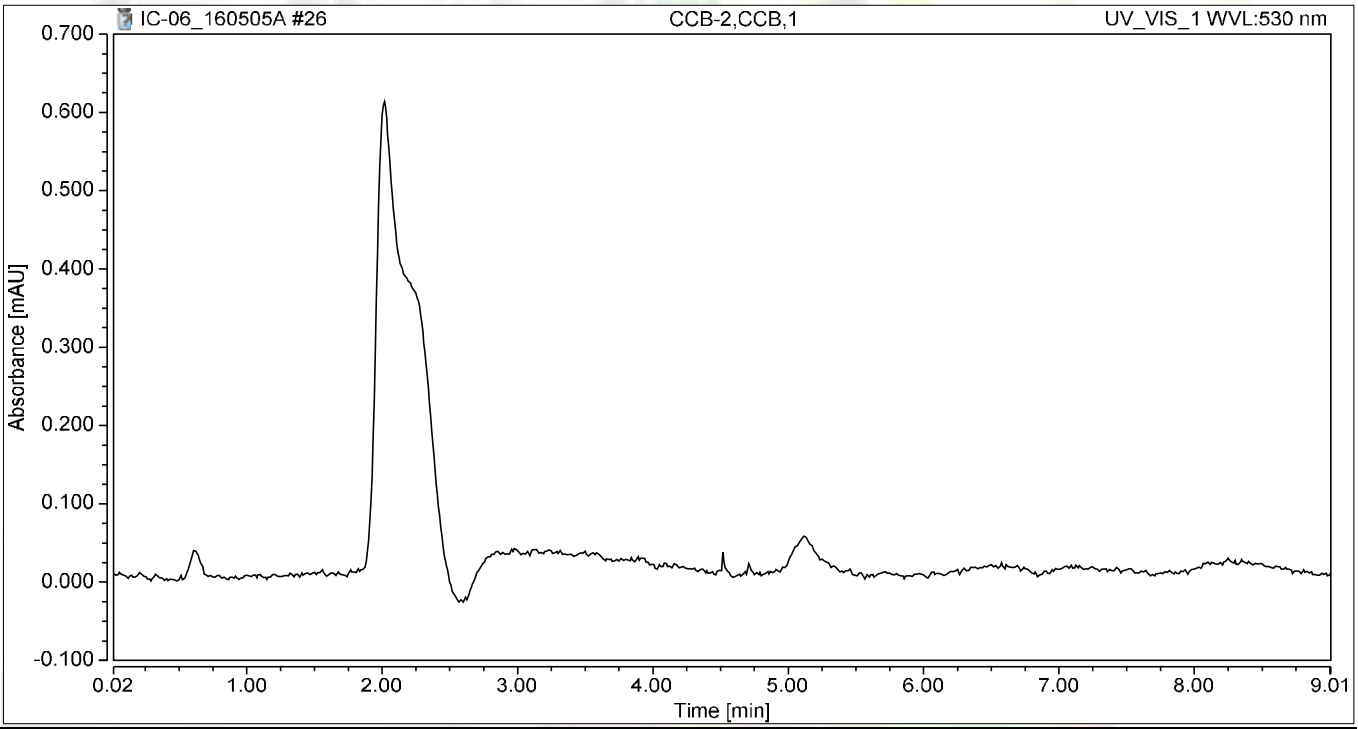
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.282	10.488	100.00	100.00	9.7528
Total:			**2.282**	**10.488**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

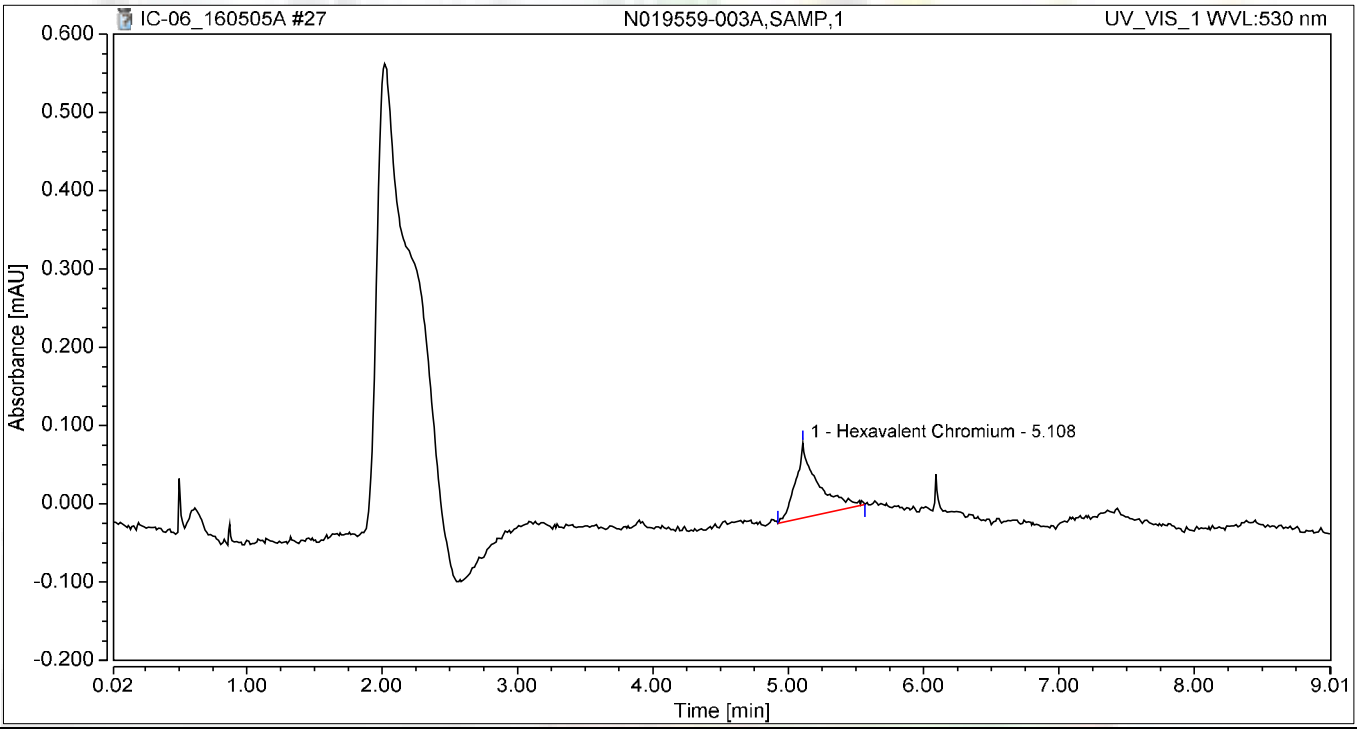
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

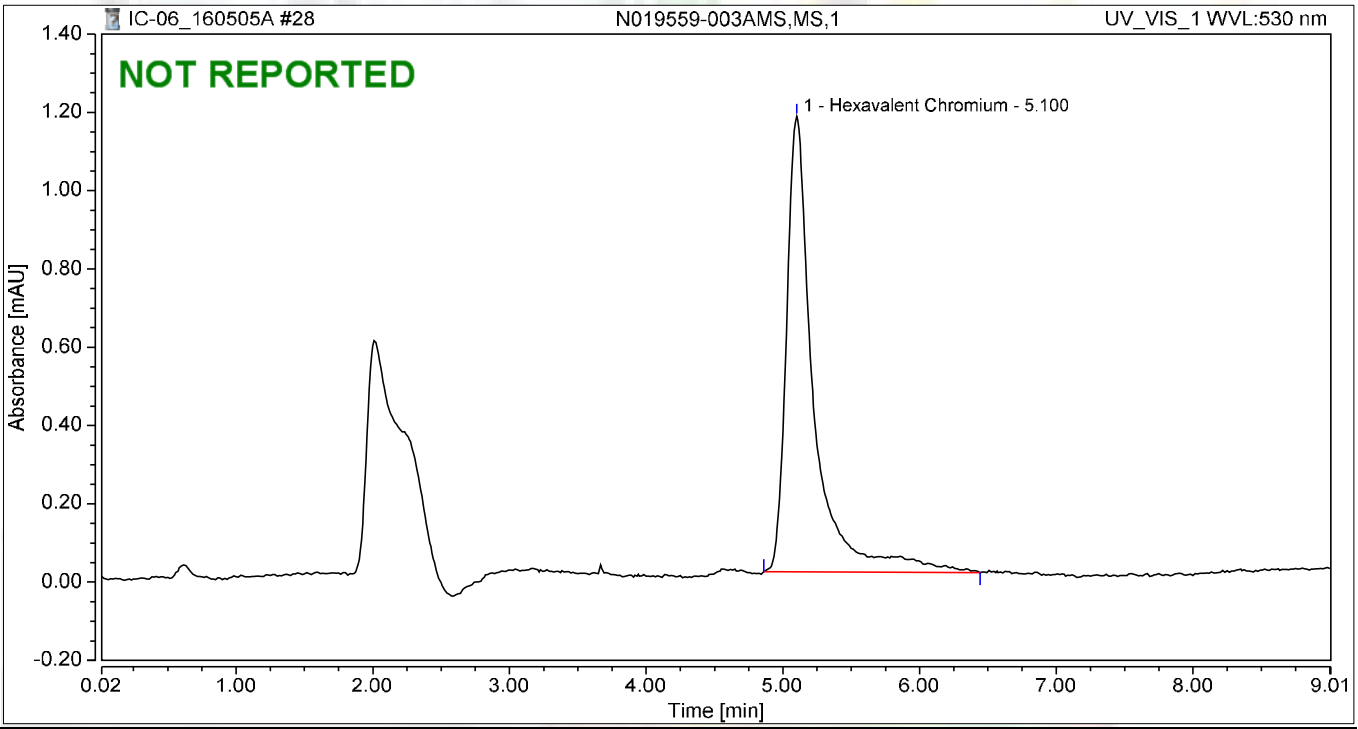
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.018	0.096	100.00	100.00	0.0596
Total:			**0.018**	**0.096**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-003AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

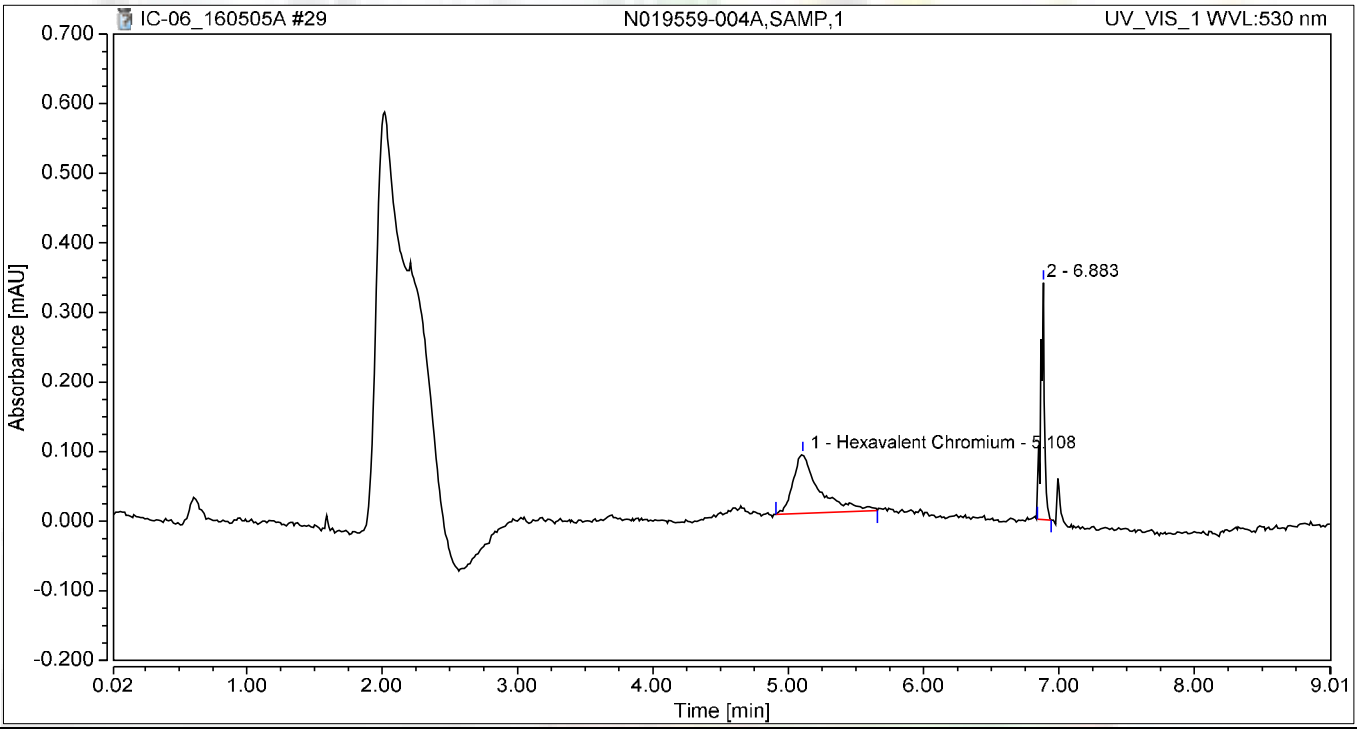
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.270	1.163	100.00	100.00	1.1376
Total:			**0.270**	**1.163**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-004A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

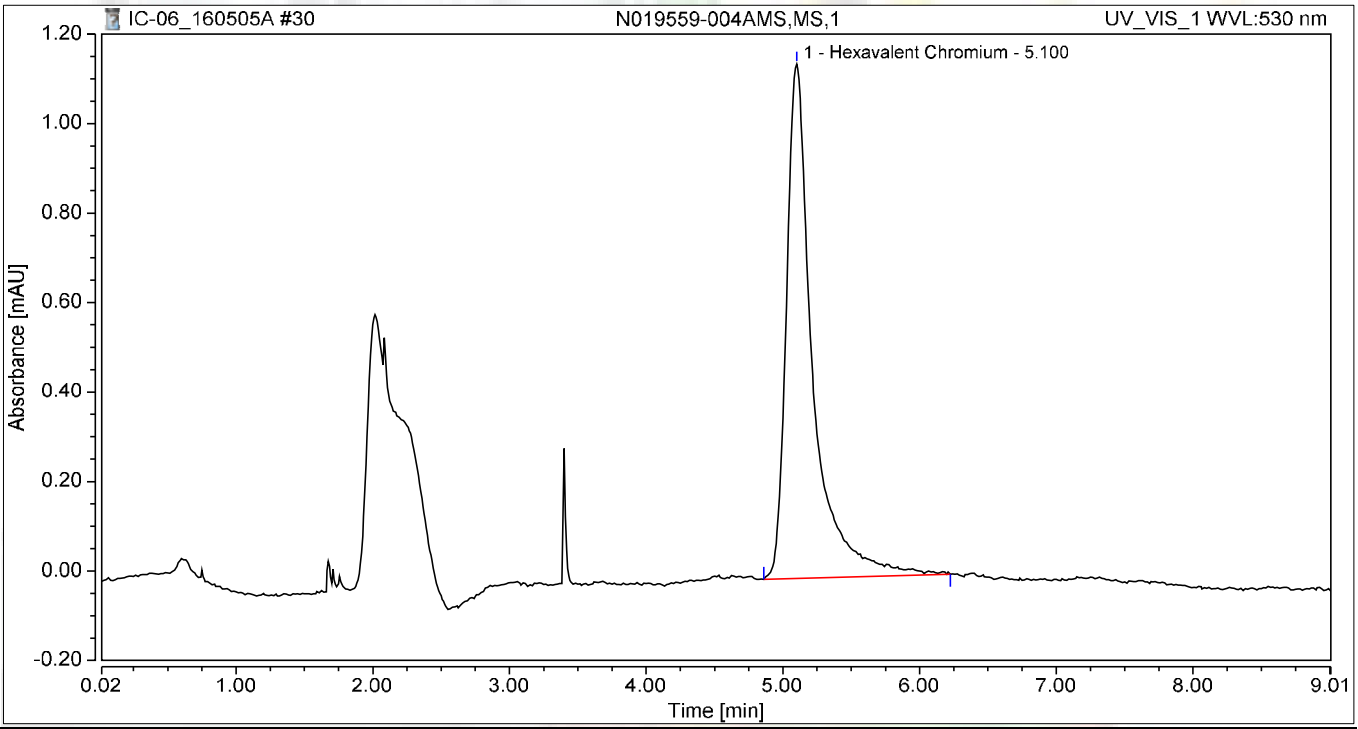
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.019	0.085	64.43	19.99	0.0647
2		6.883	0.011	0.340	35.57	80.01	n.a.
Total:			**0.030**	**0.425**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-004AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

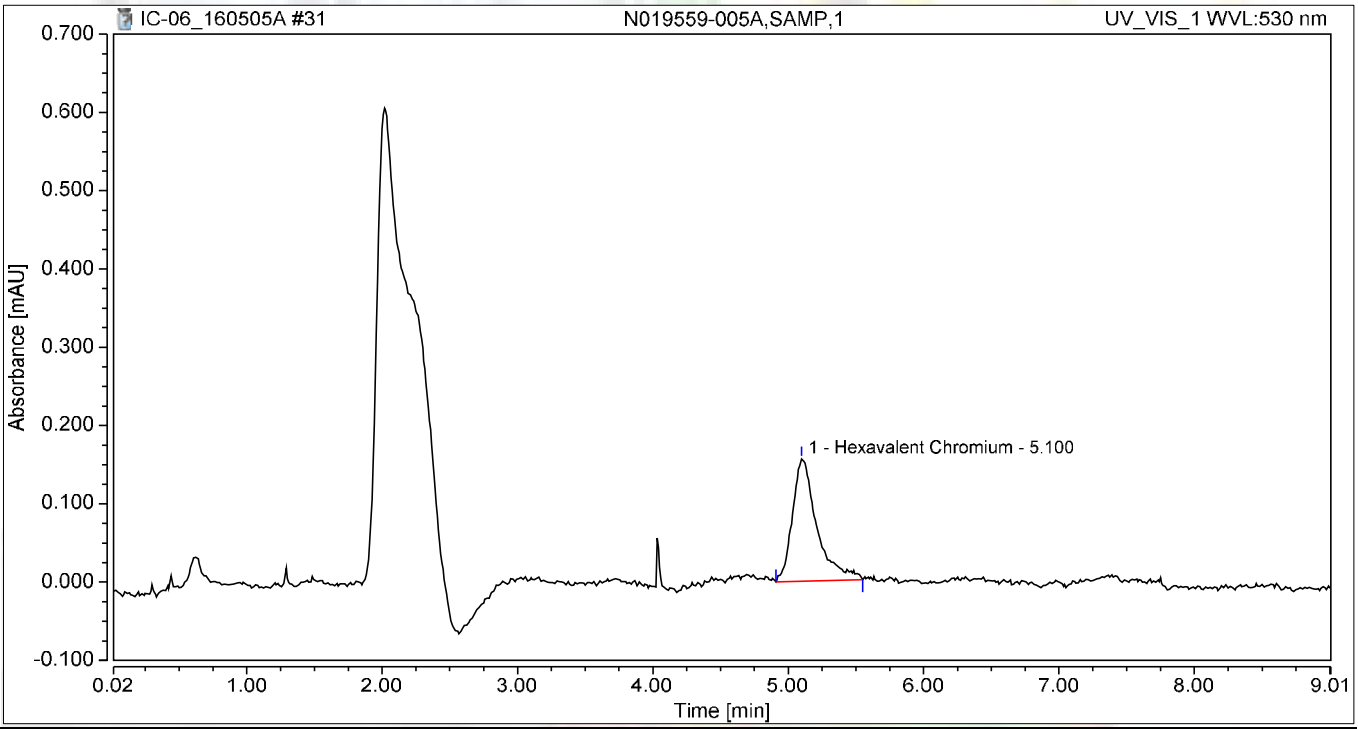
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.257	1.149	100.00	100.00	1.0819
Total:			**0.257**	**1.149**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-005A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

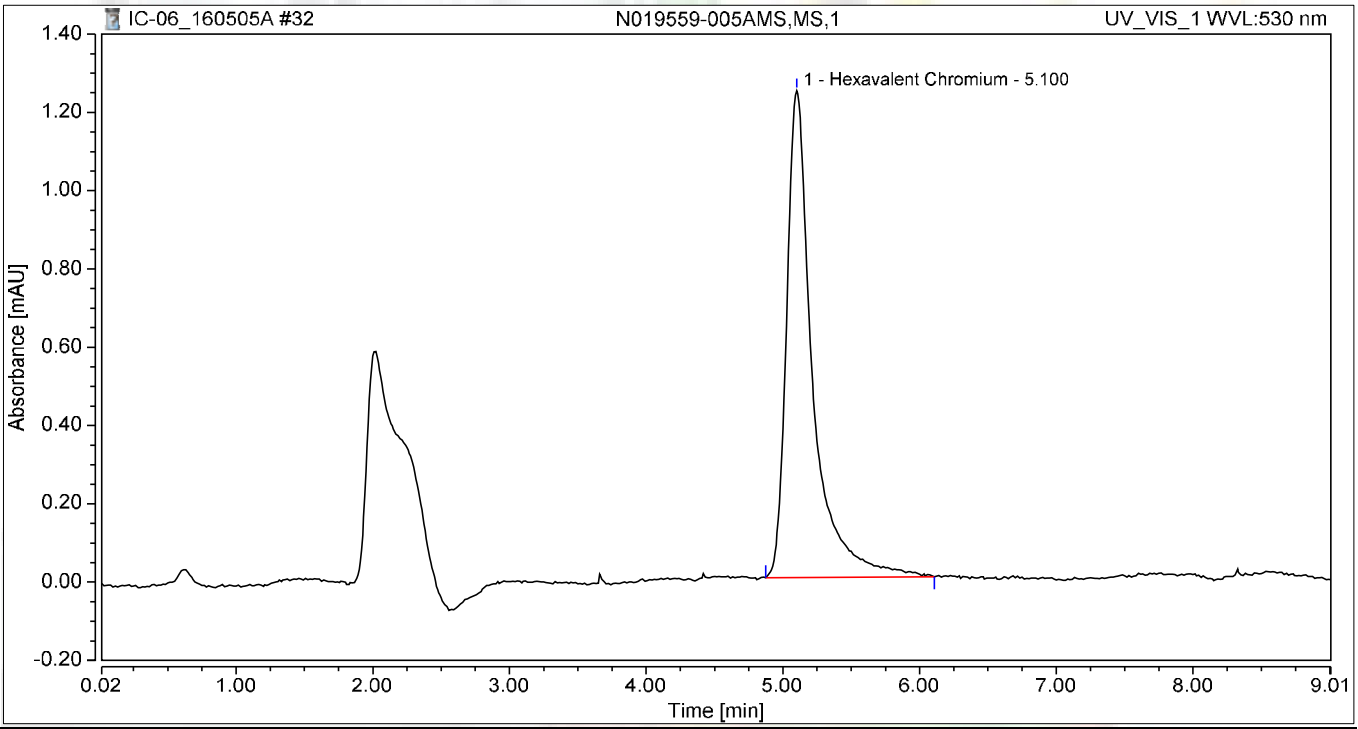
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.033	0.156	100.00	100.00	0.1224
Total:			**0.033**	**0.156**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-005AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

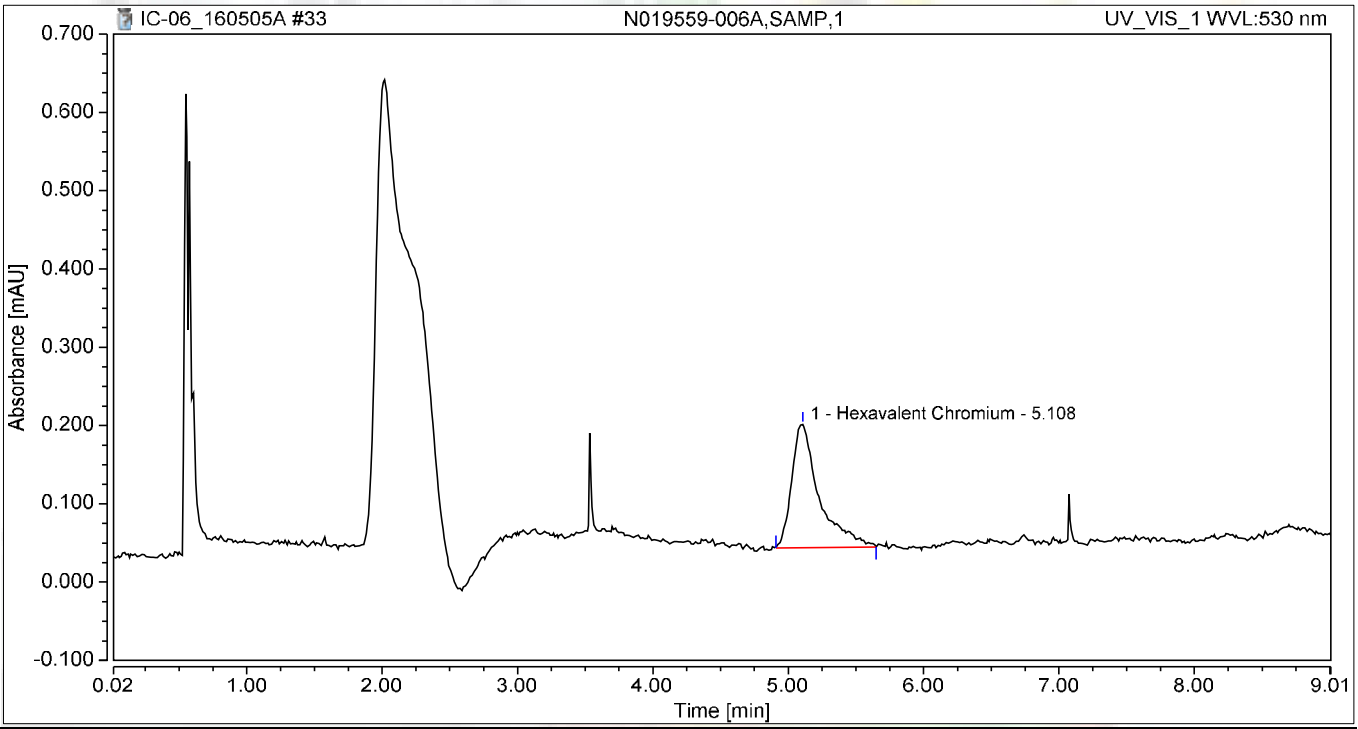
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.274	1.243	100.00	100.00	1.1545
Total:			**0.274**	**1.243**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-006A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

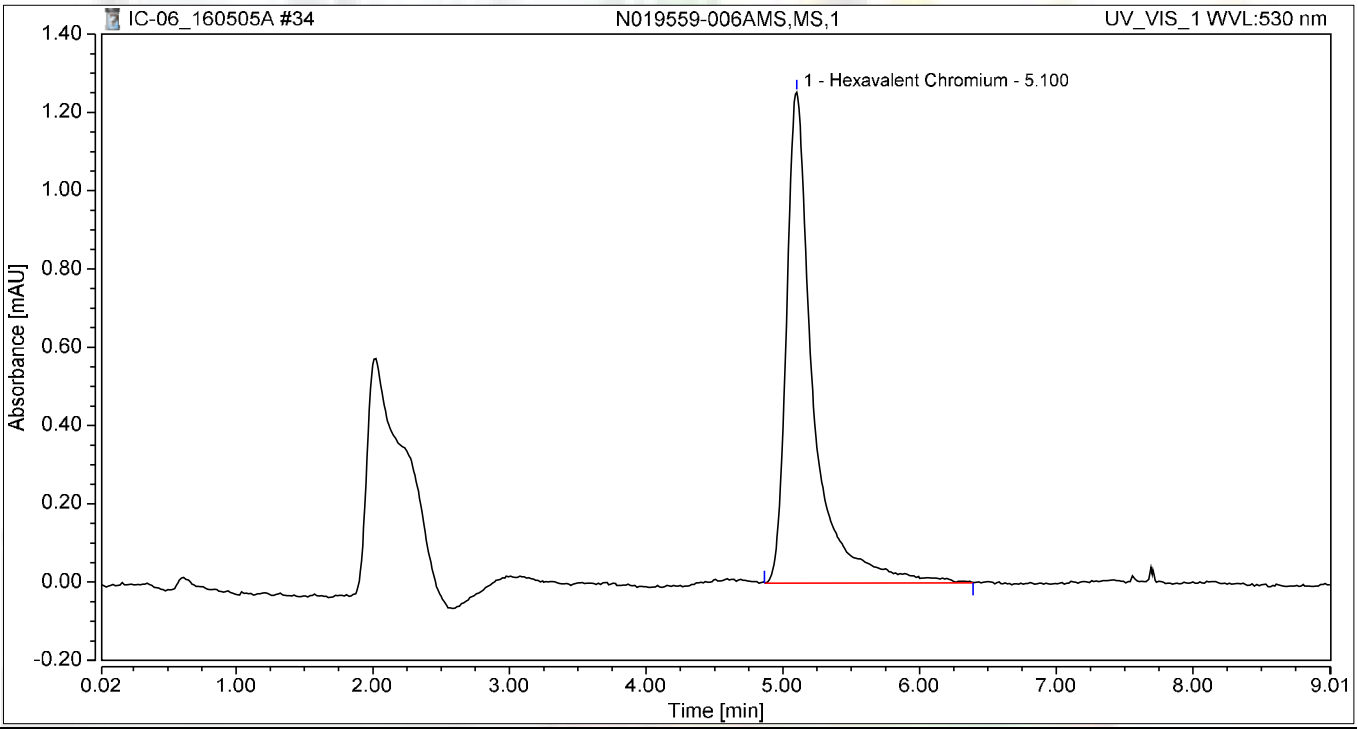
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.037	0.157	100.00	100.00	0.1407
Total:			**0.037**	**0.157**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-006AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

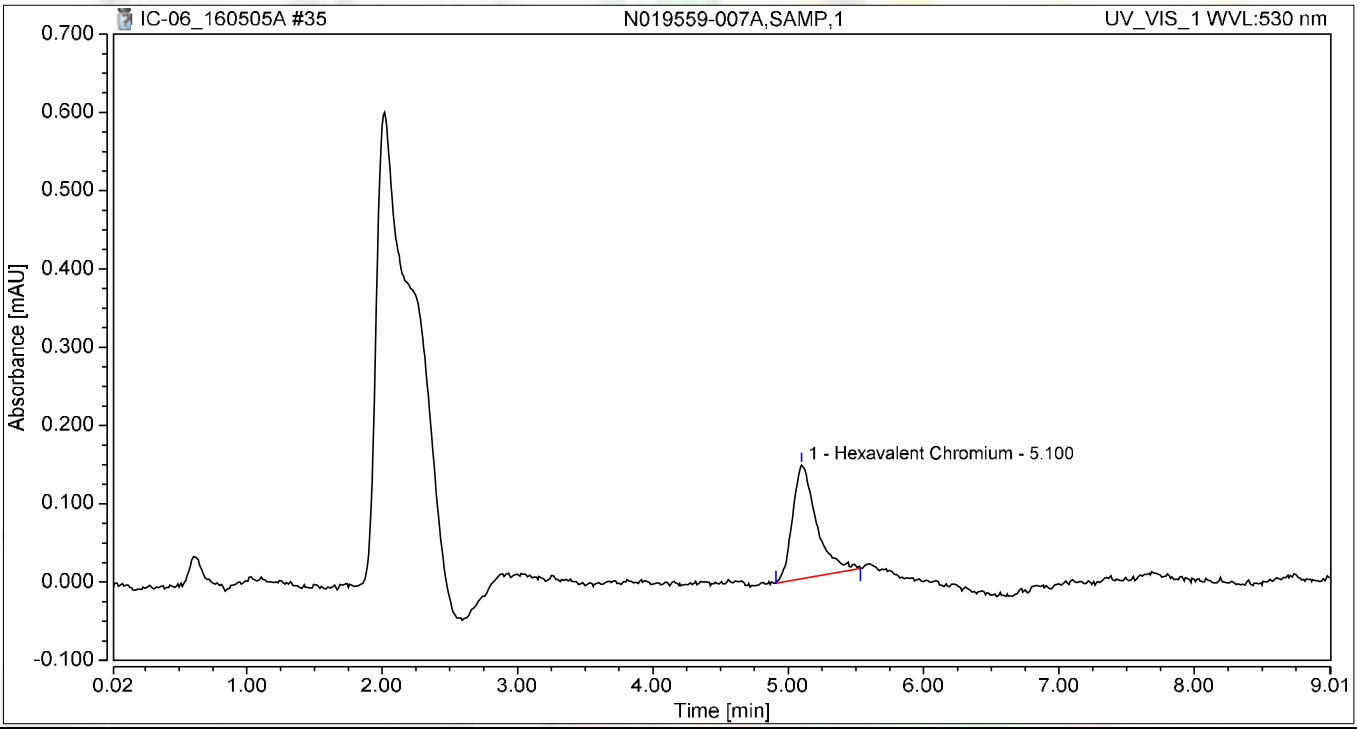
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.285	1.254	100.00	100.00	1.2006
Total:			**0.285**	**1.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-007A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

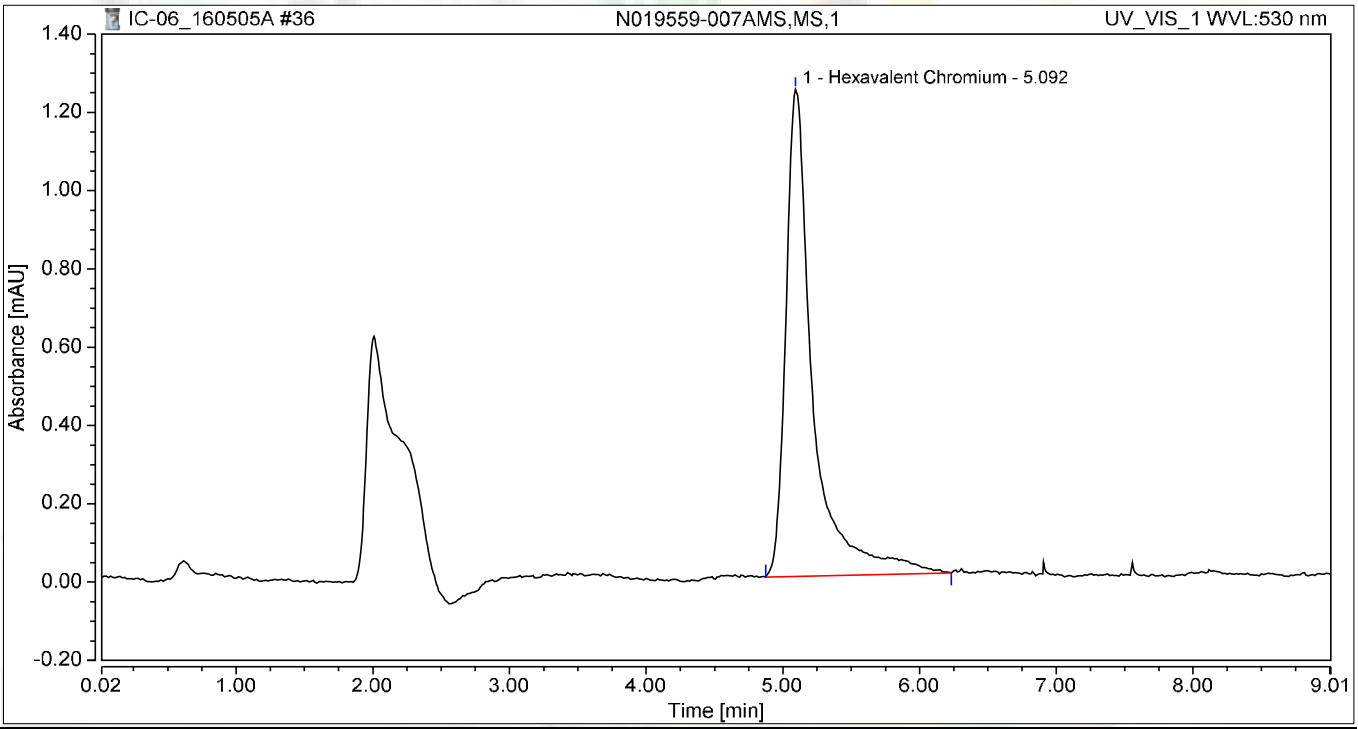
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.030	0.145	100.00	100.00	0.1106
Total:			**0.030**	**0.145**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-007AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

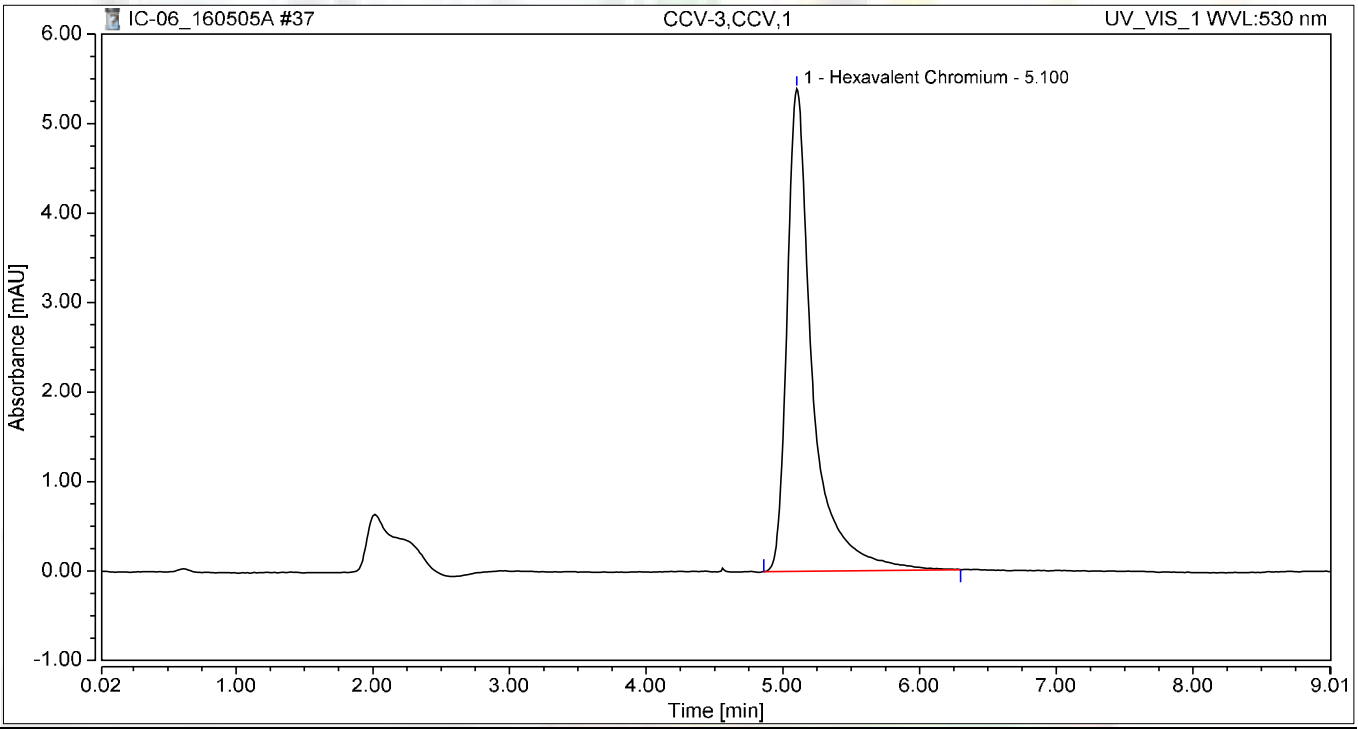
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.285	1.244	100.00	100.00	1.2020
Total:			**0.285**	**1.244**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

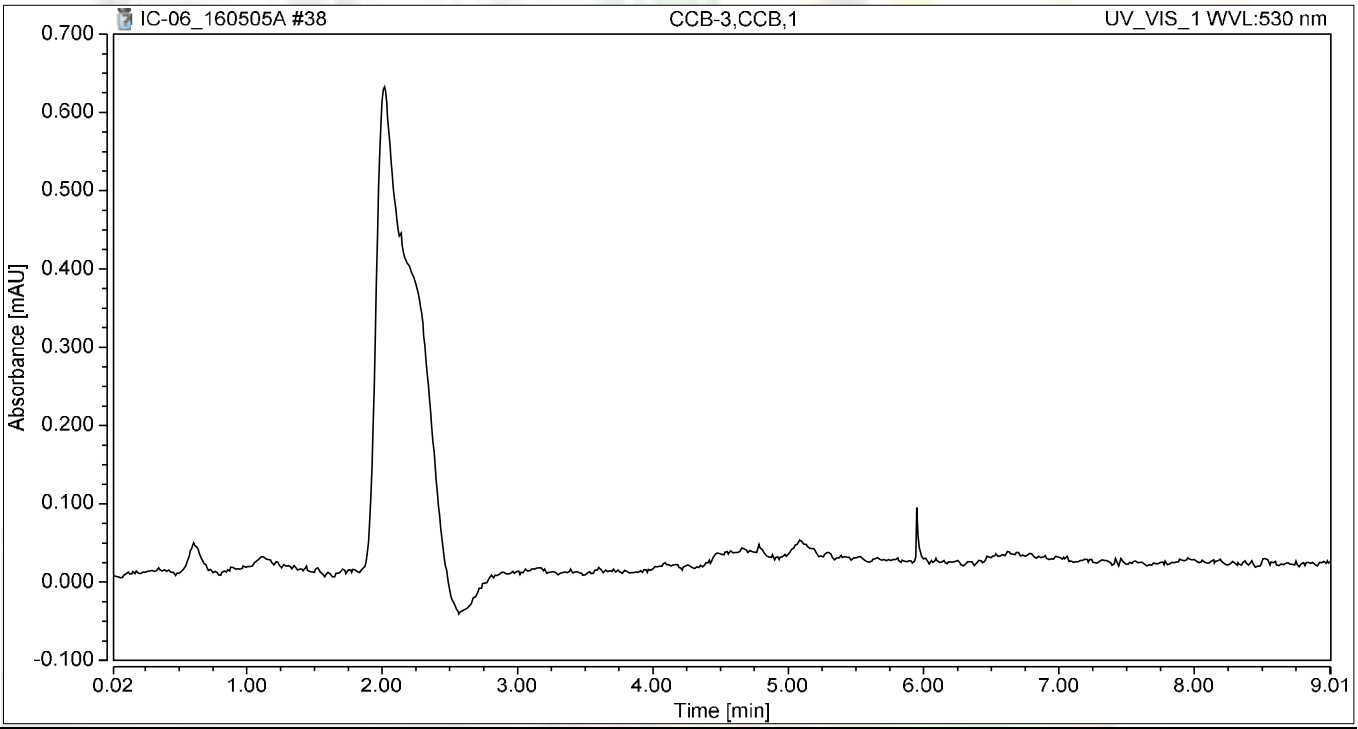
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.165	5.394	100.00	100.00	4.9702
Total:			**1.165**	**5.394**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

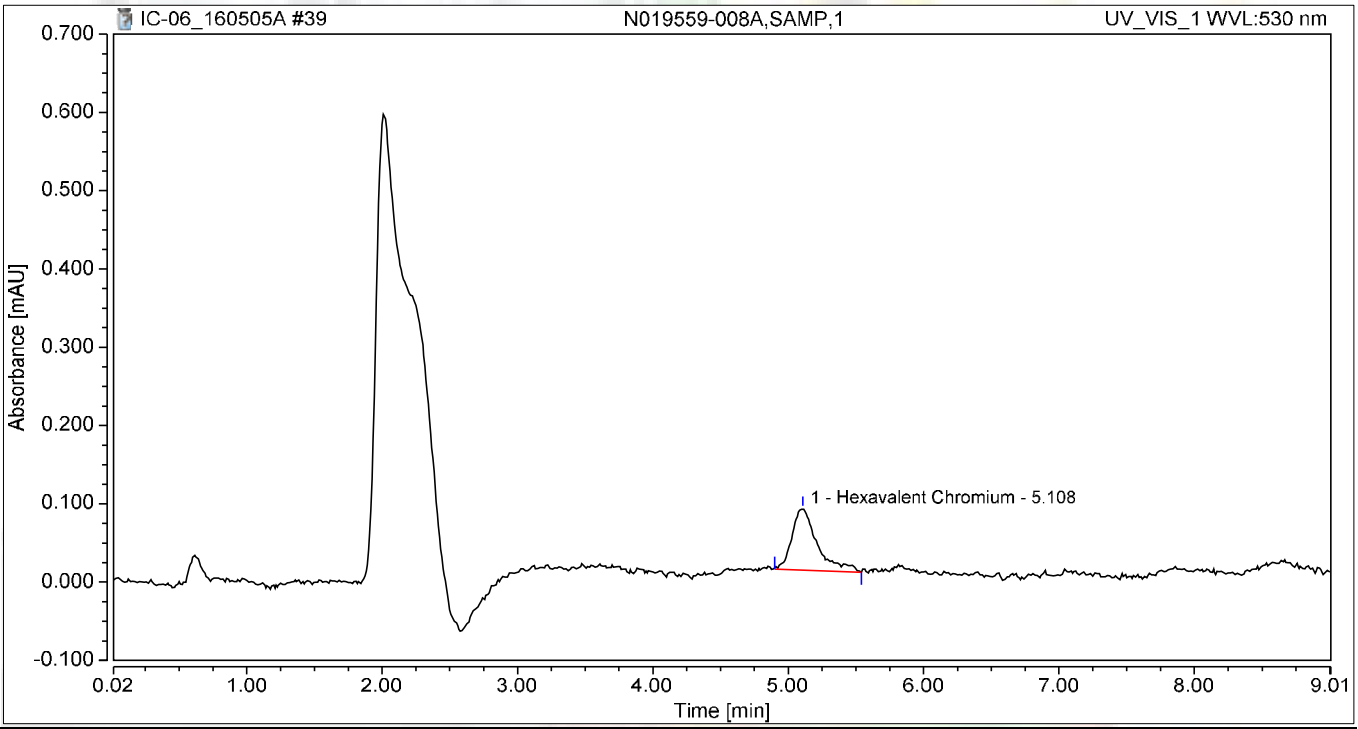
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-008A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

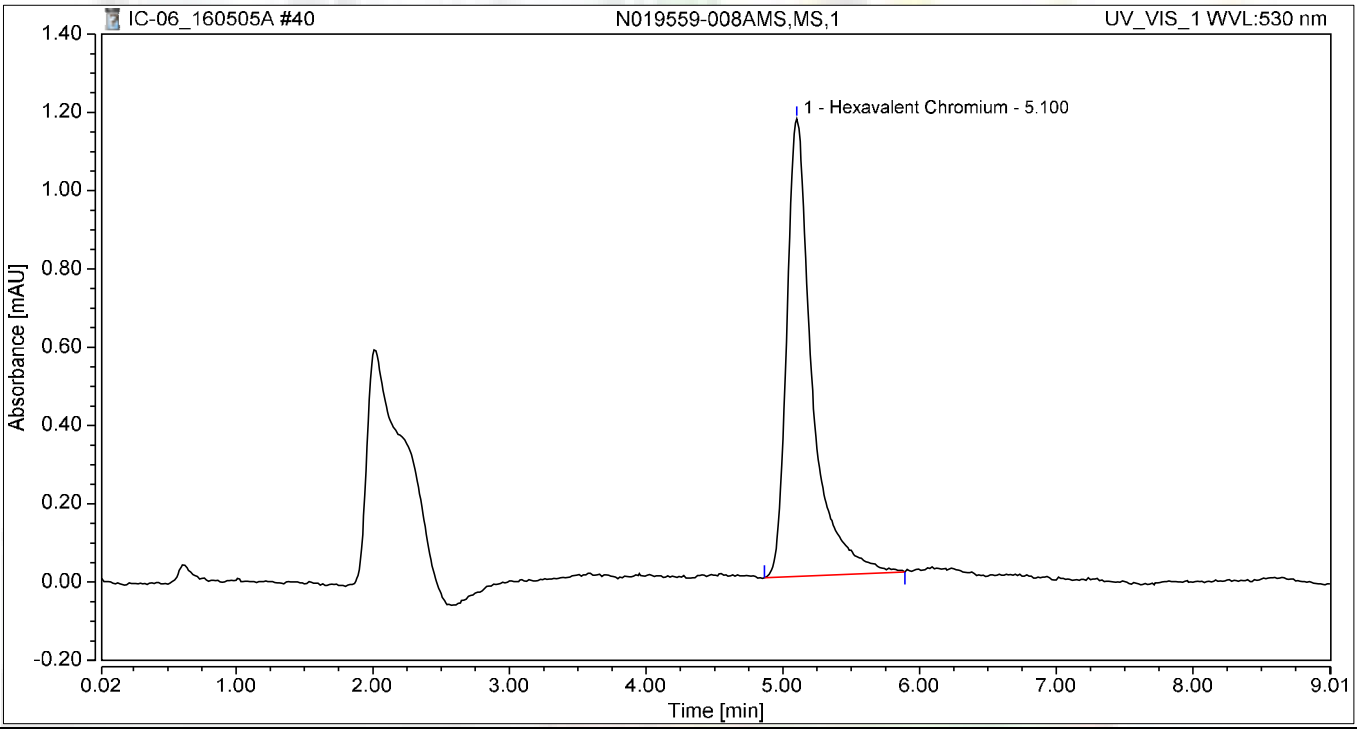
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.017	0.078	100.00	100.00	0.0551
Total:			**0.017**	**0.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-008AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

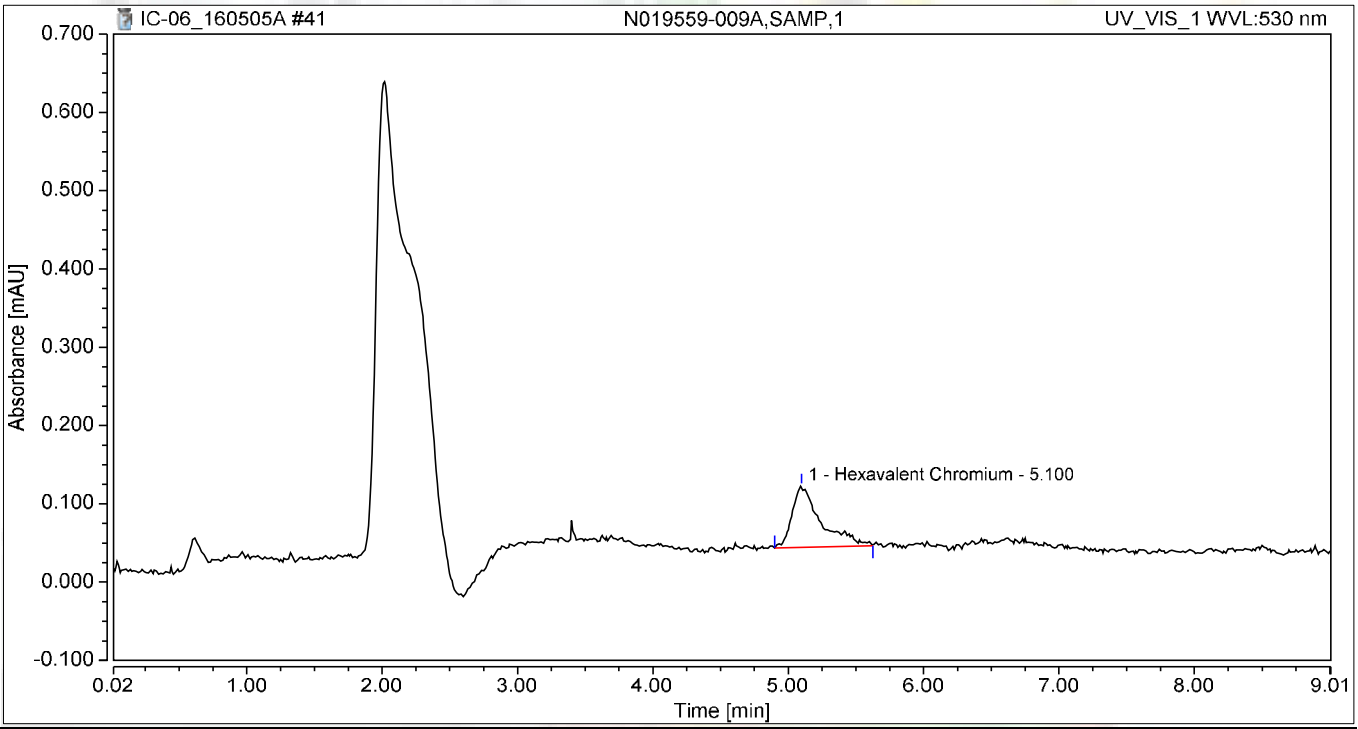
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.252	1.169	100.00	100.00	1.0626
Total:			**0.252**	**1.169**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-009A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

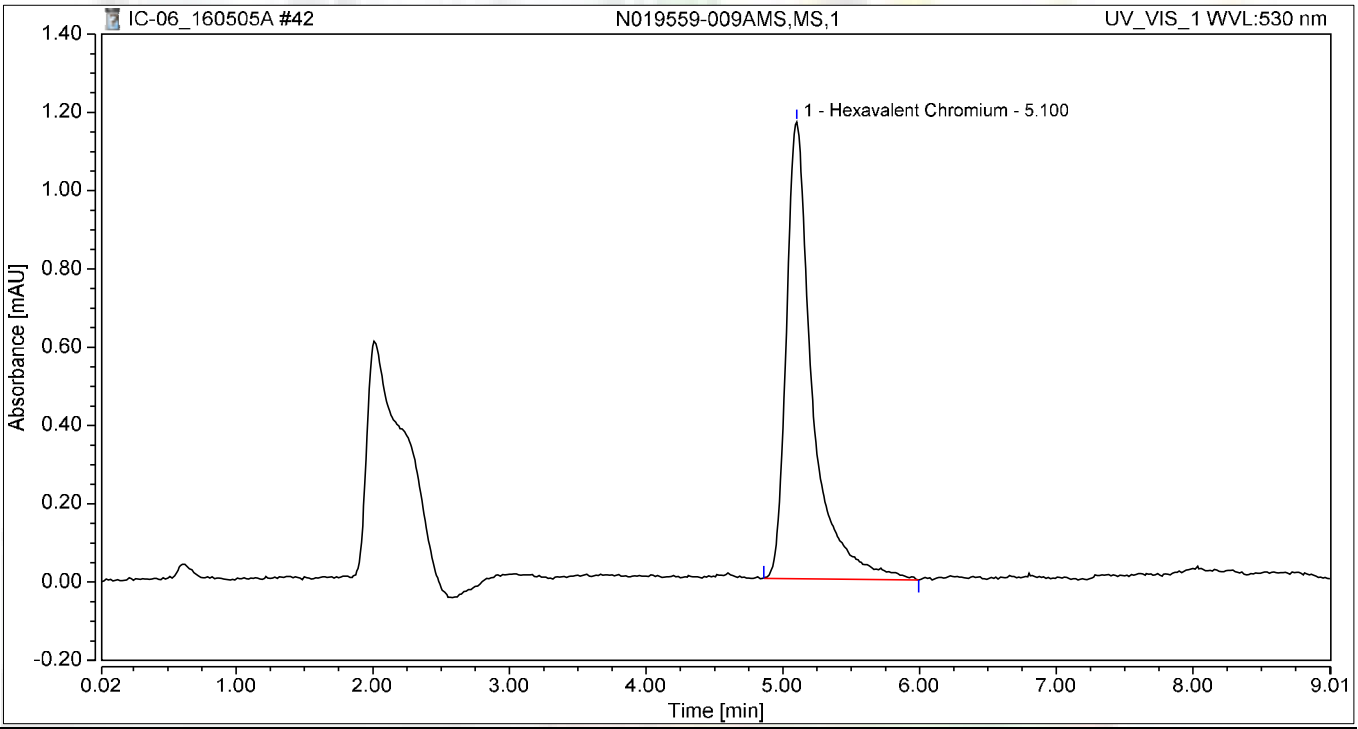
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.020	0.078	100.00	100.00	0.0656
Total:			**0.020**	**0.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-009AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

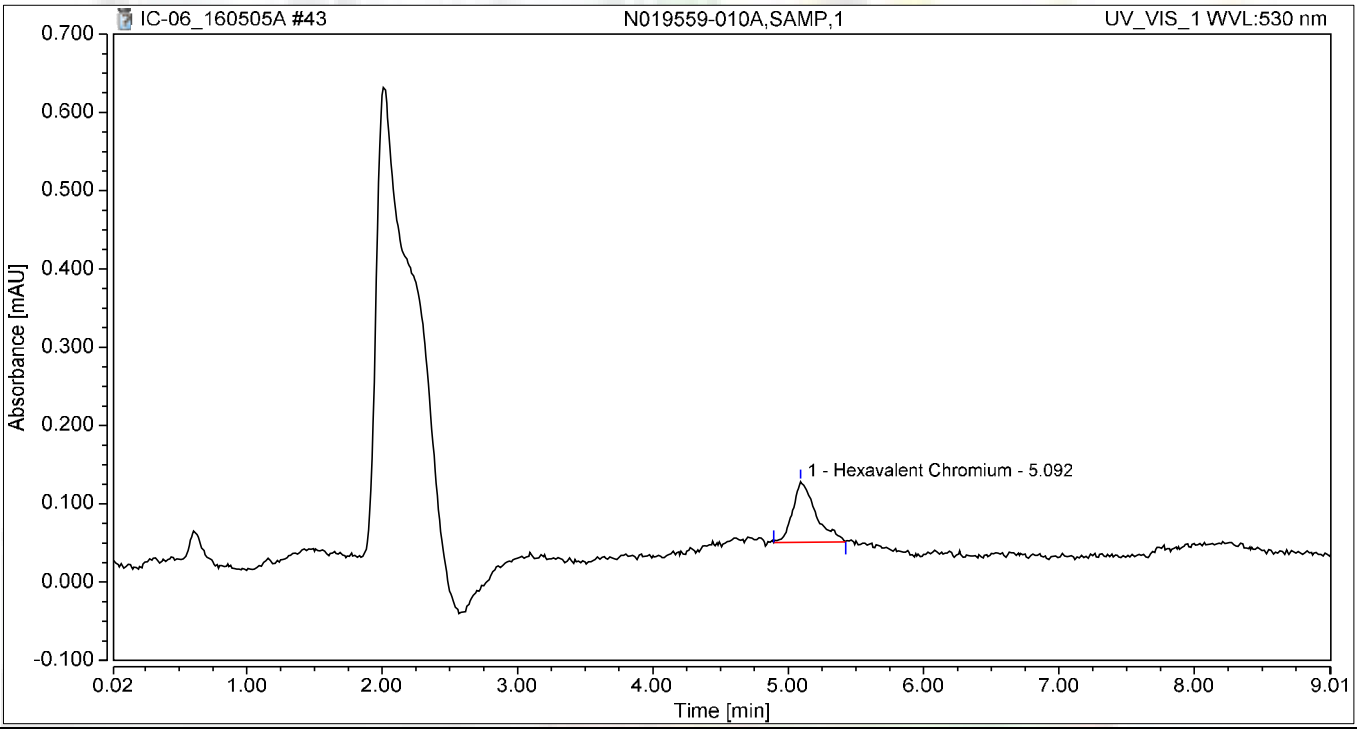
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.258	1.166	100.00	100.00	1.0851
Total:			**0.258**	**1.166**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-010A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

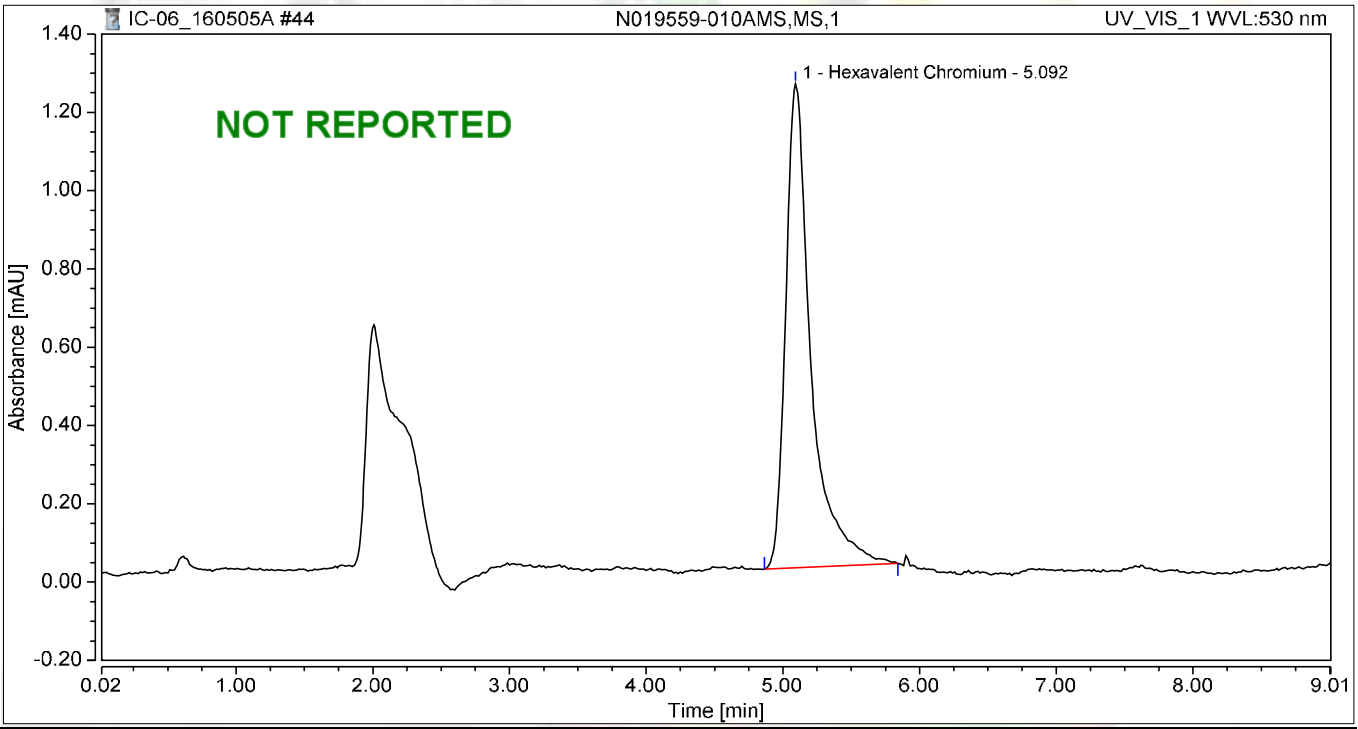
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.015	0.077	100.00	100.00	0.0479
Total:			**0.015**	**0.077**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-010AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

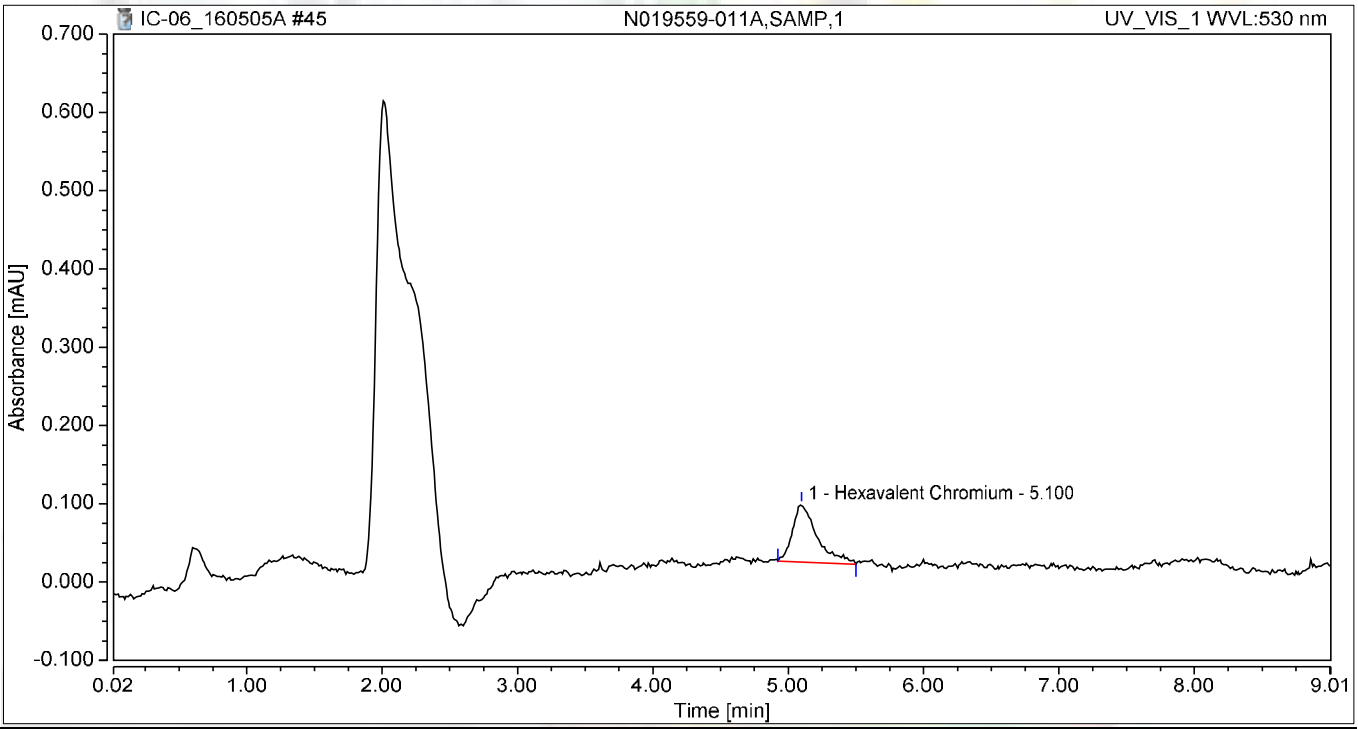
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.265	1.236	100.00	100.00	1.1173
Total:			**0.265**	**1.236**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-011A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

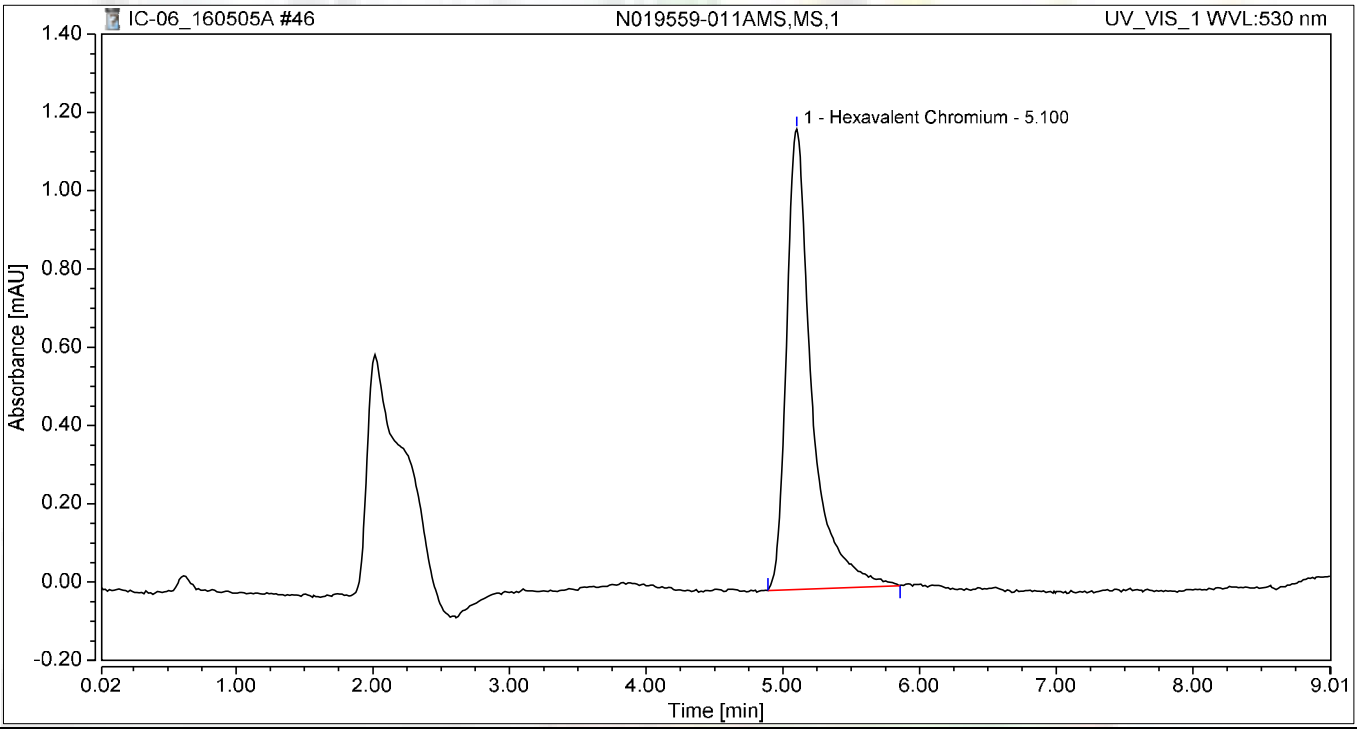
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.016	0.074	100.00	100.00	0.0489
Total:			**0.016**	**0.074**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-011AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

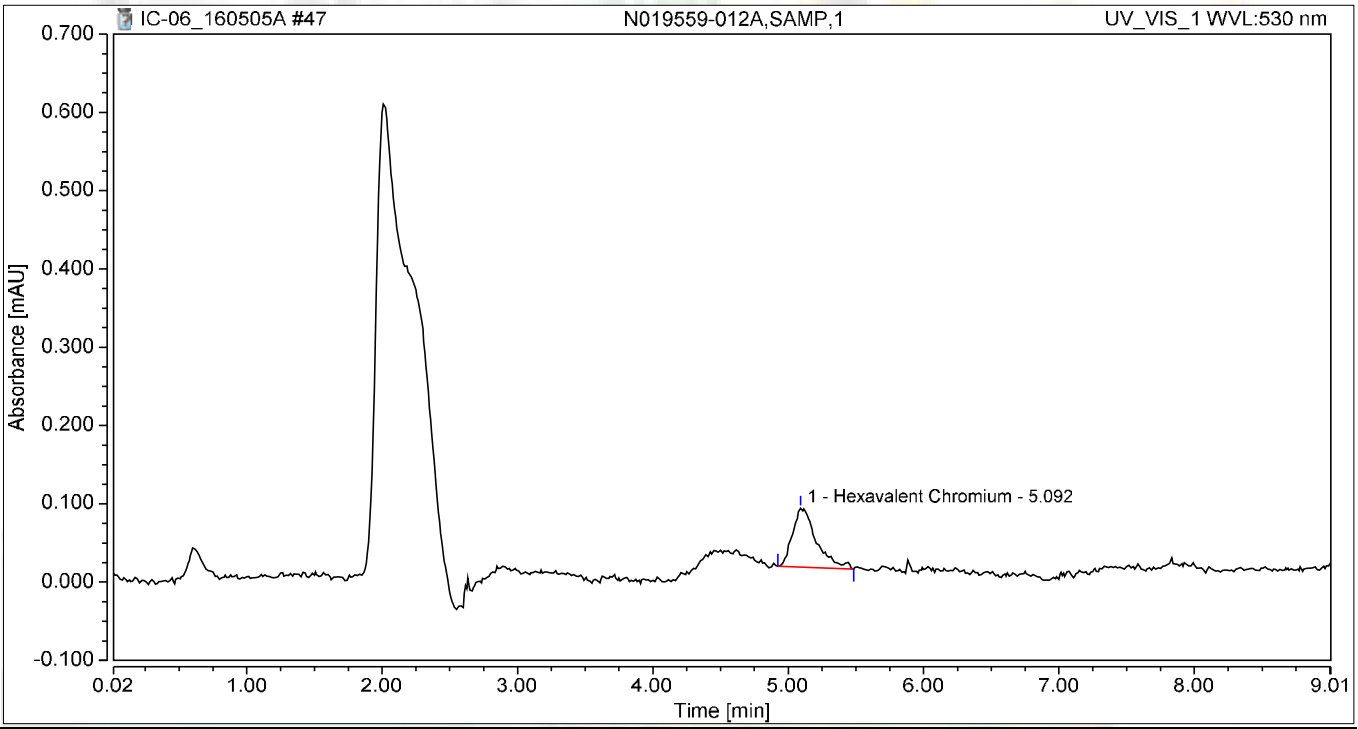
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.253	1.176	100.00	100.00	1.0636
Total:			**0.253**	**1.176**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-012A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

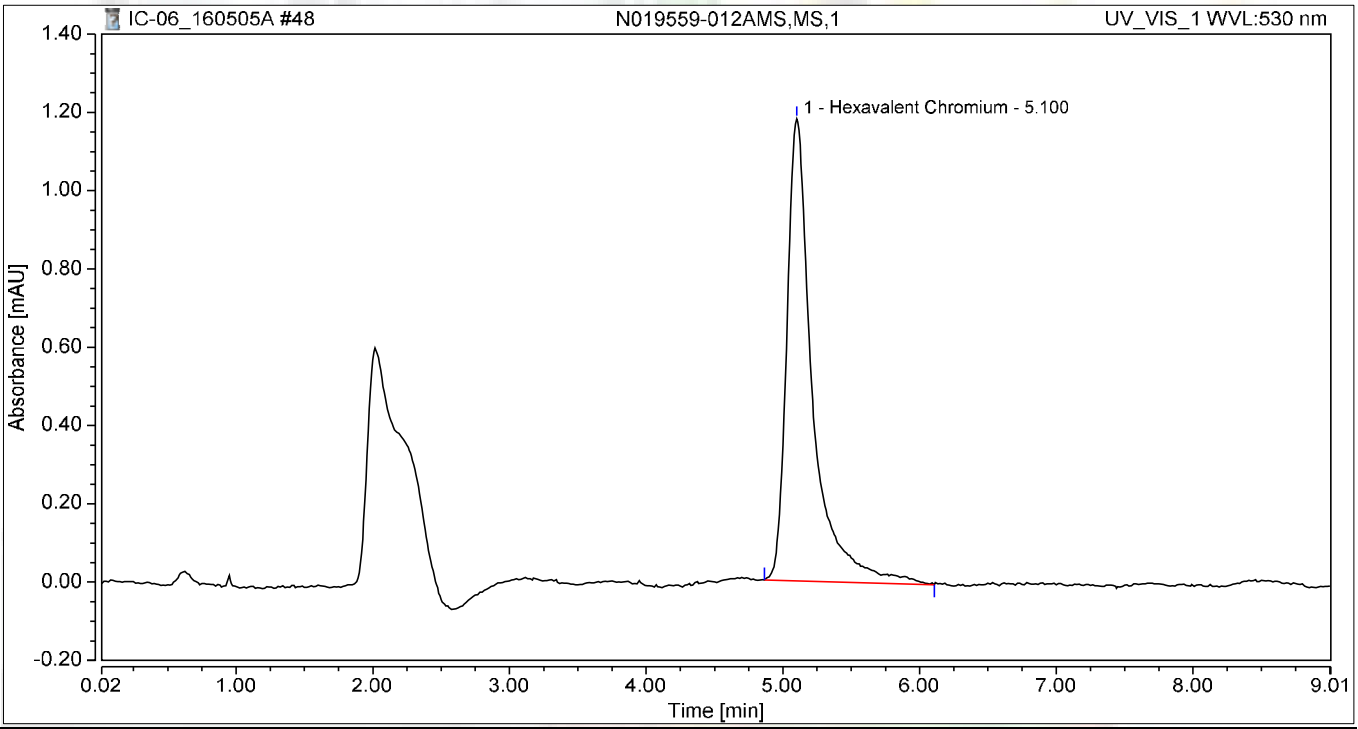
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.015	0.075	100.00	100.00	0.0482
Total:			**0.015**	**0.075**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-012AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

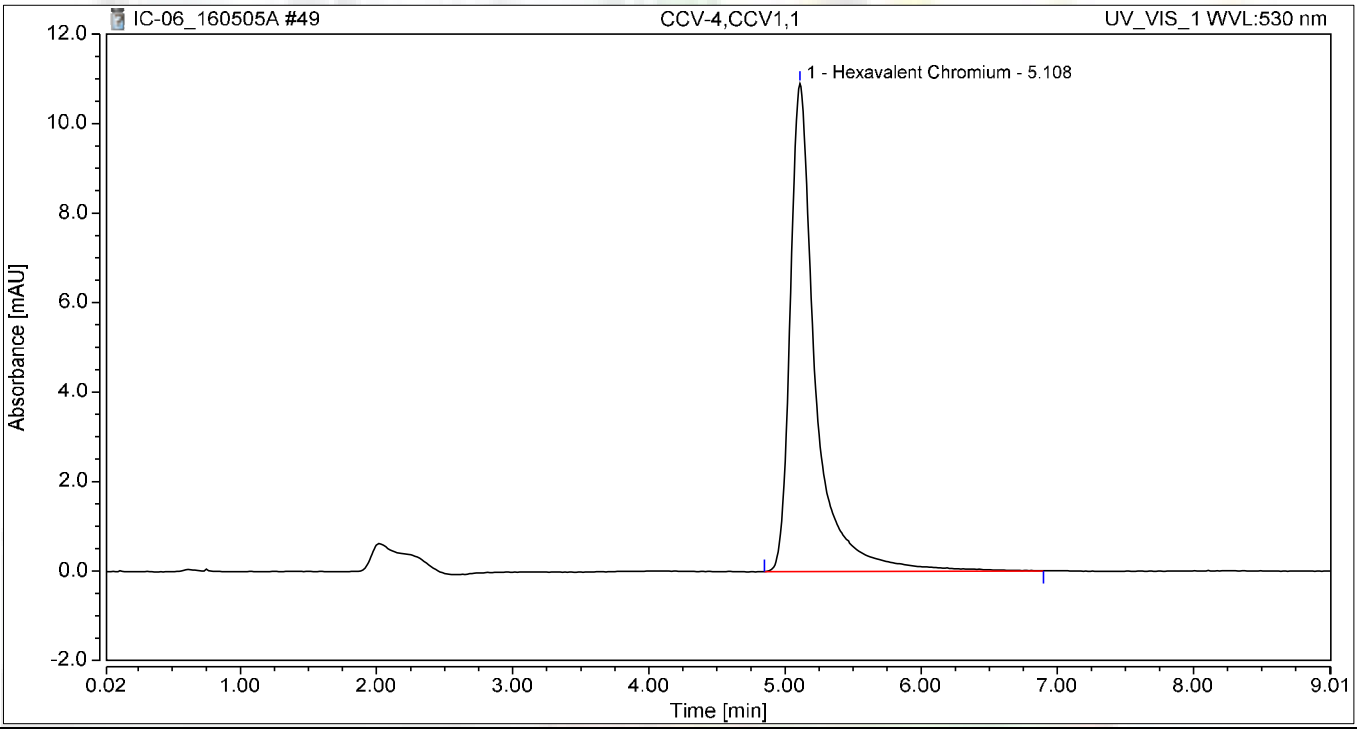
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.257	1.180	100.00	100.00	1.0841
Total:			**0.257**	**1.180**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

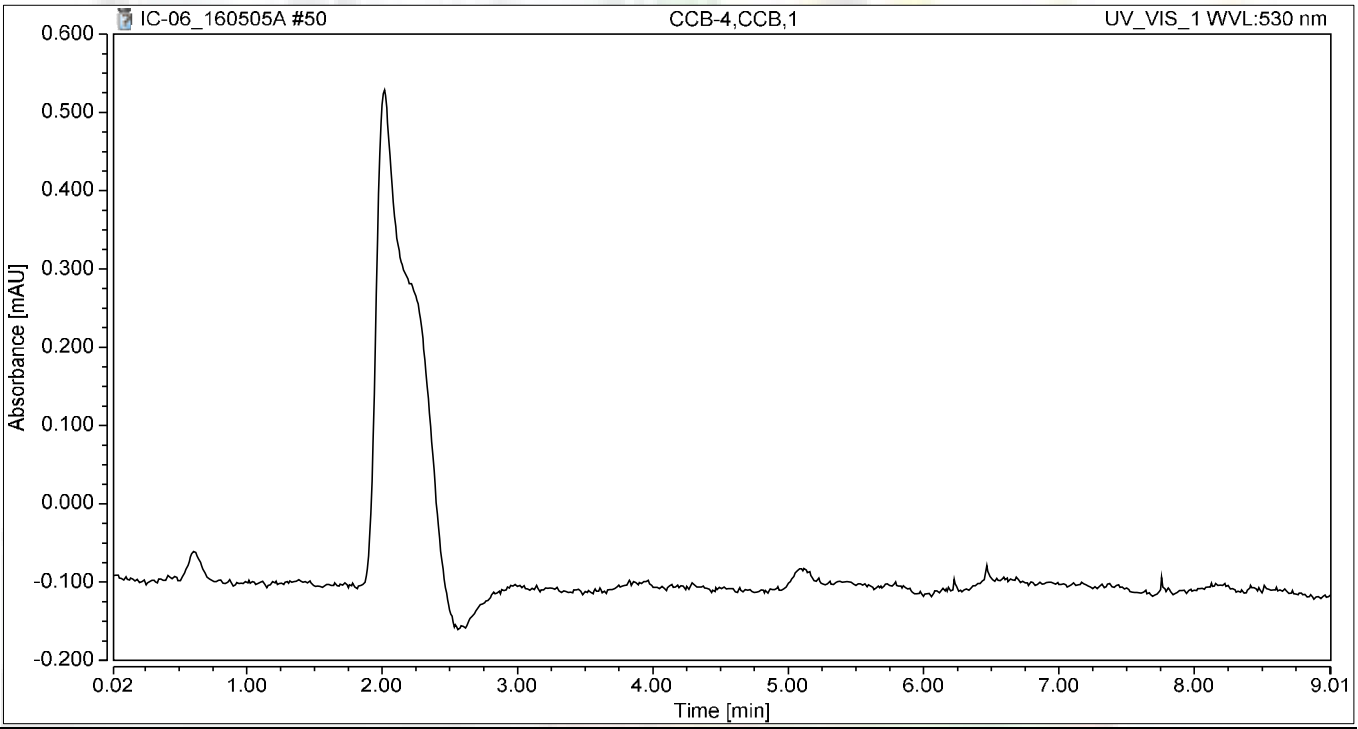
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.360	10.908	100.00	100.00	10.0872
Total:			**2.360**	**10.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

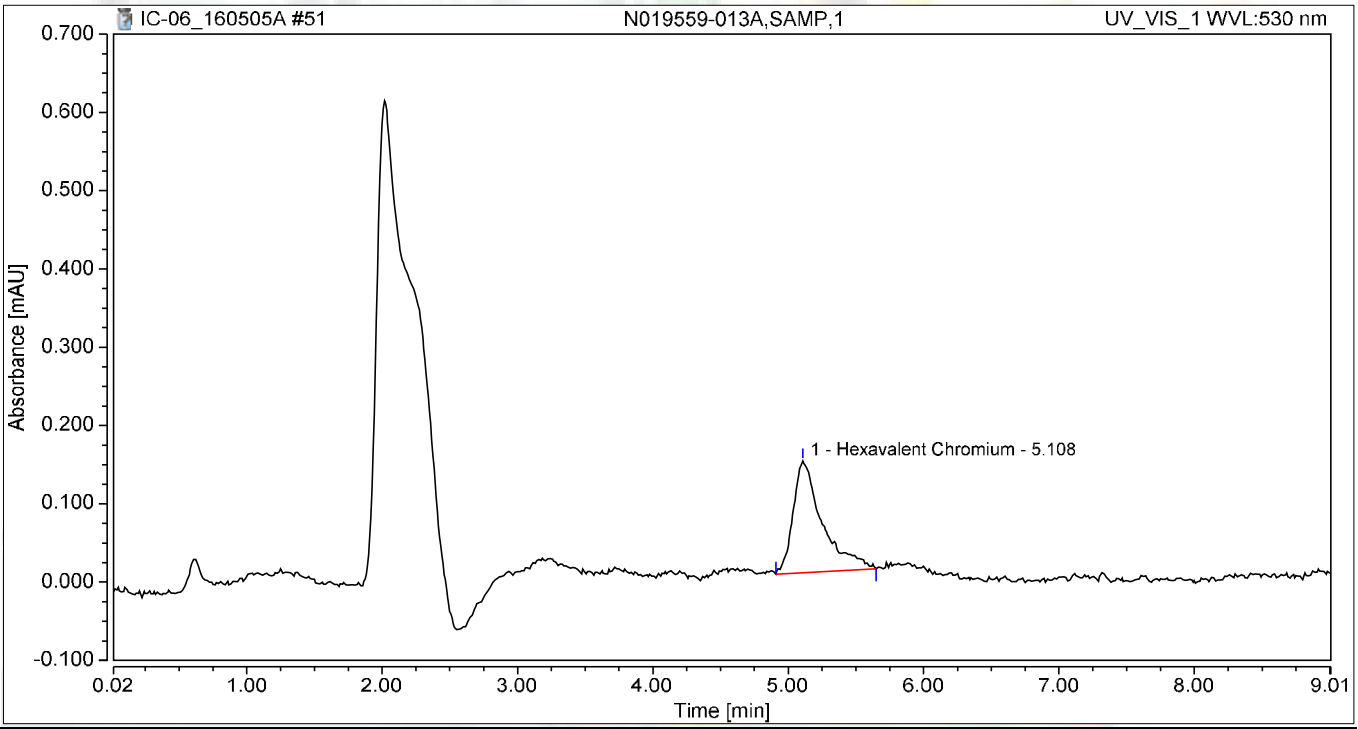
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-013A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

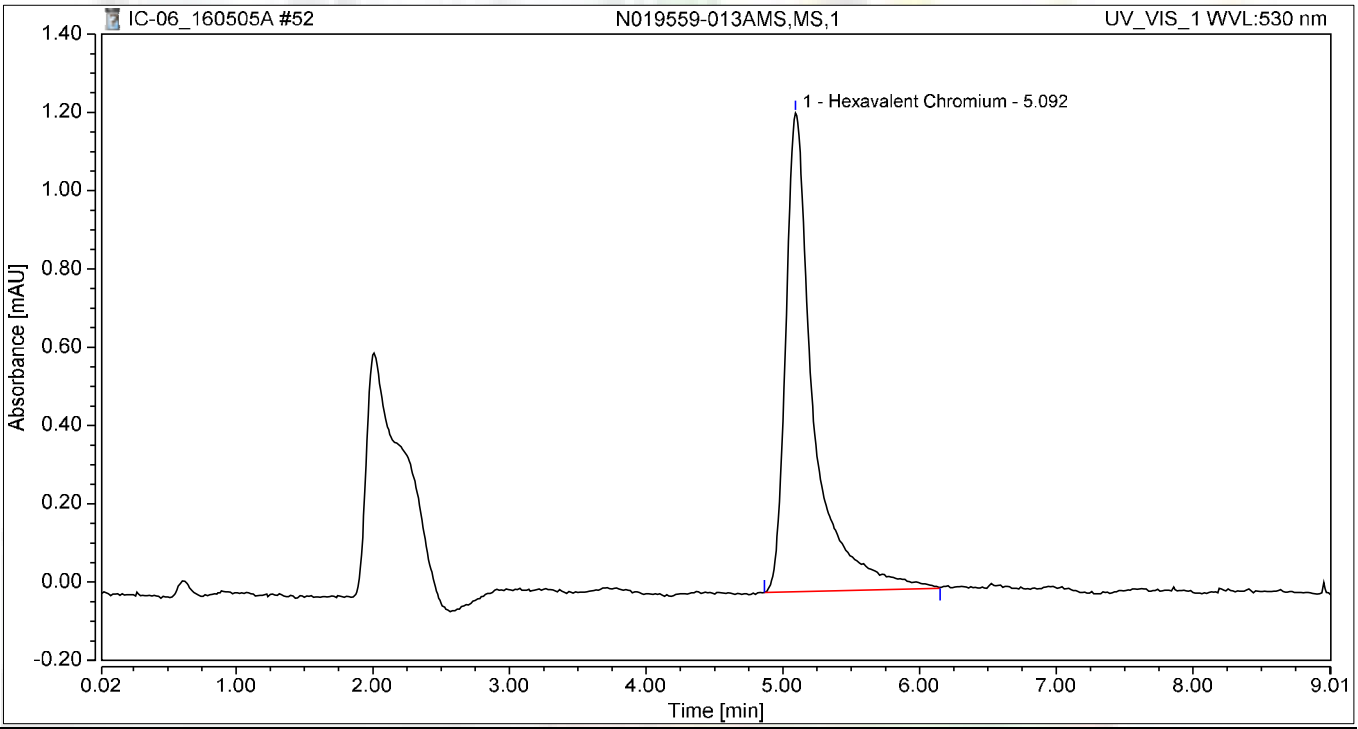
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.036	0.143	100.00	100.00	0.1347
Total:			**0.036**	**0.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-013AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

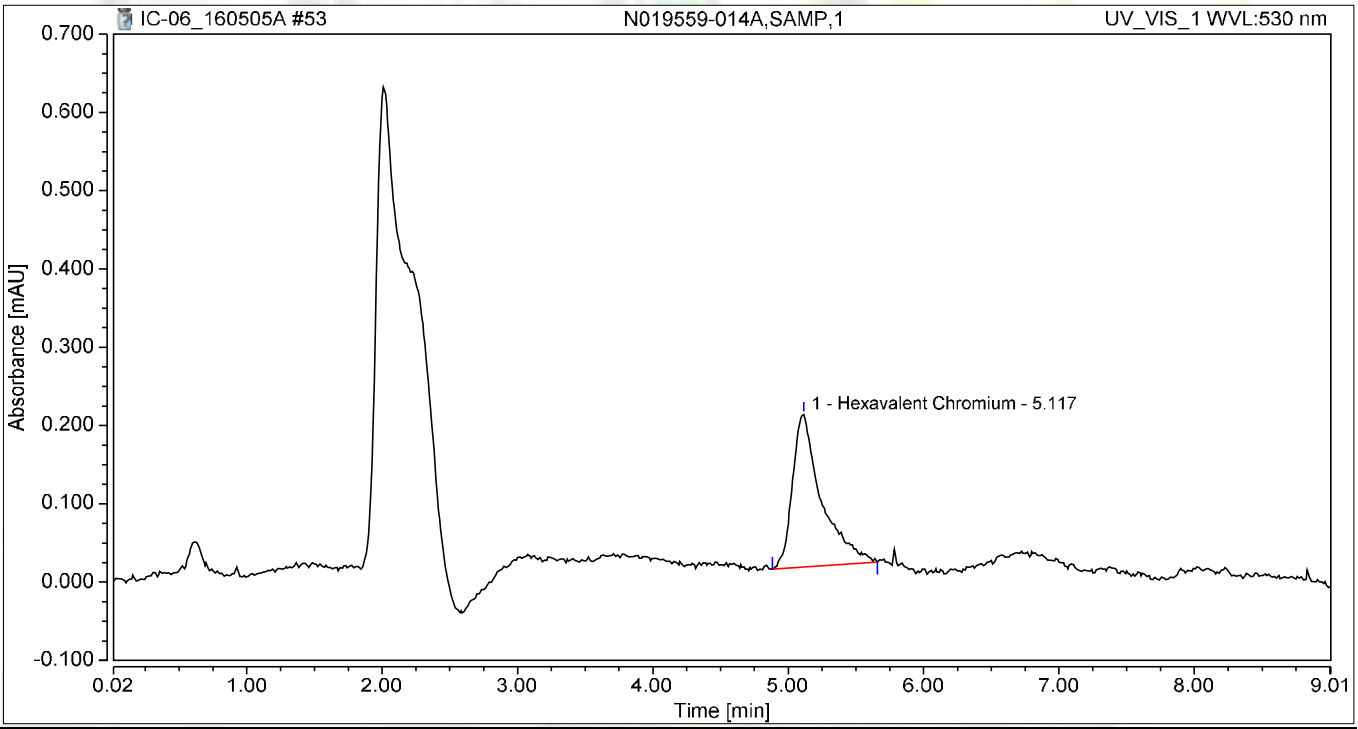
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.288	1.222	100.00	100.00	1.2146
Total:			**0.288**	**1.222**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-014A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

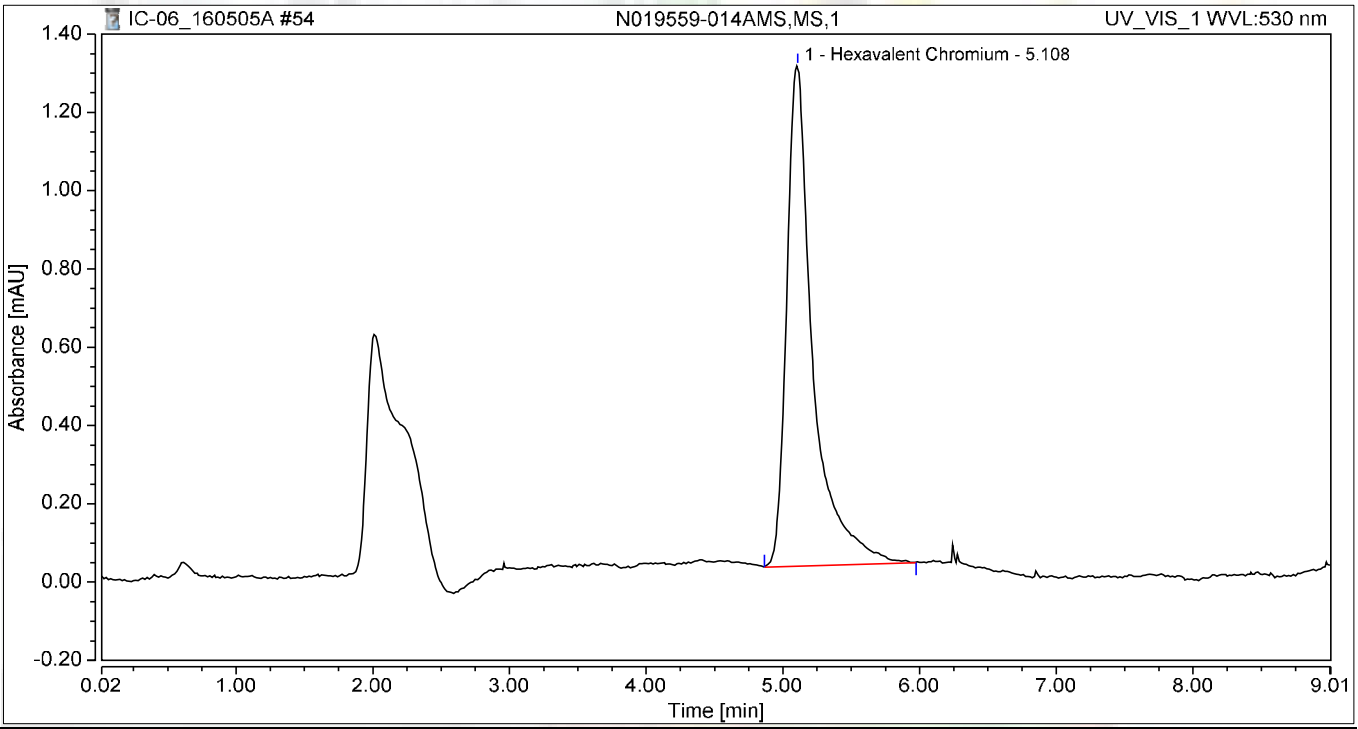
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.049	0.194	100.00	100.00	0.1899
Total:			**0.049**	**0.194**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-014AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

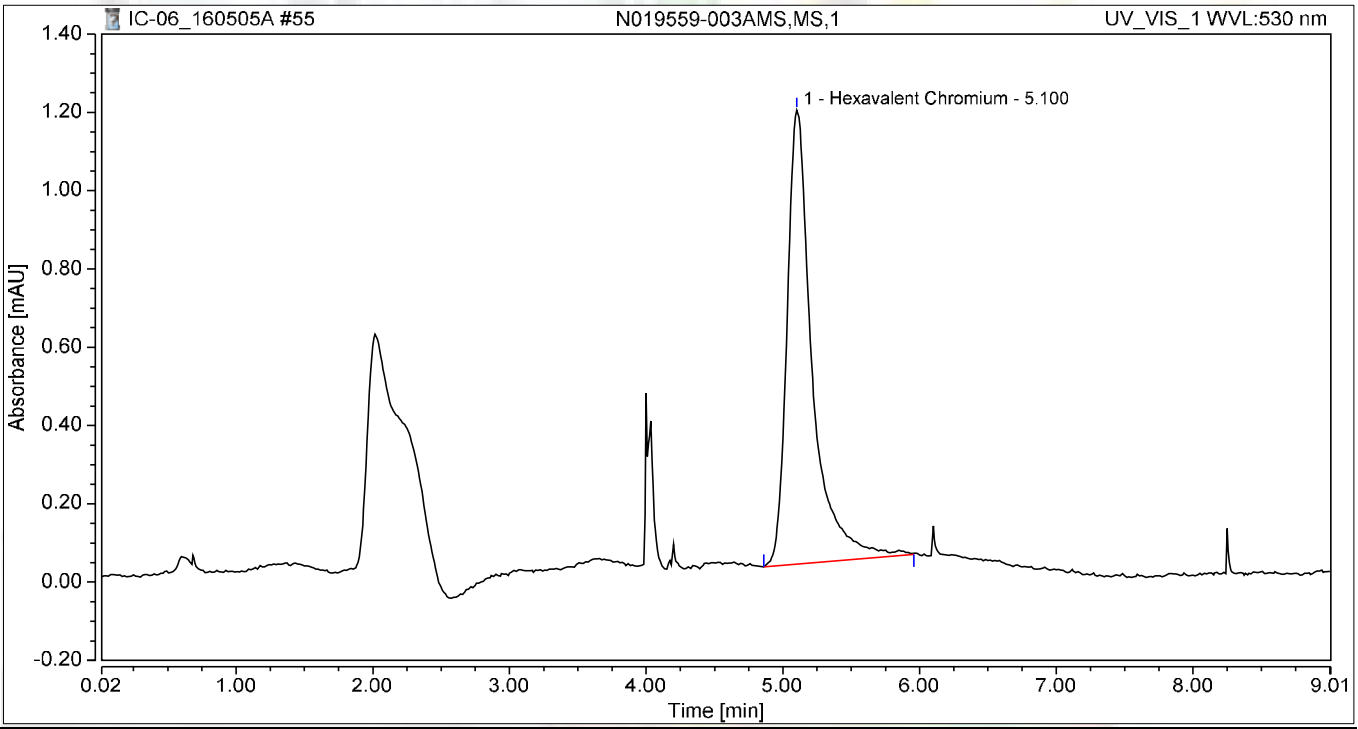
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.284	1.278	100.00	100.00	1.1971
Total:			**0.284**	**1.278**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-003AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

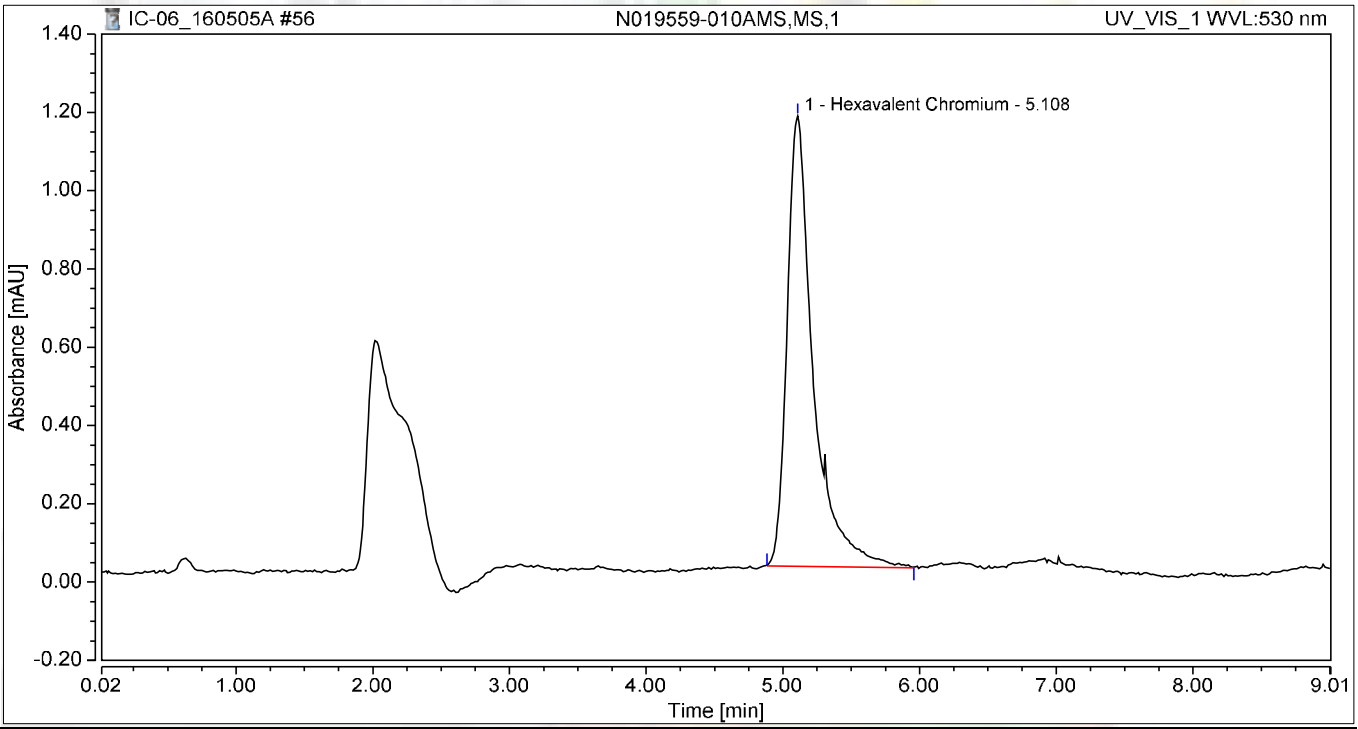
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.248	1.159	100.00	100.00	1.0435
Total:			**0.248**	**1.159**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-010AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 17:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

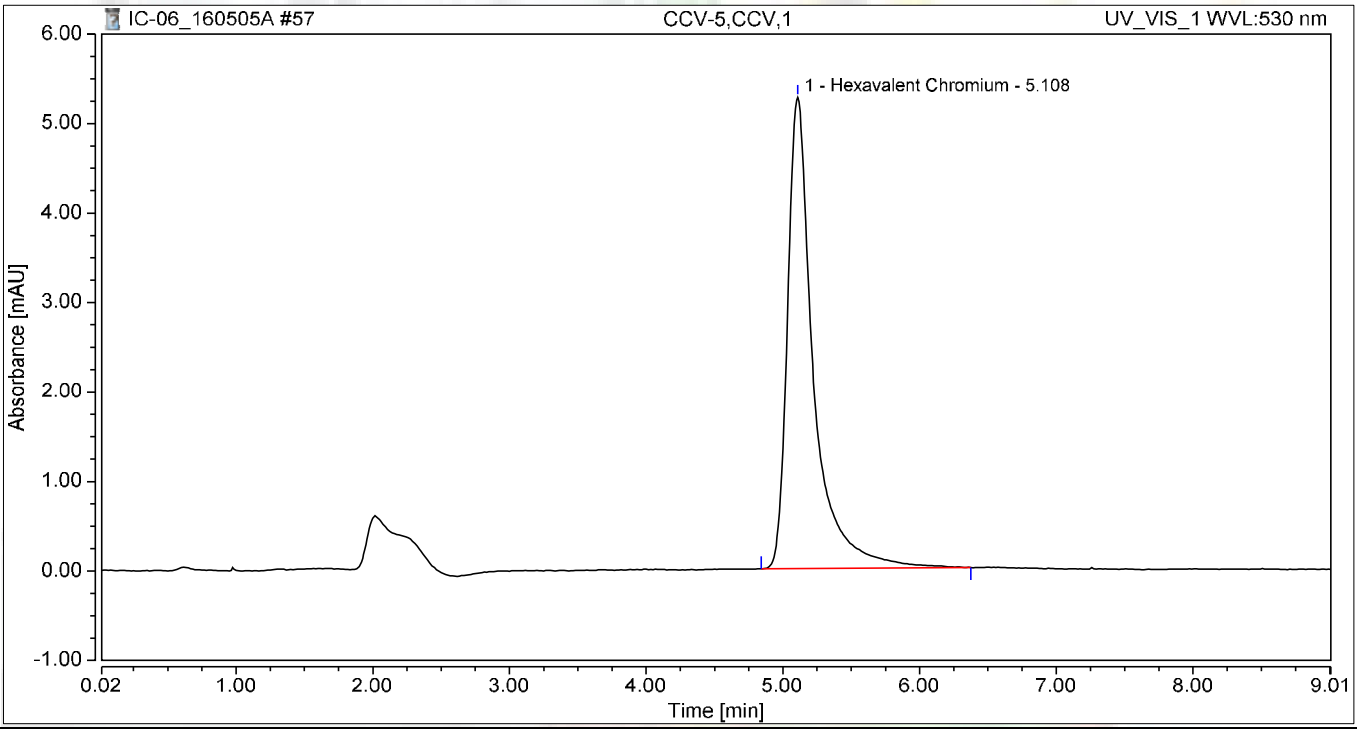
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.255	1.149	100.00	100.00	1.0741
Total:			**0.255**	**1.149**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

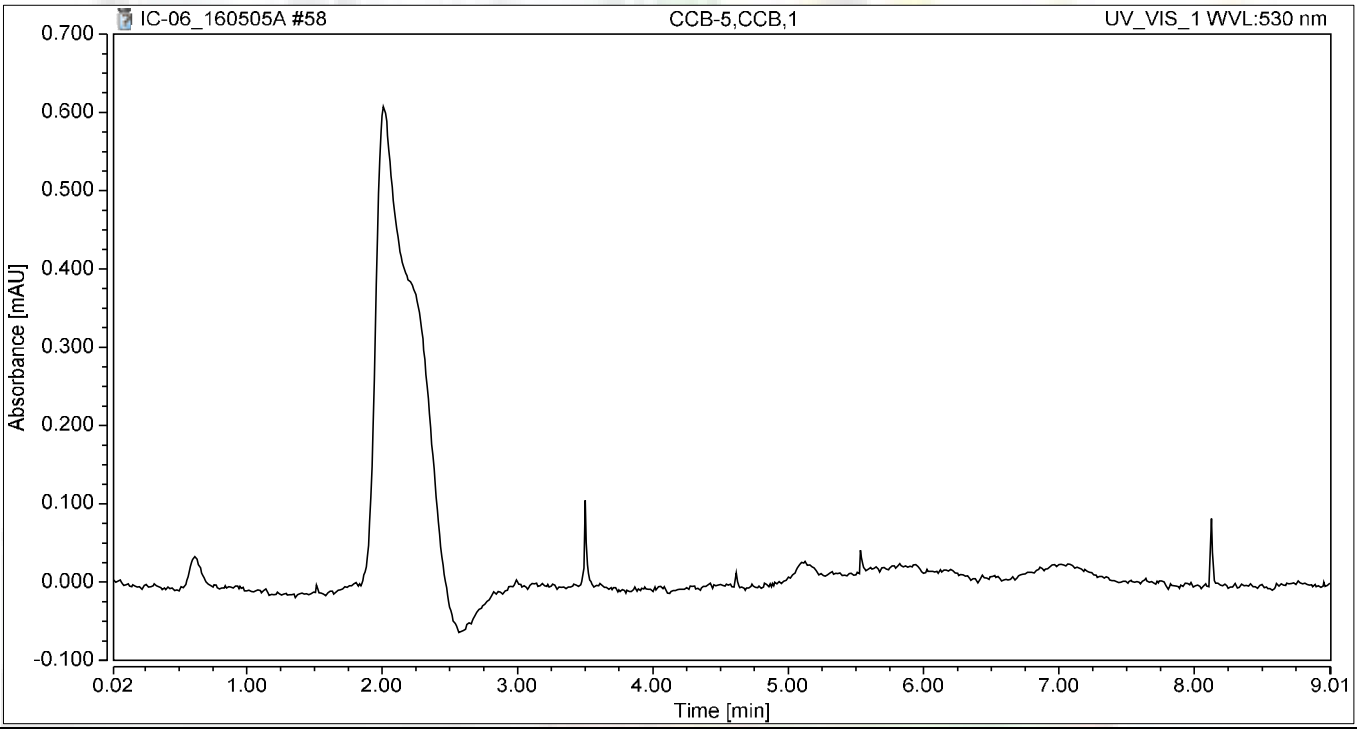
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.157	5.265	100.00	100.00	4.9366
Total:			**1.157**	**5.265**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108306 **Analyst:** REB

ASSET #: N019543 **Date Analyzed:** 5/3/2016

Method: 4500_NO3

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Reb 05/11/2016 Date: —

2nd Level Reviewer Mary 5/13/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N019543-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.3993*1

= 0.3993mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.40

Reb 05/11/2016

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

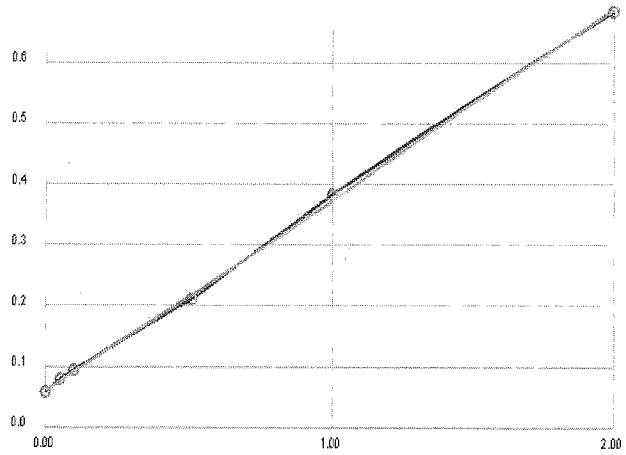
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3129x + 0.0611
Correlation	.99971

Calibrant	Energy	Set	Conc
1	0.0577	0.0000	-0.0108
2	0.0792	0.0500	0.0579
3	0.0943	0.1000	0.1062
4	0.2101	0.5000	0.4763
5	0.3833	1.0000	1.0299
6	0.6838	2.0000	1.9904



Notes:

2% CuSO4 - R160406A
R1 Buffer- R160406B
R2 Coloring Rgt. - R160406C

1° std- ISST-160211J
2° std- ISST-150730E

Rob 05/11/2016

350

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **ICV**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.481	0.050	0.5000	0	96.1	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **CCV**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.529	0.050	0.5000	0	106	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **CCV**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.479	0.050	0.5000	0	95.7	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **CCV**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.498	0.050	0.5000	0	99.7	90	110				

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **ICB**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317859**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **CCB**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317873**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **CCB**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317885**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108306**
Client ID: **CCB**	Batch ID: **R108306**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2016**	SeqNo: **2317892**

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

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-03-2016 16:20
Time end: 05-03-2016 19:02

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:24:36	-0.0137		0.0568
2	<BLANK>	18:25:31	-0.0153		0.0563
3	<CAL1>	18:26:31	-0.0108	[0]	0.0577
4	<CAL2>	18:27:26	0.0579	[0.05]	0.0792
5	<CAL3>	18:28:28	0.1062	[0.1]	0.0943
6	<CAL4>	18:29:22	0.4763	[0.5]	0.2101
7	<CAL5>	18:30:17	1.0299	[1]	0.3833
8	<CAL6>	18:31:19	1.9904	[2]	0.6838
9	,BLANK,BLANK,1,	18:32:14	0.0122		0.0649
10	,ICV,ICV,1,	18:33:14	0.4805		0.2114
11	,ICB,ICB,1,	18:34:09	-0.0044		0.0597
12	,MB-H2O,MBLK,1,	18:35:05	-0.0044		0.0597
13	,LCS-H2O,LCS,1,	18:36:06	0.4798		0.2112
14	,N019543-001E,SAMP,1,	18:37:00	0.3993		0.1860
15	,N019543-001EDUP,DUP,1,	18:38:02	0.3983		0.1857
16	,N019543-001EMS,MS,1,	18:38:58	0.8810		0.3367
17	,N019543-001EMSD,MSD,1,	18:39:52	0.9315		0.3525
18	,N019534-009C,SAMP,1,	18:40:53	0.0128		0.0651
19	,N019534-010C,SAMP,1,	18:41:49	0.0288		0.0701
20	,N019535-007C,SAMP,1,	18:42:44	0.1202		0.0987
21	,BLANK,BLANK,1	18:43:44	-0.0015		0.0606
22	,CCV-1,CCV,1,	18:44:39	0.5291		0.2266
23	,CCB-1,CCB,1,	18:45:41	-0.0006		0.0609
24	,N019543-002E,SAMP,1,	18:46:23	0.3977		0.1855
25	,N019543-003E,SAMP,1,	18:47:12	0.4191		0.1922
26	,N019543-004E,SAMP,1,	18:47:54	0.4114		0.1898

Reb 05/11/2016

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N019543-005E,SAMP,1,	18:48:44	0.3929		0.1840
28	,N019543-006E,SAMP,1,	18:49:27	0.3798		0.1799
29	,N019543-007E,SAMP,1,	18:50:09	0.4172		0.1916
30	,N019543-008E,SAMP,1,	18:50:53	0.3760		0.1787
31	,N019543-009E,SAMP,1,	18:51:41	0.3868		0.1821
32	,N019543-010E,SAMP,1,	18:52:24	0.3929		0.1840
33	,BLANK,BLANK,1	18:53:12	0.0045		0.0625
34	,CCV-2,CCV,1,	18:53:55	0.4786		0.2108
35	,CCB-2,CCB,1,	18:54:39	0.0128		0.0651
36	,N019543-011E,SAMP,1,	18:55:27	0.3836		0.1811
37	,N019543-012E,SAMP,1,	18:56:10	0.3795		0.1798
38	,N019543-013E,SAMP,1,	18:56:52	0.2708		0.1458
39	,N019543-014E,SAMP,1,	18:57:41	0.2443		0.1375
40	,BLANK,BLANK,1	18:58:23	-0.0063		0.0591
41	,CCV-3,CCV,1,	18:59:07	0.4984		0.2170
42	,CCB-3,CCB,1,	18:59:56	0.0001		0.0611

Rob 05/11/2016

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/03/2016
Time Analyzed: 16:20 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R160406B
Color reagent: R160406C
2% Copper Sulfate: R160406A
Ammonium Hydroxide: CINV-160406F

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N019543-001E		7.93						
2)	N019543-002E		8.04						
3)	N019543-003E		7.43						
4)	N019543-004E		8.11						
5)	N019543-005E		7.28						
6)	N019543-006E		7.90						
7)	N019543-007E		7.71						
8)	N019543-008E		7.84						
9)	N019543-009E		8.67						
10)	N019543-010E		8.25						
11)	N019543-011E		8.42						
12)	N019543-012E		8.90						
13)	N019543-013E		8.07						
14)	N019543-014E		7.78						
15)									
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

Reb 05/11/2016

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57214
ASSET #: N019543

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 4/28/2016

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Fe in N019500-006B PS/MS/MSD & N019543-002B MS failed. However LCS passed criteria.

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

1st Level Reviewer 5/12/2016 Date: —

2nd Level Reviewer 5/13/2016 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57287
ASSET #: N019543

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/10/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N019543-012B to 014B run only.

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

1st Level Reviewer 5/12/2016 Date: —

2nd Level Reviewer 5/13/2016 Date: -

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N019543-002B** , the concentration in ug/L is calculated as follows:

Iron , ug/L = 0.11375 * 1 * (25/25) * 1000

Iron , ug/L = 113.75

Reporting results in two significant figures,

Iron , ug/L = 110

% RSD SUMMARY

RSD SUMMARY: 160428B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	39.48	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.62	15	PASS
Standard2	ICAL	1	Fe	0.05	1.11	15	PASS
Standard3	ICAL	1	Fe	2	0.33	15	PASS
Standard4	ICAL	1	Fe	5	0.16	15	PASS
Standard5	ICAL	1	Fe	7.5	0.45	15	PASS
Standard6	ICAL	1	Fe	10	0.38	15	PASS
Standard7	ICAL	1	Fe	20	0.046	15	PASS
ICV	ICV	1	Fe	10.34	0.12	15	PASS
ICB	ICB	1	Fe	-0.00033	168.076	15	<PQL
LLICV	CCV1	1	Fe	0.02	1.26	20	PASS
ICSA1	ICSA	1	Fe	176.27	0.13	15	PASS
ICSAB1	ICSAB	1	Fe	192.44	0.087	15	PASS
MB-57214	MBLK	1	Fe	0.0044	29.37	15	<PQL
LCS-57214	LCS	1	Fe	0.11	0.34	15	PASS
N019500-006B	SAMP	1	Fe	0.44	0.61	15	PASS
N019500-006B	SAMP	5	Fe	0.093	0.78	15	PASS
N019500-006B-PS	PS	1	Fe	0.52	0.61	15	PASS
N019500-006B-MS	MS	1	Fe	0.5	0.68	15	PASS
N019500-006B-MSD	MSD	1	Fe	0.51	1.084	15	PASS
N019500-007B	SAMP	1	Fe	0.027	2.58	15	PASS
N019500-008B	SAMP	1	Fe	0.015	1.43	15	PASS
CCV1	CCV	1	Fe	10.32	0.27	15	PASS
CCB1	CCB	1	Fe	-0.0011	50.19	15	<PQL
N019500-009B	SAMP	1	Fe	0.043	0.95	15	PASS
N019500-013B	SAMP	1	Fe	0.98	0.22	15	PASS
N019500-014B	SAMP	1	Fe	10.098	0.18	15	PASS
N019500-015B	SAMP	1	Fe	0.02	1.37	15	PASS
N019501-001B	SAMP	1	Fe	0.0076	2.83	15	PASS
N019501-002B	SAMP	1	Fe	3.16	0.24	15	PASS
N019543-001B	SAMP	1	Fe	0.013	1.91	15	PASS
N019543-002B	SAMP	1	Fe	0.11	0.23	15	PASS
N019543-002B-MS	MS	1	Fe	0.11	0.38	15	PASS
N019543-003B	SAMP	1	Fe	0.018	0.54	15	PASS
CCV2	CCV	1	Fe	10.27	0.38	15	PASS
CCB2	CCB	1	Fe	-0.0015	24.75	15	<PQL
N019543-004B	SAMP	1	Fe	0.0063	4.28	15	PASS
N019543-005B	SAMP	1	Fe	0.0068	4.5	15	PASS
N019543-006B	SAMP	1	Fe	0.0038	7.26	15	PASS
N019543-007B	SAMP	1	Fe	0.028	1.35	15	PASS
N019543-008B	SAMP	1	Fe	0.015	1.3	15	PASS
N019543-009B	SAMP	1	Fe	0.0084	3.78	15	PASS

RSD SUMMARY: 160428B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N019543-010B	SAMP	1	Fe	0.0063	4.0066	15	PASS
N019543-011B	SAMP	1	Fe	0.0037	12.12	15	PASS
CCV3	CCV	1	Fe	10.31	0.35	15	PASS
CCB3	CCB	1	Fe	-0.0013	34.26	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	2.8	20	PASS
ICSA2	ICSA	1	Fe	174.92	0.12	15	PASS
ICSAB2	ICSAB	1	Fe	190.83	0.083	15	PASS

RSD SUMMARY: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	19.86	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.84	15	PASS
Standard2	ICAL	1	Fe	0.05	0.58	15	PASS
Standard3	ICAL	1	Fe	2	0.33	15	PASS
Standard4	ICAL	1	Fe	5	0.64	15	PASS
Standard5	ICAL	1	Fe	7.5	0.19	15	PASS
Standard6	ICAL	1	Fe	10	0.36	15	PASS
Standard7	ICAL	1	Fe	20	0.058	15	PASS
ICV	ICV	1	Fe	10.34	0.33	15	PASS
ICB	ICB	1	Fe	0.0026	33.26	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.35	20	PASS
ICSA1	ICSA	1	Fe	15.79	17.67	15	NR!
ICSA1	ICSA	1	Fe	161.22	0.037	15	PASS
ICSAB1	ICSAB	1	Fe	181.88	0.11	15	PASS
CCV1	CCV	1	Fe	10.32	0.33	15	PASS
CCB1	CCB	1	Fe	-0.00056	108.31	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	3.05	20	PASS
ICSA2	ICSA	1	Fe	162.05	0.27	15	PASS
ICSAB2	ICSAB	1	Fe	182.87	0.034	15	PASS
MB-57287	MBLK	1	Fe	-0.0045	2.47	15	PASS
LCS-57287	LCS	1	Fe	0.11	0.3	15	PASS
N019543-012B	SAMP	1	Fe	0.018	1.02	15	PASS
N019543-012B	SAMP	5	Fe	0.00015	157.6	15	<PQL
N019543-012B-PS	PS	1	Fe	0.12	0.81	15	PASS
N019543-012B-MS	MS	1	Fe	0.12	1.028	15	PASS
N019543-012B-MSD	MSD	1	Fe	0.12	1.56	15	PASS
N019543-013B	SAMP	1	Fe	0.035	2.21	15	PASS
N019543-014B	SAMP	1	Fe	0.017	3.37	15	PASS
N019559-001B	SAMP	1	Fe	0.017	3.5	15	PASS
CCV2	CCV	1	Fe	10.34	0.49	15	PASS
CCB2	CCB	1	Fe	-0.0032	6.58	15	PASS
N019559-002B	SAMP	1	Fe	0.019	4.088	15	PASS
N019559-003B	SAMP	1	Fe	0.012	9.71	15	PASS
N019559-004B	SAMP	1	Fe	0.014	3.4	15	PASS
N019559-005B	SAMP	1	Fe	0.064	0.79	15	PASS
N019559-006B	SAMP	1	Fe	0.012	2.79	15	PASS
N019559-007B	SAMP	1	Fe	0.027	2.56	15	PASS
N019559-007B-MS	MS	1	Fe	0.12	0.7	15	PASS
N019559-008B	SAMP	1	Fe	0.024	2.66	15	PASS
N019559-009B	SAMP	1	Fe	0.041	1.97	15	PASS
N019559-010B	SAMP	1	Fe	0.04	1.62	15	PASS
CCV3	CCV	1	Fe	10.31	0.098	15	PASS

RSD SUMMARY: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB3	CCB	1	Fe	-0.0031	17.43	15	<PQL
N019559-011B	SAMP	1	Fe	0.02	4.41	15	PASS
N019559-012B	SAMP	1	Fe	0.0066	8.91	15	PASS
N019591-001B	SAMP	1	Fe	0.02	0.86	15	PASS
N019591-002B	SAMP	1	Fe	0.18	0.49	15	PASS
N019591-003B	SAMP	1	Fe	0.071	0.67	15	PASS
N019591-004B	SAMP	1	Fe	0.041	1.093	15	PASS
N019591-005B	SAMP	1	Fe	0.073	1.26	15	PASS
CCV4	CCV	1	Fe	10.3	0.2	15	PASS
CCB4	CCB	1	Fe	-0.0028	5.65	15	PASS
LLCCV2	CCV2	1	Fe	0.018	0.88	20	PASS
ICSA3	ICSA	1	Fe	162.27	0.051	15	PASS
ICSAB3	ICSAB	1	Fe	183.13	0.1	15	PASS
CCV5	CCV	1	Fe	10.27	0.78	15	PASS
CCB5	CCB	1	Fe	-0.0027	4.16	15	PASS
CCV6	CCV	1	Fe	10.35	0.24	15	PASS
CCB6	CCB	1	Fe	-0.0027	20.25	15	<PQL
CCV7	CCV	1	Fe	10.28	0.29	15	PASS
CCB7	CCB	1	Fe	-0.0024	16.48	15	<PQL
LLCCV3	CCV2	1	Fe	0.018	2.45	20	PASS
ICSA4	ICSA	1	Fe	162.64	0.12	15	PASS
ICSAB4	ICSAB	1	Fe	183.33	0.14	15	PASS
CCV8	CCV	1	Fe	10.32	0.074	15	PASS
CCB8	CCB	1	Fe	-0.0024	29.96	15	<PQL
CCV9	CCV	1	Fe	10.31	1.54	15	PASS
CCB9	CCB	1	Fe	-0.0016	9.58	15	PASS
CCV10	CCV	1	Fe	10.34	0.44	15	PASS
CCB10	CCB	1	Fe	-0.0021	29.71	15	<PQL
LLCCV4	CCV2	1	Fe	0.019	2.56	20	PASS
ICSA5	ICSA	1	Fe	162.54	0.15	15	PASS
ICSAB5	ICSAB	1	Fe	183.33	0.22	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160428B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	04/28/2016	06:53:57 PM
2	Standard1	ICAL	1	04/28/2016	06:58:45 PM
3	Standard2	ICAL	1	04/28/2016	07:04:03 PM
4	Standard3	ICAL	1	04/28/2016	07:09:22 PM
5	Standard4	ICAL	1	04/28/2016	07:14:43 PM
6	Standard5	ICAL	1	04/28/2016	07:20:05 PM
7	Standard6	ICAL	1	04/28/2016	07:25:23 PM
8	Standard7	ICAL	1	04/28/2016	07:30:44 PM
9	ICV	ICV	1	04/28/2016	07:35:10 PM
1	ICB	ICB	1	04/28/2016	07:41:32 PM
2	LLICV	CCV1	1	04/28/2016	07:46:21 PM
4	ICSA1	ICSA	1	04/28/2016	07:51:41 PM
5	ICSAB1	ICSAB	1	04/28/2016	07:58:08 PM
38	MB-57214	MBLK	1	04/28/2016	08:04:35 PM
39	LCS-57214	LCS	1	04/28/2016	08:12:44 PM
40	N019500-006B	SAMP	1	04/28/2016	08:18:04 PM
41	N019500-006B	SAMP	5	04/28/2016	08:23:24 PM
42	N019500-006B-PS	PS	1	04/28/2016	08:28:45 PM
43	N019500-006B-MS	MS	1	04/28/2016	08:34:05 PM
44	N019500-006B-MSD	MSD	1	04/28/2016	08:39:27 PM
45	N019500-007B	SAMP	1	04/28/2016	08:44:47 PM
46	N019500-008B	SAMP	1	04/28/2016	08:51:08 PM
7	CCV1	CCV	1	04/28/2016	08:56:29 PM
1	CCB1	CCB	1	04/28/2016	09:02:49 PM
47	N019500-009B	SAMP	1	04/28/2016	09:07:37 PM
48	N019500-013B	SAMP	1	04/28/2016	09:12:58 PM
49	N019500-014B	SAMP	1	04/28/2016	09:19:21 PM
50	N019500-015B	SAMP	1	04/28/2016	09:25:44 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N019501-001B	SAMP	1	04/28/2016	09:31:04 PM
52	N019501-002B	SAMP	1	04/28/2016	09:36:26 PM
53	N019543-001B	SAMP	1	04/28/2016	09:42:47 PM
54	N019543-002B	SAMP	1	04/28/2016	09:48:08 PM
55	N019543-002B-MS	MS	1	04/28/2016	09:53:29 PM
56	N019543-003B	SAMP	1	04/28/2016	09:58:49 PM
7	CCV2	CCV	1	04/28/2016	10:04:11 PM
1	CCB2	CCB	1	04/28/2016	10:10:31 PM
57	N019543-004B	SAMP	1	04/28/2016	10:15:20 PM
58	N019543-005B	SAMP	1	04/28/2016	10:20:42 PM
59	N019543-006B	SAMP	1	04/28/2016	10:26:03 PM
60	N019543-007B	SAMP	1	04/28/2016	10:31:24 PM
61	N019543-008B	SAMP	1	04/28/2016	10:36:46 PM
62	N019543-009B	SAMP	1	04/28/2016	10:42:07 PM
63	N019543-010B	SAMP	1	04/28/2016	10:47:29 PM
64	N019543-011B	SAMP	1	04/28/2016	10:52:50 PM
7	CCV3	CCV	1	04/28/2016	10:58:11 PM
1	CCB3	CCB	1	04/28/2016	11:04:31 PM
2	LLCCV1	CCV2	1	04/28/2016	11:09:19 PM
4	ICSA2	ICSA	1	04/28/2016	11:14:39 PM
5	ICSAB2	ICSAB	1	04/28/2016	11:21:05 PM

INJECTION LOG: 160510C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/10/2016	12:07:58 PM
2	Standard1	ICAL	1	05/10/2016	12:12:49 PM
3	Standard2	ICAL	1	05/10/2016	12:18:08 PM
4	Standard3	ICAL	1	05/10/2016	12:23:28 PM
5	Standard4	ICAL	1	05/10/2016	12:28:50 PM
6	Standard5	ICAL	1	05/10/2016	12:34:13 PM
7	Standard6	ICAL	1	05/10/2016	12:39:33 PM
8	Standard7	ICAL	1	05/10/2016	12:44:54 PM
9	ICV	ICV	1	05/10/2016	12:52:43 PM
1	ICB	ICB	1	05/10/2016	12:59:06 PM
2	LLICV	CCV1	1	05/10/2016	01:03:54 PM
4	ICSA1	ICSA	1	05/10/2016	01:09:14 PM
4	ICSA1	ICSA	1	05/10/2016	01:16:36 PM
5	ICSAB1	ICSAB	1	05/10/2016	01:23:02 PM
98	MB-58317	MBLK	1	05/10/2016	01:29:30 PM
99	LCS1-58317	LCS	1	05/10/2016	01:34:21 PM
100	N019544-001B	SAMP	1	05/10/2016	01:39:43 PM
101	N019544-002B	SAMP	1	05/10/2016	01:46:06 PM
102	N019544-001B	SAMP	5	05/10/2016	01:52:28 PM
103	N019544-001B-PS	PS	1	05/10/2016	01:57:50 PM
104	N019544-001B-MS1	MS	1	05/10/2016	02:04:14 PM
105	N019544-001B-MSD1	MSD	1	05/10/2016	02:10:37 PM
7	CCV1	CCV	1	05/10/2016	02:17:00 PM
1	CCB1	CCB	1	05/10/2016	02:23:20 PM
2	LLCCV1	CCV2	1	05/10/2016	02:28:09 PM
4	ICSA2	ICSA	1	05/10/2016	02:33:29 PM
5	ICSAB2	ICSAB	1	05/10/2016	02:39:56 PM
38	MB-57287	MBLK	1	05/10/2016	04:38:59 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
39	LCS-57287	LCS	1	05/10/2016	04:43:48 PM
40	N019543-012B	SAMP	1	05/10/2016	04:49:09 PM
41	N019543-012B	SAMP	5	05/10/2016	04:54:28 PM
42	N019543-012B-PS	PS	1	05/10/2016	04:59:48 PM
43	N019543-012B-MS	MS	1	05/10/2016	05:05:08 PM
44	N019543-012B-MSD	MSD	1	05/10/2016	05:10:30 PM
45	N019543-013B	SAMP	1	05/10/2016	05:15:50 PM
46	N019543-014B	SAMP	1	05/10/2016	05:21:10 PM
47	N019559-001B	SAMP	1	05/10/2016	05:26:31 PM
7	CCV2	CCV	1	05/10/2016	05:31:52 PM
1	CCB2	CCB	1	05/10/2016	05:38:12 PM
48	N019559-002B	SAMP	1	05/10/2016	05:43:00 PM
49	N019559-003B	SAMP	1	05/10/2016	05:48:23 PM
50	N019559-004B	SAMP	1	05/10/2016	05:53:44 PM
51	N019559-005B	SAMP	1	05/10/2016	05:59:05 PM
52	N019559-006B	SAMP	1	05/10/2016	06:04:27 PM
53	N019559-007B	SAMP	1	05/10/2016	06:09:48 PM
54	N019559-007B-MS	MS	1	05/10/2016	06:15:09 PM
55	N019559-008B	SAMP	1	05/10/2016	06:20:30 PM
56	N019559-009B	SAMP	1	05/10/2016	06:25:51 PM
57	N019559-010B	SAMP	1	05/10/2016	06:31:13 PM
7	CCV3	CCV	1	05/10/2016	06:36:33 PM
1	CCB3	CCB	1	05/10/2016	06:42:54 PM
58	N019559-011B	SAMP	1	05/10/2016	06:47:42 PM
59	N019559-012B	SAMP	1	05/10/2016	06:53:04 PM
60	N019591-001B	SAMP	1	05/10/2016	06:58:25 PM
61	N019591-002B	SAMP	1	05/10/2016	07:04:46 PM
62	N019591-003B	SAMP	1	05/10/2016	07:11:07 PM
63	N019591-004B	SAMP	1	05/10/2016	07:21:38 PM
64	N019591-005B	SAMP	1	05/10/2016	07:28:00 PM
65	MB-57289	MBLK	1	05/10/2016	07:34:21 PM
66	LCS-57289	LCS	1	05/10/2016	07:39:12 PM
67	N019591-006B	SAMP	1	05/10/2016	07:44:33 PM
7	CCV4	CCV	1	05/10/2016	07:49:54 PM
1	CCB4	CCB	1	05/10/2016	07:55:14 PM
2	LLCCV2	CCV2	1	05/10/2016	08:00:03 PM
4	ICSA3	ICSA	1	05/10/2016	08:05:22 PM
5	ICSAB3	ICSAB	1	05/10/2016	08:11:49 PM
68	N019591-006B	SAMP	5	05/10/2016	08:18:17 PM
69	N019591-006B-PS	PS	1	05/10/2016	08:23:38 PM
70	N019591-006B-MS	MS	1	05/10/2016	08:29:59 PM
71	N019591-006B-MSD	MSD	1	05/10/2016	08:36:20 PM
72	N019591-007B	SAMP	1	05/10/2016	08:42:41 PM
73	N019591-009B	SAMP	1	05/10/2016	08:49:02 PM
74	N019591-010B	SAMP	1	05/10/2016	08:55:24 PM
75	N019591-011B	SAMP	1	05/10/2016	09:00:45 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
76	N019591-012B	SAMP	1	05/10/2016	09:06:06 PM
77	N019591-013B	SAMP	1	05/10/2016	09:11:27 PM
7	CCV5	CCV	1	05/10/2016	09:16:48 PM
1	CCB5	CCB	1	05/10/2016	09:22:08 PM
78	N019591-014B	SAMP	1	05/10/2016	09:26:57 PM
79	N019591-015B	SAMP	1	05/10/2016	09:32:17 PM
80	N019592-001B	SAMP	1	05/10/2016	09:37:38 PM
81	N019592-001B-MS	MS	1	05/10/2016	09:43:00 PM
82	N019592-004B	SAMP	1	05/10/2016	09:48:21 PM
83	N019592-005B	SAMP	1	05/10/2016	09:53:42 PM
84	N019592-006B	SAMP	1	05/10/2016	10:00:03 PM
85	N019592-007B	SAMP	1	05/10/2016	10:05:25 PM
86	N019610-001B	SAMP	1	05/10/2016	10:11:47 PM
87	N019610-002B	SAMP	1	05/10/2016	10:18:09 PM
7	CCV6	CCV	1	05/10/2016	10:24:31 PM
1	CCB6	CCB	1	05/10/2016	10:30:52 PM
88	N019610-003B	SAMP	1	05/10/2016	10:35:41 PM
89	N019610-004B	SAMP	1	05/10/2016	10:42:02 PM
90	N019610-007B	SAMP	1	05/10/2016	10:48:25 PM
91	N019610-009B	SAMP	1	05/10/2016	10:53:46 PM
98	MB-58327	MBLK	1	05/10/2016	10:59:07 PM
99	LCS-58327	LCS	1	05/10/2016	11:03:58 PM
100	N019610-010B	SAMP	1	05/10/2016	11:09:19 PM
101	N019610-010B	SAMP	5	05/10/2016	11:14:41 PM
102	N019610-010B-PS	PS	1	05/10/2016	11:20:03 PM
103	N019610-010B-MS	MS	1	05/10/2016	11:25:26 PM
7	CCV7	CCV	1	05/10/2016	11:30:47 PM
1	CCB7	CCB	1	05/10/2016	11:37:07 PM
2	LLCCV3	CCV2	1	05/10/2016	11:41:56 PM
4	ICSA4	ICSA	1	05/10/2016	11:47:15 PM
5	ICSAB4	ICSAB	1	05/10/2016	11:53:41 PM
104	N019610-010B-MSD	MSD	1	05/11/2016	12:00:09 AM
105	N019610-011B	SAMP	1	05/11/2016	12:05:30 AM
106	N019610-012B	SAMP	1	05/11/2016	12:10:53 AM
107	N019610-013B	SAMP	1	05/11/2016	12:17:15 AM
108	N019610-014B	SAMP	1	05/11/2016	12:23:39 AM
109	N019610-015B	SAMP	1	05/11/2016	12:29:01 AM
110	N019611-001B	SAMP	1	05/11/2016	12:35:24 AM
111	N019611-002B	SAMP	1	05/11/2016	12:41:47 AM
112	N019611-003B	SAMP	1	05/11/2016	12:47:09 AM
113	N019611-004B	SAMP	1	05/11/2016	12:52:31 AM
7	CCV8	CCV	1	05/11/2016	12:57:54 AM
1	CCB8	CCB	1	05/11/2016	01:04:14 AM
114	N019611-004B-MS	MS	1	05/11/2016	01:09:03 AM
115	N019611-005B	SAMP	1	05/11/2016	01:14:25 AM
116	N019611-006B	SAMP	1	05/11/2016	01:20:46 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
117	N019611-007B	SAMP	1	05/11/2016	01:26:10 AM
118	N019611-008B	SAMP	1	05/11/2016	01:31:31 AM
119	N019611-010B	SAMP	1	05/11/2016	01:36:55 AM
120	N019611-011B	SAMP	1	05/11/2016	01:42:18 AM
121	N019611-012B	SAMP	1	05/11/2016	01:47:40 AM
122	N019611-013B	SAMP	1	05/11/2016	01:54:03 AM
123	N019611-014B	SAMP	1	05/11/2016	01:59:26 AM
7	CCV9	CCV	1	05/11/2016	02:05:49 AM
1	CCB9	CCB	1	05/11/2016	02:11:09 AM
124	N019611-015B	SAMP	1	05/11/2016	02:15:58 AM
7	CCV10	CCV	1	05/11/2016	02:22:21 AM
1	CCB10	CCB	1	05/11/2016	02:28:41 AM
2	LLCCV4	CCV2	1	05/11/2016	02:33:30 AM
4	ICSA5	ICSA	1	05/11/2016	02:38:49 AM
5	ICSAB5	ICSAB	1	05/11/2016	02:45:16 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/28/2016 8:36:19**
Prep End Date: **4/28/2016 1:00:00**

Initials/ Date: 5/12/2016

Prep Batch **57214** Prep Code: **3010_W_DISS** Technician **Amy Mata**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-11**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57214	Aqueous		25	☐	0	0	25	1.000		
MB-57214	Aqueous		25	☐	0	0	25	1.000		
N019500-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019500-006B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019500-006B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019500-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019500-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019500-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019500-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N019500-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N019500-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N019501-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019501-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-001B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/28/2016 8:36:19**
Prep End Date: **4/28/2016 1:00:00**
Initials/ Date: 5/12/2016

Prep Batch **57214** Prep Code: **3010_W_DISS** Technician **Amy Mata**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-11**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019543-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-011B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/4/2016 8:07:49 A**
Prep End Date: **5/4/2016 12:30:00 P**

Initials/ Date: 5/12/2016

Prep Factor Units: **mL / mL**

Prep Batch **57287** Prep Code: **3010_W_DISS** Technician: **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57287	Aqueous		25	☐	0	0	25	1.000		
MB-57287	Aqueous		25	☐	0	0	25	1.000		
N019543-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-007B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/4/2016 8:07:49 A**
Prep End Date: **5/4/2016 12:30:00 P**

Initials/ Date: 5/12/2016

Prep Factor Units: **mL / mL**

Prep Batch **57287** Prep Code: **3010_W_DISS** Technician: **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019559-007B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-005B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160428B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	04/28/2016	06:53:57 PM	Fe	273.953	-62	0.00	mg/L	
Standard1	04/28/2016	06:58:45 PM	Fe	273.953	537	0.0200	mg/L	
Standard2	04/28/2016	07:04:03 PM	Fe	273.953	1323	0.050	mg/L	
Standard3	04/28/2016	07:09:22 PM	Fe	273.953	54793	2.000	mg/L	
Standard4	04/28/2016	07:14:43 PM	Fe	273.953	134171	5.000	mg/L	
Standard5	04/28/2016	07:20:05 PM	Fe	273.953	203326	7.500	mg/L	
Standard6	04/28/2016	07:25:23 PM	Fe	273.953	272317	10.000	mg/L	
Standard7	04/28/2016	07:30:44 PM	Fe	273.953	515951	20.000	mg/L	0.9997

INITIAL CALIBRATION SUMMARY: 160510C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	05/10/2016	12:07:58 PM	Fe	273.953	65	0.00	mg/L	
Standard1	05/10/2016	12:12:49 PM	Fe	273.953	454	0.0200	mg/L	
Standard2	05/10/2016	12:18:08 PM	Fe	273.953	1199	0.050	mg/L	
Standard3	05/10/2016	12:23:28 PM	Fe	273.953	46602	2.000	mg/L	
Standard4	05/10/2016	12:28:50 PM	Fe	273.953	115669	5.000	mg/L	
Standard5	05/10/2016	12:34:13 PM	Fe	273.953	171053	7.500	mg/L	
Standard6	05/10/2016	12:39:33 PM	Fe	273.953	230604	10.000	mg/L	
Standard7	05/10/2016	12:44:54 PM	Fe	273.953	437141	20.000	mg/L	0.9997

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **ICV**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10335.737	20	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **ZZZZZZ**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.403	20	20.00	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **CCV**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10324.781	20	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **CCV**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10274.381	20	10000	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **CCV**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10308.627	20	10000	0	103	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **ZZZZZZ**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.853	20	20.00	0	99.3	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10336.768	20	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.806	20	20.00	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10316.238	20	10000	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.752	20	20.00	0	98.8	70	130				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10344.438	20	10000	0	103	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10305.558	20	10000	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10300.177	20	10000	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	17.630	20	20.00	0	88.1	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10265.535	20	10000	0	103	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10348.284	20	10000	0	103	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV7	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	CCV	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/10/2016	SeqNo:	2322876

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10283.206	20	10000	0	103	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	ZZZZZZ	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/10/2016	SeqNo:	2322878

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	17.744	20	20.00	0	88.7	70	130				

Sample ID	CCV8	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	CCV	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/11/2016	SeqNo:	2322891

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10317.234	20	10000	0	103	90	110				

Sample ID	CCV9	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	CCV	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/11/2016	SeqNo:	2322903

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10313.758	20	10000	0	103	90	110				

Sample ID	CCV10	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	CCV	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/11/2016	SeqNo:	2322906

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10344.127	20	10000	0	103	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**LLCCV4**	SampType:	**CCV2**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**108380**
Client ID:	**ZZZZZZ**	Batch ID:	**R108380**	TestNo:	**EPA 6010B**			Analysis Date:	**5/11/2016**	SeqNo:	**2322908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.538	20	20.00	0	92.7	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **ICB**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.329155	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **CCB**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.083525	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **CCB**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.492185	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **CCB**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.310837	20									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	2.647	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.561561	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-3.18001	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-3.136883	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.826723	20									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.683358	20									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.685825	20									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.439901	20									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2322892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.374297	20									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2322904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.58575	20									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2322907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.110558	20									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **ICSA**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	457822.485	50	500000	0	91.6	80	120				
Calcium	480649.657	500	500000	0	96.1	80	120				
Iron	176268.852	20	200000	0	88.1	80	120				
Magnesium	468226.134	100	500000	0	93.6	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **ICSAB**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	553889.138	50	500000	0	111	80	120				
Calcium	580422.553	500	500000	0	116	80	120				
Iron	192444.058	20	200000	0	96.2	80	120				
Magnesium	519148.332	100	500000	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **ICSA**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	455328.519	50	500000	0	91.1	80	120				
Calcium	473295.433	500	500000	0	94.7	80	120				
Iron	174919.972	20	200000	0	87.5	80	120				
Magnesium	460920.731	100	500000	0	92.2	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **ICSAB**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	550665.930	50	500000	0	110	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID: **ICSAB**	Batch ID: **R107171**	TestNo: **EPA 6010B**		Analysis Date: **4/28/2016**	SeqNo: **2310113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	575433.212	500	500000	0	115	80	120				
Iron	190832.633	20	200000	0	95.4	80	120				
Magnesium	510079.352	100	500000	0	102	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108380**
Client ID: **ICSA** Batch ID: **R108380** TestNo: **EPA 6010B** Analysis Date: **5/10/2016** SeqNo: **2322788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	461579.927	50	500000	0	92.3	80	120				
Calcium	481697.975	500	500000	0	96.3	80	120				
Iron	161221.150	20	200000	0	80.6	80	120				
Magnesium	448645.497	100	500000	0	89.7	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108380**
Client ID: **ICSAB** Batch ID: **R108380** TestNo: **EPA 6010B** Analysis Date: **5/10/2016** SeqNo: **2322789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	558473.112	50	500000	0	112	80	120				
Calcium	579877.398	500	500000	0	116	80	120				
Iron	181882.538	20	200000	0	90.9	80	120				
Magnesium	520696.919	100	500000	0	104	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108380**
Client ID: **ICSA** Batch ID: **R108380** TestNo: **EPA 6010B** Analysis Date: **5/10/2016** SeqNo: **2322801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460500.123	50	500000	0	92.1	80	120				
Calcium	479120.818	500	500000	0	95.8	80	120				
Iron	162046.571	20	200000	0	81.0	80	120				
Magnesium	463492.303	100	500000	0	92.7	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108380**
Client ID: **ICSAB** Batch ID: **R108380** TestNo: **EPA 6010B** Analysis Date: **5/10/2016** SeqNo: **2322802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	557505.070	50	500000	0	112	80	120				
Calcium	584397.237	500	500000	0	117	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSAB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	182873.286	20	200000	0	91.4	80	120				
Magnesium	537959.521	100	500000	0	108	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSA**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	456928.999	50	500000	0	91.4	80	120				
Calcium	470734.112	500	500000	0	94.1	80	120				
Iron	162271.224	20	200000	0	81.1	80	120				
Magnesium	470490.752	100	500000	0	94.1	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSAB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	553074.958	50	500000	0	111	80	120				
Calcium	574958.086	500	500000	0	115	80	120				
Iron	183128.925	20	200000	0	91.6	80	120				
Magnesium	544754.543	100	500000	0	109	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSA**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	459207.344	50	500000	0	91.8	80	120				
Calcium	471593.375	500	500000	0	94.3	80	120				
Iron	162640.136	20	200000	0	81.3	80	120				
Magnesium	468957.875	100	500000	0	93.8	80	120				

Qualifiers:

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

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSAB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	570164.769	500	500000	0	114	80	120				
Iron	183332.630	20	200000	0	91.7	80	120				
Magnesium	543404.599	100	500000	0	109	80	120				

Sample ID **ICSA5**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSA**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2322909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	457114.006	50	500000	0	91.4	80	120				
Calcium	466124.665	500	500000	0	93.2	80	120				
Iron	162539.595	20	200000	0	81.3	80	120				
Magnesium	461783.012	100	500000	0	92.4	80	120				

Sample ID **ICSAB5**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSAB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2322910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	552882.782	50	500000	0	111	80	120				
Calcium	565558.356	500	500000	0	113	80	120				
Iron	183327.125	20	200000	0	91.7	80	120				
Magnesium	533792.583	100	500000	0	107	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160428B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.45	65-125	PASS
Standard2	ICAL	1	1	99.93	65-125	PASS
Standard3	ICAL	1	1	99.67	65-125	PASS
Standard4	ICAL	1	0.99	98.75	65-125	PASS
Standard5	ICAL	1	0.98	98.45	65-125	PASS
Standard6	ICAL	1	0.97	96.74	65-125	PASS
Standard7	ICAL	1	0.96	96.31	65-125	PASS
ICV	ICV	1	0.97	97.05	65-125	PASS
ICB	ICB	1	0.99	99.22	65-125	PASS
LLICV	CCV1	1	0.99	99.36	65-125	PASS
ICSA1	ICSA	1	1	99.66	65-125	PASS
ICSAB1	ICSAB	1	0.79	78.96	65-125	PASS
MB-57214	MBLK	1	0.99	99.27	65-125	PASS
LCS-57214	LCS	1	1.047	104.74	65-125	PASS
N019500-006B	SAMP	1	0.97	97.2	65-125	PASS
N019500-006B	SAMP	5	0.98	98.22	65-125	PASS
N019500-006B-PS	PS	1	0.94	94.042	65-125	PASS
N019500-006B-MS	MS	1	0.95	95.47	65-125	PASS
N019500-006B-MSD	MSD	1	0.95	95.009	65-125	PASS
N019500-007B	SAMP	1	0.94	93.89	65-125	PASS
N019500-008B	SAMP	1	0.98	97.63	65-125	PASS
CCV1	CCV	1	0.98	97.66	65-125	PASS
CCB1	CCB	1	0.99	99.45	65-125	PASS
N019500-009B	SAMP	1	0.93	93.26	65-125	PASS
N019500-013B	SAMP	1	0.97	96.61	65-125	PASS
N019500-014B	SAMP	1	0.96	95.85	65-125	PASS
N019500-015B	SAMP	1	0.96	96.11	65-125	PASS
N019501-001B	SAMP	1	0.96	95.71	65-125	PASS
N019501-002B	SAMP	1	0.94	93.55	65-125	PASS
N019543-001B	SAMP	1	0.95	95.23	65-125	PASS
N019543-002B	SAMP	1	0.96	96.37	65-125	PASS
N019543-002B-MS	MS	1	0.97	96.6	65-125	PASS
N019543-003B	SAMP	1	0.96	96.11	65-125	PASS
CCV2	CCV	1	0.98	97.66	65-125	PASS
CCB2	CCB	1	1	99.91	65-125	PASS
N019543-004B	SAMP	1	0.98	97.59	65-125	PASS
N019543-005B	SAMP	1	0.96	96.18	65-125	PASS
N019543-006B	SAMP	1	0.95	94.5	65-125	PASS
N019543-007B	SAMP	1	0.97	96.67	65-125	PASS
N019543-008B	SAMP	1	0.97	97.11	65-125	PASS

INTERNAL STANDARD: 160428B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N019543-009B	SAMP	1	0.97	96.64	65-125	PASS
N019543-010B	SAMP	1	0.95	95.45	65-125	PASS
N019543-011B	SAMP	1	0.96	96.23	65-125	PASS
CCV3	CCV	1	0.98	97.74	65-125	PASS
CCB3	CCB	1	1	99.74	65-125	PASS
LLCCV1	CCV2	1	1	99.89	65-125	PASS
ICSA2	ICSA	1	1.001	100.1	65-125	PASS
ICSAB2	ICSAB	1	0.79	79.1	65-125	PASS

INTERNAL STANDARD: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.012	101.22	65-125	PASS
Standard2	ICAL	1	1.035	103.49	65-125	PASS
Standard3	ICAL	1	1.02	101.95	65-125	PASS
Standard4	ICAL	1	1	99.83	65-125	PASS
Standard5	ICAL	1	1.08	107.96	65-125	PASS
Standard6	ICAL	1	0.99	99.47	65-125	PASS
Standard7	ICAL	1	0.99	98.7	65-125	PASS
ICV	ICV	1	1.0064	100.64	65-125	PASS
ICB	ICB	1	1.018	101.79	65-125	PASS
LLICV	CCV1	1	1.0093	100.93	65-125	PASS
ICSA1	ICSA	1	-0.00013	-0.013	65-125	NR!
ICSA1	ICSA	1	1.046	104.58	65-125	PASS
ICSAB1	ICSAB	1	0.83	83.037	65-125	PASS
CCV1	CCV	1	0.99	98.88	65-125	PASS
CCB1	CCB	1	1	100	65-125	PASS
LLCCV1	CCV2	1	1.0012	100.12	65-125	PASS
ICSA2	ICSA	1	1.034	103.41	65-125	PASS
ICSAB2	ICSAB	1	0.82	81.88	65-125	PASS
MB-57287	MBLK	1	0.99	99.013	65-125	PASS
LCS-57287	LCS	1	0.99	98.95	65-125	PASS
N019543-012B	SAMP	1	0.93	92.69	65-125	PASS
N019543-012B	SAMP	5	0.96	96.44	65-125	PASS
N019543-012B-PS	PS	1	0.9	89.69	65-125	PASS
N019543-012B-MS	MS	1	0.89	88.82	65-125	PASS
N019543-012B-MSD	MSD	1	0.87	87.48	65-125	PASS
N019543-013B	SAMP	1	0.88	88.42	65-125	PASS
N019543-014B	SAMP	1	0.88	88.12	65-125	PASS
N019559-001B	SAMP	1	0.91	90.79	65-125	PASS
CCV2	CCV	1	0.96	95.6	65-125	PASS
CCB2	CCB	1	0.98	97.56	65-125	PASS
N019559-002B	SAMP	1	0.94	93.86	65-125	PASS
N019559-003B	SAMP	1	0.94	94.074	65-125	PASS
N019559-004B	SAMP	1	0.9	90.43	65-125	PASS
N019559-005B	SAMP	1	1.02	102	65-125	PASS
N019559-006B	SAMP	1	0.93	92.53	65-125	PASS
N019559-007B	SAMP	1	0.92	92.11	65-125	PASS
N019559-007B-MS	MS	1	0.89	88.86	65-125	PASS
N019559-008B	SAMP	1	0.9	89.72	65-125	PASS
N019559-009B	SAMP	1	0.91	90.67	65-125	PASS
N019559-010B	SAMP	1	0.92	92	65-125	PASS

INTERNAL STANDARD: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV3	CCV	1	0.95	94.92	65-125	PASS
CCB3	CCB	1	0.96	96.057	65-125	PASS
N019559-011B	SAMP	1	0.91	90.67	65-125	PASS
N019559-012B	SAMP	1	0.91	90.7	65-125	PASS
N019591-001B	SAMP	1	0.86	86.24	65-125	PASS
N019591-002B	SAMP	1	0.87	87.49	65-125	PASS
N019591-003B	SAMP	1	0.9	89.57	65-125	PASS
N019591-004B	SAMP	1	1.0096	100.96	65-125	PASS
N019591-005B	SAMP	1	0.9	89.55	65-125	PASS
CCV4	CCV	1	0.95	94.59	65-125	PASS
CCB4	CCB	1	0.95	95.17	65-125	PASS
LLCCV2	CCV2	1	0.97	96.59	65-125	PASS
ICSA3	ICSA	1	1	99.92	65-125	PASS
ICSAB3	ICSAB	1	0.79	79.082	65-125	PASS
CCV5	CCV	1	0.96	95.94	65-125	PASS
CCB5	CCB	1	0.97	97.38	65-125	PASS
CCV6	CCV	1	0.96	96.22	65-125	PASS
CCB6	CCB	1	0.98	97.99	65-125	PASS
CCV7	CCV	1	0.95	94.82	65-125	PASS
CCB7	CCB	1	0.96	96.48	65-125	PASS
LLCCV3	CCV2	1	0.97	97.21	65-125	PASS
ICSA4	ICSA	1	1.01	101.01	65-125	PASS
ICSAB4	ICSAB	1	0.8	80.39	65-125	PASS
CCV8	CCV	1	0.96	96.28	65-125	PASS
CCB8	CCB	1	0.98	97.83	65-125	PASS
CCV9	CCV	1	0.94	93.69	65-125	PASS
CCB9	CCB	1	0.95	95.29	65-125	PASS
CCV10	CCV	1	0.94	94.36	65-125	PASS
CCB10	CCB	1	0.95	95.37	65-125	PASS
LLCCV4	CCV2	1	0.97	97.33	65-125	PASS
ICSA5	ICSA	1	1.006	100.6	65-125	PASS
ICSAB5	ICSAB	1	0.79	79.23	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019543
Test Method: EPA 6010B
Analysis Date: 04/28/16

Matrix: Groundwater
Batch No.: 57214

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019500-006B DT 5X	Iron	ug/L	462.7646	NA	443.196	4.42%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019543
Test Method: EPA 6010B
Analysis Date: 05/10/16

Matrix: Groundwater
Batch No.: 57287

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019543-012B DT 5X	Iron	ug/L	0	NA	18.46253	100.00%	10

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N019500-006B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **107171**
Client ID:	**ZZZZZZ**	Batch ID: **57214**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **4/28/2016**	SeqNo: **2310082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	517.628	20	100.0	443.2	74.4	80	120				S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N019543-012B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	ZZZZZZ	Batch ID:	57287	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322807

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.916	20	100.0	18.46	101	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57237
ASSET #: N019543

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/4/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

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

1st Level Reviewer 5/12/2016 Date: —

2nd Level Reviewer 5/13/2016 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N019543-001C** , the concentration in ug/L is calculated as follows:

Iron , ug/L = 0.11422 * 1 * (25/25) * 1000

Iron , ug/L = 114.22

Reporting results in two significant figures,

Iron , ug/L = 110

% RSD SUMMARY

RSD SUMMARY: 160504A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	7.049	15	PASS
Standard1	ICAL	1	Fe	0.02	0.77	15	PASS
Standard2	ICAL	1	Fe	0.05	2.051	15	PASS
Standard3	ICAL	1	Fe	2	0.79	15	PASS
Standard4	ICAL	1	Fe	5	0.64	15	PASS
Standard5	ICAL	1	Fe	7.5	0.52	15	PASS
Standard6	ICAL	1	Fe	10	0.87	15	PASS
Standard7	ICAL	1	Fe	20	0.077	15	PASS
ICV	ICV	1	Fe	10.45	0.034	15	PASS
ICB	ICB	1	Fe	-0.00047	73.58	15	<PQL
LLICV	CCV1	1	Fe	0.024	2.46	20	PASS
ICSA1	ICSA	1	Fe	171.01	0.23	15	PASS
ICSAB1	ICSAB	1	Fe	191.88	0.046	15	PASS
MB-57237	MBLK	1	Fe	0.0023	34.12	15	<PQL
LCS-57237	LCS	1	Fe	0.14	0.059	15	PASS
N019543-001C	SAMP	1	Fe	0.11	0.14	15	PASS
N019543-001C	SAMP	5	Fe	0.024	3.29	15	PASS
N019543-001C-PS	PS	1	Fe	0.2	1.00023	15	PASS
N019543-001C-MS	MS	1	Fe	0.2	0.73	15	PASS
N019543-001C-MSD	MSD	1	Fe	0.2	0.77	15	PASS
N019543-002C	SAMP	1	Fe	0.087	1.31	15	PASS
N019543-003C	SAMP	1	Fe	0.083	1.033	15	PASS
N019543-004C	SAMP	1	Fe	0.055	4.45	15	PASS
CCV1	CCV	1	Fe	10.3	0.8	15	PASS
CCB1	CCB	1	Fe	-0.00034	190.12	15	<PQL
N019543-005C	SAMP	1	Fe	0.065	0.92	15	PASS
N019543-006C	SAMP	1	Fe	0.063	1.11	15	PASS
N019543-007C	SAMP	1	Fe	0.11	0.49	15	PASS
N019543-008C	SAMP	1	Fe	0.071	0.51	15	PASS
N019543-009C	SAMP	1	Fe	0.04	4.11	15	PASS
N019543-010C	SAMP	1	Fe	0.04	0.69	15	PASS
N019543-011C	SAMP	1	Fe	0.095	1.05	15	PASS
N019543-011C-MS	MS	1	Fe	0.18	0.45	15	PASS
N019543-012C	SAMP	1	Fe	0.04	2.73	15	PASS
N019543-013C	SAMP	1	Fe	3.97	0.37	15	PASS
CCV2	CCV	1	Fe	9.89	0.038	15	PASS
CCB2	CCB	1	Fe	0.00012	502.55	15	<PQL
N019543-014C	SAMP	1	Fe	3.99	0.54	15	PASS
N019559-001C	SAMP	1	Fe	0.082	0.44	15	PASS
N019559-002C	SAMP	1	Fe	0.064	0.28	15	PASS
N019559-003C	SAMP	1	Fe	0.056	0.97	15	PASS
N019559-004C	SAMP	1	Fe	0.059	1.046	15	PASS

RSD SUMMARY: 160504A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N019559-005C	SAMP	1	Fe	0.11	0.69	15	PASS
N019559-006C	SAMP	1	Fe	0.059	0.58	15	PASS
LCS-57237	LCS	1	Fe	0.1	0.69	15	PASS
CCV3	CCV	1	Fe	10.17	1.096	15	PASS
CCB3	CCB	1	Fe	-0.00077	131.26	15	<PQL
LLCCV1	CCV2	1	Fe	0.022	1.94	20	PASS
ICSA2	ICSA	1	Fe	167.96	0.076	15	PASS
ICSAB2	ICSAB	1	Fe	188.36	0.11	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160504A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/04/2016	08:44:33 AM
2	Standard1	ICAL	1	05/04/2016	08:49:24 AM
3	Standard2	ICAL	1	05/04/2016	08:54:43 AM
4	Standard3	ICAL	1	05/04/2016	09:00:04 AM
5	Standard4	ICAL	1	05/04/2016	09:05:25 AM
6	Standard5	ICAL	1	05/04/2016	09:10:46 AM
7	Standard6	ICAL	1	05/04/2016	09:16:04 AM
8	Standard7	ICAL	1	05/04/2016	09:21:24 AM
9	ICV	ICV	1	05/04/2016	09:26:09 AM
1	ICB	ICB	1	05/04/2016	09:32:32 AM
2	LLICV	CCV1	1	05/04/2016	09:37:20 AM
4	ICSA1	ICSA	1	05/04/2016	09:42:40 AM
5	ICSAB1	ICSAB	1	05/04/2016	09:49:07 AM
38	MB-57237	MBLK	1	05/04/2016	09:55:35 AM
39	LCS-57237	LCS	1	05/04/2016	10:00:24 AM
40	N019543-001C	SAMP	1	05/04/2016	10:05:44 AM
41	N019543-001C	SAMP	5	05/04/2016	10:11:05 AM
42	N019543-001C-PS	PS	1	05/04/2016	10:16:24 AM
43	N019543-001C-MS	MS	1	05/04/2016	10:21:44 AM
44	N019543-001C-MSD	MSD	1	05/04/2016	10:27:05 AM
45	N019543-002C	SAMP	1	05/04/2016	10:32:25 AM
46	N019543-003C	SAMP	1	05/04/2016	10:37:46 AM
47	N019543-004C	SAMP	1	05/04/2016	10:43:07 AM
7	CCV1	CCV	1	05/04/2016	10:48:28 AM
1	CCB1	CCB	1	05/04/2016	10:54:48 AM
48	N019543-005C	SAMP	1	05/04/2016	10:59:36 AM
49	N019543-006C	SAMP	1	05/04/2016	11:04:57 AM
50	N019543-007C	SAMP	1	05/04/2016	11:10:18 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N019543-008C	SAMP	1	05/04/2016	11:15:39 AM
52	N019543-009C	SAMP	1	05/04/2016	11:21:00 AM
53	N019543-010C	SAMP	1	05/04/2016	11:26:20 AM
54	N019543-011C	SAMP	1	05/04/2016	11:31:40 AM
55	N019543-011C-MS	MS	1	05/04/2016	11:37:01 AM
56	N019543-012C	SAMP	1	05/04/2016	11:42:24 AM
57	N019543-013C	SAMP	1	05/04/2016	11:47:44 AM
7	CCV2	CCV	1	05/04/2016	11:53:05 AM
1	CCB2	CCB	1	05/04/2016	11:57:59 AM
58	N019543-014C	SAMP	1	05/04/2016	12:02:48 PM
59	N019559-001C	SAMP	1	05/04/2016	12:08:09 PM
60	N019559-002C	SAMP	1	05/04/2016	12:13:31 PM
61	N019559-003C	SAMP	1	05/04/2016	12:18:53 PM
62	N019559-004C	SAMP	1	05/04/2016	12:24:15 PM
63	N019559-005C	SAMP	1	05/04/2016	12:29:36 PM
64	N019559-006C	SAMP	1	05/04/2016	12:34:57 PM
39	LCS-57237	LCS	1	05/04/2016	12:46:15 PM
7	CCV3	CCV	1	05/04/2016	12:51:36 PM
1	CCB3	CCB	1	05/04/2016	12:56:56 PM
2	LLCCV1	CCV2	1	05/04/2016	01:01:44 PM
4	ICSA2	ICSA	1	05/04/2016	01:07:02 PM
5	ICSAB2	ICSAB	1	05/04/2016	01:13:29 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/3/2016 8:28:40 A**
Prep End Date: **5/3/2016 1:00:00 P**

Initials/ Date: 5/12/2016

Prep Factor Units: **mL / mL**

Prep Batch **57237** Prep Code: **3010_W** Technician: **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57237	Aqueous		25	☐	0	0	25	1.000		
MB-57237	Aqueous		25	☐	0	0	25	1.000		
N019543-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-010C	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/3/2016 8:28:40 A**
Prep End Date: **5/3/2016 1:00:00 P**

Initials/ Date: 5/12/2016

Prep Factor Units: **mL / mL**

Prep Batch **57237** Prep Code: **3010_W** Technician: **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019543-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-011C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-014C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-006C	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160504A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	05/04/2016	08:44:33 AM	Fe	273.953	-99	0.00	mg/L	
Standard1	05/04/2016	08:49:24 AM	Fe	273.953	658	0.0200	mg/L	
Standard2	05/04/2016	08:54:43 AM	Fe	273.953	1786	0.050	mg/L	
Standard3	05/04/2016	09:00:04 AM	Fe	273.953	58290	2.000	mg/L	
Standard4	05/04/2016	09:05:25 AM	Fe	273.953	148273	5.000	mg/L	
Standard5	05/04/2016	09:10:46 AM	Fe	273.953	219776	7.500	mg/L	
Standard6	05/04/2016	09:16:04 AM	Fe	273.953	296340	10.000	mg/L	
Standard7	05/04/2016	09:21:24 AM	Fe	273.953	556119	20.000	mg/L	0.9996

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICV**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10445.473	20	10000	0	104	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ZZZZZZ**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	23.761	20	20.00	0	119	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCV**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10298.911	20	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCV**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9886.048	20	10000	0	98.9	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCV**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10173.537	20	10000	0	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**LLCCV1**	SampType:	**CCV2**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**108259**
Client ID:	**ZZZZZZ**	Batch ID:	**R108259**	TestNo:	**EPA 6010B**			Analysis Date:	**5/4/2016**	SeqNo:	**2315902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.440	20	20.00	0	112	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.467984	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.344481	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.117	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.768342	20									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSA**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	448842.702	50	500000	0	89.8	80	120				
Calcium	448796.608	500	500000	0	89.8	80	120				
Iron	171010.681	20	200000	0	85.5	80	120				
Magnesium	436725.085	100	500000	0	87.3	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSAB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	543631.415	50	500000	0	109	80	120				
Calcium	541965.559	500	500000	0	108	80	120				
Iron	191880.031	20	200000	0	95.9	80	120				
Magnesium	500977.126	100	500000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSA**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	446119.711	50	500000	0	89.2	80	120				
Calcium	421445.011	500	500000	0	84.3	80	120				
Iron	167957.218	20	200000	0	84.0	80	120				
Magnesium	407724.450	100	500000	0	81.5	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSAB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	539360.780	50	500000	0	108	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSAB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	510961.847	500	500000	0	102	80	120				
Iron	188355.129	20	200000	0	94.2	80	120				
Magnesium	468859.301	100	500000	0	93.8	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160504A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.043	104.3	65-125	PASS
Standard2	ICAL	1	1.073	107.31	65-125	PASS
Standard3	ICAL	1	1.053	105.3	65-125	PASS
Standard4	ICAL	1	1.25	125.00	65-125	PASS
Standard5	ICAL	1	1.24	124.39	65-125	PASS
Standard6	ICAL	1	1.0059	100.59	65-125	PASS
Standard7	ICAL	1	0.99	98.63	65-125	PASS
ICV	ICV	1	1.0095	100.95	65-125	PASS
ICB	ICB	1	1	99.83	65-125	PASS
LLICV	CCV1	1	1.036	103.56	65-125	PASS
ICSA1	ICSA	1	1.018	101.83	65-125	PASS
ICSAB1	ICSAB	1	0.83	83.016	65-125	PASS
MB-57237	MBLK	1	1	99.55	65-125	PASS
LCS-57237	LCS	1	0.99	99.26	65-125	PASS
N019543-001C	SAMP	1	0.96	96.19	65-125	PASS
N019543-001C	SAMP	5	1.0061	100.61	65-125	PASS
N019543-001C-PS	PS	1	0.94	93.53	65-125	PASS
N019543-001C-MS	MS	1	0.95	95.4	65-125	PASS
N019543-001C-MSD	MSD	1	0.95	94.71	65-125	PASS
N019543-002C	SAMP	1	0.95	95.48	65-125	PASS
N019543-003C	SAMP	1	0.96	95.92	65-125	PASS
N019543-004C	SAMP	1	0.96	95.64	65-125	PASS
CCV1	CCV	1	1.036	103.63	65-125	PASS
CCB1	CCB	1	1.02	101.97	65-125	PASS
N019543-005C	SAMP	1	0.94	93.8	65-125	PASS
N019543-006C	SAMP	1	0.96	96.11	65-125	PASS
N019543-007C	SAMP	1	0.97	96.95	65-125	PASS
N019543-008C	SAMP	1	0.99	98.7	65-125	PASS
N019543-009C	SAMP	1	0.96	95.97	65-125	PASS
N019543-010C	SAMP	1	0.97	96.74	65-125	PASS
N019543-011C	SAMP	1	0.95	95.23	65-125	PASS
N019543-011C-MS	MS	1	1.0073	100.73	65-125	PASS
N019543-012C	SAMP	1	1.0024	100.24	65-125	PASS
N019543-013C	SAMP	1	0.92	92.47	65-125	PASS
CCV2	CCV	1	1.027	102.74	65-125	PASS
CCB2	CCB	1	1.021	102.08	65-125	PASS
N019543-014C	SAMP	1	0.95	94.9	65-125	PASS
N019559-001C	SAMP	1	0.95	95.15	65-125	PASS
N019559-002C	SAMP	1	1	99.87	65-125	PASS
N019559-003C	SAMP	1	0.96	95.87	65-125	PASS

INTERNAL STANDARD: 160504A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N019559-004C	SAMP	1	0.95	95.33	65-125	PASS
N019559-005C	SAMP	1	0.94	93.74	65-125	PASS
N019559-006C	SAMP	1	0.99	99.2	65-125	PASS
LCS-57237	LCS	1	0.97	97.16	65-125	PASS
CCV3	CCV	1	1.031	103.13	65-125	PASS
CCB3	CCB	1	1.018	101.77	65-125	PASS
LLCCV1	CCV2	1	1.063	106.29	65-125	PASS
ICSA2	ICSA	1	1.049	104.9	65-125	PASS
ICSAB2	ICSAB	1	0.85	84.59	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019543
Test Method: EPA 6010B
Analysis Date: 05/04/16

Matrix: Groundwater
Batch No.: 57237

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019543-001C DT 5X	Iron	ug/L	121.1417	NA	114.2178	6.06%	10

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N019543-001C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID:	**ZZZZZZ**	Batch ID: **57237**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2315872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	196.327	20	100.0	114.2	82.1	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57229
ASSET #: N019543

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/4/2016

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).		X				
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Ba in N019543-001B PS/MS/MSD & N019543-011B MS is over linear range. For dilution.
%RSD of Se in N019543-009B & 014B failed > 15%. Se for rerun.

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

1st 2nd

2nd Level Reviewer 5/12/2016 Date:

5/13/2016 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57229
ASSET #: N019543

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/9/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution & rerun of Ba in N019543-001B PS/MS/MS/MSD, N019543-011B MS & Se in N019543-009B & 014B only.

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

1st 2nd 2nd Level Reviewer 5/12/2016 Date: —

5/13/2016 Date: ~

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N019543-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.13152 * 1 * (25/25)

Arsenic , ug/L = 2.131520

Reporting results in two significant figures,

Arsenic , ug/L = 2.1

% RSD SUMMARY

PERCENT RSD SUMMARY: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.22	2.18	15	PASS	0.12	7.077	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	5.23	15	PASS	0.47	2.098	15	PASS
Std3-5/50 ppb	ICAL	1	4.81	0.55	15	PASS	4.85	0.8	15	PASS
Std4-10/100 ppb	ICAL	1	9.71	0.99	15	PASS	9.87	1.18	15	PASS
Std5-20/200 ppb	ICAL	1	19.021	0.22	15	PASS	19.37	0.5	15	PASS
Std6-40/400 ppb	ICAL	1	37.53	1.38	15	PASS	38.73	0.59	15	PASS
Std7-100/1000 ppb	ICAL	1	98.49	0.95	15	PASS	100.65	1.054	15	PASS
Std8-200/2000 ppb	ICAL	1	201.37	0.83	15	PASS	208.28	2.11	15	PASS
ICV	ICV	1	96.28	0.32	15	PASS	9.73	1.076	15	PASS
ICB	ICB	1	0.0081	36.91	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.016	0.91	20	PASS	0.97	0.77	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.16	5.069	15	PASS
ICSAB1	ICSAB	1	17.16	1.2	15	PASS	19.63	1.89	15	PASS
CCV1	CCV	1	19.53	0.91	15	PASS	19.96	1.61	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.63	0.94	15	PASS	19.82	0.44	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.023	60.37	15	<PQL
MB-57229	MBLK	1	<0.000	N/A	15	<PQL	0.052	48.3	15	<PQL
LCS-57229	LCS	1	96.99	0.62	15	PASS	9.49	0.88	15	PASS
N019543-001B	SAMP	1	122.72	0.84	15	PASS	0.0034	398.44	15	<PQL
N019543-001B	SAMP	5	25.45	0.75	15	PASS	0.018	101.34	15	<PQL
N019543-001B-PS	PS	1	213.087	0.061	15	PASS	9.18	2.38	15	PASS
CCV3	CCV	1	19.83	0.94	15	PASS	19.23	0.88	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.059	3.078	20	PASS	0.98	2.5	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.19	4.25	15	PASS
ICSAB2	ICSAB	1	17.34	1.066	15	PASS	20.41	0.44	15	PASS
N019543-001B-MS	MS	1	210.36	0.95	15	PASS	9.19	1.99	15	PASS
N019543-001B-MSD	MSD	1	209.73	0.3	15	PASS	9.23	1.44	15	PASS
N019543-002B	SAMP	1	127.87	0.79	15	PASS	<0.000	N/A	15	<PQL
N019543-003B	SAMP	1	127.56	0.56	15	PASS	<0.000	N/A	15	<PQL
N019543-004B	SAMP	1	134.073	0.7	15	PASS	<0.000	N/A	15	<PQL
N019543-005B	SAMP	1	123.68	0.93	15	PASS	<0.000	N/A	15	<PQL
N019543-006B	SAMP	1	127.62	1.07	15	PASS	<0.000	N/A	15	<PQL
N019543-007B	SAMP	1	119.057	0.98	15	PASS	0.028	7.1	15	PASS
N019543-008B	SAMP	1	122.96	0.57	15	PASS	<0.000	N/A	15	<PQL
N019543-009B	SAMP	1	116.79	0.94	15	PASS	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.75	0.48	15	PASS	19.5	1.011	15	PASS
CCB4	CCB	1	0.0017	123.88	15	<PQL	<0.000	N/A	15	<PQL
N019543-010B	SAMP	1	117.22	0.81	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019543-011B	SAMP	1	120.75	1.098	15	PASS	<0.000	N/A	15	<PQL
N019543-011B-MS	MS	1	190.82	0.4	15	PASS	8.19	0.51	15	PASS
N019543-012B	SAMP	1	121.83	0.54	15	PASS	<0.000	N/A	15	<PQL
N019543-013B	SAMP	1	122.47	0.98	15	PASS	<0.000	N/A	15	<PQL
N019543-014B	SAMP	1	116.31	0.46	15	PASS	<0.000	N/A	15	<PQL
N019544-001B	SAMP	1	13.84	0.6	15	PASS	1.12	4.023	15	PASS
N019544-002B	SAMP	1	29.66	1	15	PASS	579.93	0.4	15	PASS
CCV5	CCV	1	19.88	0.67	15	PASS	19.18	1.13	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.027	0.15	20	PASS	0.98	4.24	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.17	7.55	15	PASS
ICSAB3	ICSAB	1	17.25	1.1	15	PASS	20.34	0.63	15	PASS

PERCENT RSD SUMMARY: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.19	2.91	15	PASS	0.1	10.032	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	5.56	15	PASS	0.49	5.42	15	PASS
Std3-5/50 ppb	ICAL	1	4.8	1.69	15	PASS	4.89	1.69	15	PASS
Std4-10/100 ppb	ICAL	1	9.72	2.069	15	PASS	9.84	1.27	15	PASS
Std5-20/200 ppb	ICAL	1	19.13	1.5	15	PASS	19.64	1.68	15	PASS
Std6-40/400 ppb	ICAL	1	37.92	1.2	15	PASS	39.15	0.33	15	PASS
Std7-100/1000 ppb	ICAL	1	98.22	1.23	15	PASS	100.43	0.3	15	PASS
Std8-200/2000 ppb	ICAL	1	201.41	1.12	15	PASS	211.47	0.59	15	PASS
ICV	ICV	1	93.54	1.086	15	PASS	10.13	1.16	15	PASS
ICB	ICB	1	0.013	60.55	15	<PQL	0.0045	121.85	15	<PQL
LLICV	CCV1	1	0.51	2.72	20	PASS	0.11	8.13	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	16.72	1.98	15	PASS	20.38	2.048	15	PASS
CCV1	CCV	1	19.22	1.39	15	PASS	19.56	0.47	15	PASS
CCB1	CCB	1	0.015	19.53	15	<PQL	0.0052	79.93	15	<PQL
CCV2	CCV	1	18.96	0.81	15	PASS	20.11	1.081	15	PASS
CCB2	CCB	1	0.019	46.69	15	<PQL	0.0099	108.08	15	<PQL
MB-57229	MBLK	1	0.035	28.74	15	<PQL	0.0086	3.53	15	PASS
LCS-57229	LCS	1	90.74	1.054	15	PASS	9.62	1.077	15	PASS
N019543-001B	SAMP	1	0.1	37.64	15	<PQL	2.13	8.47	15	PASS
N019543-001B	SAMP	5	0.095	16.73	15	<PQL	0.46	10.89	15	PASS
N019543-001B-PS	PS	1	88.52	1.51	15	PASS	11.73	1.015	15	PASS
CCV3	CCV	1	19.14	0.026	15	PASS	19.71	2.063	15	PASS
CCB3	CCB	1	0.014	43.7	15	<PQL	0.01	50.45	15	<PQL
LLCCV1	CCV2	1	0.49	2.76	20	PASS	0.097	15.41	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	16.81	1.22	15	PASS	20.57	2.18	15	PASS
N019543-001B-MS	MS	1	88.17	1.35	15	PASS	11.87	0.51	15	PASS
N019543-001B-MSD	MSD	1	88.46	0.62	15	PASS	11.62	2.21	15	PASS
N019543-002B	SAMP	1	<0.000	N/A	15	<PQL	2.27	1.92	15	PASS
N019543-003B	SAMP	1	<0.000	N/A	15	<PQL	2.35	2.51	15	PASS
N019543-004B	SAMP	1	<0.000	N/A	15	<PQL	2.42	4.49	15	PASS
N019543-005B	SAMP	1	<0.000	N/A	15	<PQL	2.17	0.38	15	PASS
N019543-006B	SAMP	1	<0.000	N/A	15	<PQL	2.24	2.65	15	PASS
N019543-007B	SAMP	1	<0.000	N/A	15	<PQL	2.11	3.56	15	PASS
N019543-008B	SAMP	1	5.27	1.36	15	PASS	2.18	4.39	15	PASS
N019543-009B	SAMP	1	<0.000	N/A	15	<PQL	2.068	2.87	15	PASS
CCV4	CCV	1	19.33	0.32	15	PASS	19.6	1.89	15	PASS
CCB4	CCB	1	0.0046	53.71	15	<PQL	0.0099	116.46	15	<PQL
N019543-010B	SAMP	1	<0.000	N/A	15	<PQL	2.089	3.26	15	PASS

PERCENT RSD SUMMARY: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019543-011B	SAMP	1	<0.000	N/A	15	<PQL	2.077	2.71	15	PASS
N019543-011B-MS	MS	1	78.37	0.35	15	PASS	10.37	0.21	15	PASS
N019543-012B	SAMP	1	<0.000	N/A	15	<PQL	2.18	0.96	15	PASS
N019543-013B	SAMP	1	52.69	0.96	15	PASS	2.053	1.23	15	PASS
N019543-014B	SAMP	1	49.35	1.73	15	PASS	1.91	1.76	15	PASS
N019544-001B	SAMP	1	93.2	1.83	15	PASS	2.95	3.053	15	PASS
N019544-002B	SAMP	1	16.72	0.22	15	PASS	3.4	1.77	15	PASS
CCV5	CCV	1	19.038	2.067	15	PASS	19.72	0.97	15	PASS
CCB5	CCB	1	0.0056	24.65	15	<PQL	0.0026	195.14	15	<PQL
LLCCV2	CCV2	1	0.51	5.1	20	PASS	0.12	6.29	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	16.78	0.4	15	PASS	20.46	1.43	15	PASS

PERCENT RSD SUMMARY: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.08	67.39	15	<PQL	0.1	9.017	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.47	15.81	15	<PQL	0.48	6.52	15	PASS
Std3-5/50 ppb	ICAL	1	4.75	3.82	15	PASS	4.87	1.72	15	PASS
Std4-10/100 ppb	ICAL	1	10.13	4.34	15	PASS	9.71	1.1	15	PASS
Std5-20/200 ppb	ICAL	1	19.85	1.46	15	PASS	19.56	1.45	15	PASS
Std6-40/400 ppb	ICAL	1	40.076	1.71	15	PASS	38.74	1.66	15	PASS
Std7-100/1000 ppb	ICAL	1	102.08	2.0025	15	PASS	100.63	1.21	15	PASS
Std8-200/2000 ppb	ICAL	1	214.15	0.91	15	PASS	210.26	1.29	15	PASS
ICV	ICV	1	9.91	3.39	15	PASS	10.4	0.51	15	PASS
ICB	ICB	1	0.019	68.55	15	<PQL	0.21	10.11	15	PASS
LLICV	CCV1	1	0.44	18.03	20	PASS	0.56	1.52	20	PASS
ICSA1	ICSA	1	0.031	107.39	15	<PQL	0.088	9.85	15	PASS
ICSAB1	ICSAB	1	19.57	2.5	15	PASS	21.96	0.49	15	PASS
CCV1	CCV	1	19.15	1.41	15	PASS	19.2	0.29	15	PASS
CCB1	CCB	1	0.02	91.71	15	<PQL	0.083	17.32	15	<PQL
CCV2	CCV	1	19.61	6.25	15	PASS	19.37	1.31	15	PASS
CCB2	CCB	1	0.02	92.28	15	<PQL	0.083	7.54	15	PASS
MB-57229	MBLK	1	0.0086	86.62	15	<PQL	0.12	7.063	15	PASS
LCS-57229	LCS	1	8.89	4.099	15	PASS	9.47	0.072	15	PASS
N019543-001B	SAMP	1	1.41	8.2	15	PASS	5.031	1.54	15	PASS
N019543-001B	SAMP	5	0.29	27.58	15	<PQL	1.01	3.21	15	PASS
N019543-001B-PS	PS	1	10.0019	2.68	15	PASS	15.43	1.068	15	PASS
CCV3	CCV	1	19.65	3.35	15	PASS	19.59	0.93	15	PASS
CCB3	CCB	1	0.008	173.21	15	<PQL	0.075	8.51	15	PASS
LLCCV1	CCV2	1	0.45	5.17	20	PASS	0.52	7.05	20	PASS
ICSA2	ICSA	1	0.023	91.15	15	<PQL	0.046	24.58	15	<PQL
ICSAB2	ICSAB	1	18.85	3.56	15	PASS	21.91	1.8	15	PASS
N019543-001B-MS	MS	1	10.14	7.52	15	PASS	15.35	2.084	15	PASS
N019543-001B-MSD	MSD	1	10.51	6.069	15	PASS	15.25	1.61	15	PASS
N019543-002B	SAMP	1	1.69	3.36	15	PASS	5.15	0.83	15	PASS
N019543-003B	SAMP	1	1.5	10.24	15	PASS	5.16	1.82	15	PASS
N019543-004B	SAMP	1	1.59	2.2	15	PASS	5.46	1.67	15	PASS
N019543-005B	SAMP	1	1.46	7.5	15	PASS	4.94	1.16	15	PASS
N019543-006B	SAMP	1	1.54	6.18	15	PASS	5.25	1.38	15	PASS
N019543-007B	SAMP	1	1.57	7.49	15	PASS	4.9	2.68	15	PASS
N019543-008B	SAMP	1	1.35	9.87	15	PASS	4.95	4.36	15	PASS
N019543-009B	SAMP	1	1.39	19.0089	15	NR!	4.88	2.52	15	PASS
CCV4	CCV	1	19.36	4.32	15	PASS	19.58	1.19	15	PASS
CCB4	CCB	1	0.012	99.078	15	<PQL	0.077	2.32	15	PASS
N019543-010B	SAMP	1	1.38	1.55	15	PASS	4.72	2.55	15	PASS

PERCENT RSD SUMMARY: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019543-011B	SAMP	1	1.58	6.34	15	PASS	4.88	2.19	15	PASS
N019543-011B-MS	MS	1	9.27	1.25	15	PASS	13.67	1.24	15	PASS
N019543-012B	SAMP	1	1.48	5.93	15	PASS	5.086	2.6	15	PASS
N019543-013B	SAMP	1	1.52	7.35	15	PASS	5.36	1.52	15	PASS
N019543-014B	SAMP	1	1.25	30.92	15	NR!	4.98	3.11	15	PASS
N019544-001B	SAMP	1	0.037	42.32	15	<PQL	17.46	1.17	15	PASS
N019544-002B	SAMP	1	3.87	3.55	15	PASS	23.31	2.027	15	PASS
CCV5	CCV	1	19.064	3.0063	15	PASS	19.83	1.45	15	PASS
CCB5	CCB	1	0.021	1.23	15	PASS	0.083	5.37	15	PASS
LLCCV2	CCV2	1	0.52	11.86	20	PASS	0.5	1.23	20	PASS
ICSA3	ICSA	1	0.016	86.61	15	<PQL	0.05	9.85	15	PASS
ICSAB3	ICSAB	1	19.26	6.39	15	PASS	21.75	2.33	15	PASS

PERCENT RSD SUMMARY: 160509A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	2.34	15	PASS	0.12	53.16	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.56	1.64	15	PASS	0.5	14.71	15	PASS
Std3-5/50 ppb	ICAL	1	5.23	1.15	15	PASS	5.16	9.52	15	PASS
Std4-10/100 ppb	ICAL	1	10.35	0.95	15	PASS	9.73	2.9	15	PASS
Std5-20/200 ppb	ICAL	1	20.22	0.73	15	PASS	20.17	2.46	15	PASS
Std6-40/400 ppb	ICAL	1	40.51	0.18	15	PASS	40	2.71	15	PASS
Std7-100/1000 ppb	ICAL	1	101.12	0.28	15	PASS	99.73	1.74	15	PASS
Std8-200/2000 ppb	ICAL	1	199.29	0.32	15	PASS	200.13	1.6	15	PASS
ICV	ICV	1	104.9	0.55	15	PASS	10.5	1.38	15	PASS
ICB	ICB	1	0.028	12.35	15	PASS	0.039	63.93	15	<PQL
LLICV	CCV1	1	1.18	1.85	20	PASS	0.58	4.37	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.0066	100.59	15	<PQL
ICSAB1	ICSAB	1	17.28	1.075	15	PASS	18.53	1.98	15	PASS
N019543-001B	SAMP	5	26.93	1.78	15	PASS	0.33	12.92	15	PASS
N019543-001B	SAMP	25	5.47	1.59	15	PASS	0.045	53.39	15	<PQL
N019543-001B-PS	PS	5	48.34	1.11	15	PASS	2.41	4.85	15	PASS
N019543-001B-MS	MS	5	46.3	0.26	15	PASS	2.12	7.49	15	PASS
N019543-001B-MSD	MSD	5	46.2	0.63	15	PASS	2.36	2.53	15	PASS
N019543-011B	SAMP	5	26.3	0.62	15	PASS	0.36	19.45	15	<PQL
N019543-011B-MS	MS	5	46.035	0.31	15	PASS	2.16	13.51	15	PASS
N019543-009B	SAMP	1	122.95	0.9	15	PASS	1.4	5.34	15	PASS
N019543-014B	SAMP	1	124.54	0.52	15	PASS	1.28	5.21	15	PASS
CCV1	CCV	1	21.02	0.15	15	PASS	19.72	1.86	15	PASS
CCB1	CCB	1	0.0048	28.67	15	<PQL	0.018	191.21	15	<PQL
CCV2	CCV	1	20.6	0.76	15	PASS	20.14	1.84	15	PASS
CCB2	CCB	1	0.0043	41.53	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.87	0.81	15	PASS	20.0021	0.77	15	PASS
CCB3	CCB	1	0.0039	44.4	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	21.43	0.63	15	PASS	19.41	2.66	15	PASS
CCB4	CCB	1	0.0022	89.87	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.19	1.44	20	PASS	0.48	19.64	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.021	107.86	15	<PQL
ICSAB2	ICSAB	1	17.79	1.017	15	PASS	19.18	4.1	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160504B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0504001.D	RINSE	RINSE	1	05/04/16 5:10 PM
B0504002.D	Cal Blank	IBLK	1	05/04/16 5:16 PM
B0504003.D	Std1-0.1/1 ppb	ICAL	1	05/04/16 5:22 PM
B0504004.D	Std2-0.5/5 ppb	ICAL	1	05/04/16 5:27 PM
B0504005.D	Std3-5/50 ppb	ICAL	1	05/04/16 5:33 PM
B0504006.D	Std4-10/100 ppb	ICAL	1	05/04/16 5:38 PM
B0504007.D	Std5-20/200 ppb	ICAL	1	05/04/16 5:44 PM
B0504008.D	Std6-40/400 ppb	ICAL	1	05/04/16 5:49 PM
B0504009.D	Std7-100/1000 ppb	ICAL	1	05/04/16 5:55 PM
B0504010.D	Std8-200/2000 ppb	ICAL	1	05/04/16 6:00 PM
B0504011.D	ICV	ICV	1	05/04/16 6:06 PM
B0504012.D	ICB	ICB	1	05/04/16 6:12 PM
B0504013.D	LLICV	CCV1	1	05/04/16 6:17 PM
B0504014.D	ICSA1	ICSA	1	05/04/16 6:23 PM
B0504015.D	ICSAB1	ICSAB	1	05/04/16 6:28 PM
B0504016.D	MB-57209	MBLK	1	05/04/16 6:34 PM
B0504017.D	LCS-57209	LCS	1	05/04/16 6:39 PM
B0504018.D	N019534-001B	SAMP	1	05/04/16 6:45 PM
B0504019.D	N019534-001B	SAMP	5	05/04/16 6:50 PM
B0504020.D	N019534-001B-PS	PS	1	05/04/16 6:56 PM
B0504021.D	N019534-001B-MS	MS	1	05/04/16 7:01 PM
B0504022.D	N019534-001B-MSD	MSD	1	05/04/16 7:07 PM
B0504023.D	N019534-002B	SAMP	1	05/04/16 7:12 PM
B0504024.D	N019534-003B	SAMP	1	05/04/16 7:18 PM
B0504025.D	N019534-004B	SAMP	1	05/04/16 7:23 PM
B0504026.D	CCV1	CCV	1	05/04/16 7:25 PM
B0504027.D	CCB1	CCB	1	05/04/16 7:34 PM
B0504028.D	N019534-005B	SAMP	1	05/04/16 7:40 PM
B0504029.D	N019534-006B	SAMP	1	05/04/16 7:46 PM
B0504030.D	N019534-007B	SAMP	1	05/04/16 7:51 PM
B0504031.D	N019534-008B	SAMP	1	05/04/16 7:57 PM
B0504032.D	N019534-009B	SAMP	1	05/04/16 8:02 PM
B0504033.D	N019534-010B	SAMP	1	05/04/16 8:08 PM
B0504034.D	N019534-015B	SAMP	1	05/04/16 8:13 PM
B0504035.D	N019534-015B-MS	MS	1	05/04/16 8:19 PM
B0504036.D	N019535-001B	SAMP	1	05/04/16 8:24 PM
B0504037.D	N019535-002B	SAMP	1	05/04/16 8:30 PM
B0504038.D	CCV2	CCV	1	05/04/16 8:33 PM
B0504039.D	CCB2	CCB	1	05/04/16 8:41 PM
B0504040.D	N019535-003B	SAMP	1	05/04/16 8:47 PM
B0504041.D	N019535-004B	SAMP	1	05/04/16 8:52 PM
B0504042.D	N019535-005B	SAMP	1	05/04/16 8:58 PM

INJECTION LOG: 160504B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0504043.D	N019535-006B	SAMP	1	05/04/16 9:03 PM
B0504044.D	N019535-007B	SAMP	1	05/04/16 9:09 PM
B0504045.D	MB-57229	MBLK	1	05/04/16 9:14 PM
B0504046.D	LCS-57229	LCS	1	05/04/16 9:19 PM
B0504047.D	N019543-001B	SAMP	1	05/04/16 9:25 PM
B0504048.D	N019543-001B	SAMP	5	05/04/16 9:31 PM
B0504049.D	N019543-001B-PS	PS	1	05/04/16 9:37 PM
B0504050.D	CCV3	CCV	1	05/04/16 9:42 PM
B0504051.D	CCB3	CCB	1	05/04/16 9:48 PM
B0504052.D	LLCCV1	CCV2	1	05/04/16 9:53 PM
B0504053.D	ICSA2	ICSA	1	05/04/16 9:59 PM
B0504054.D	ICSAB2	ICSAB	1	05/04/16 10:03 PM
B0504055.D	N019543-001B-MS	MS	1	05/04/16 10:10 PM
B0504056.D	N019543-001B-MSD	MSD	1	05/04/16 10:15 PM
B0504057.D	N019543-002B	SAMP	1	05/04/16 10:21 PM
B0504058.D	N019543-003B	SAMP	1	05/04/16 10:26 PM
B0504059.D	N019543-004B	SAMP	1	05/04/16 10:32 PM
B0504060.D	N019543-005B	SAMP	1	05/04/16 10:38 PM
B0504061.D	N019543-006B	SAMP	1	05/04/16 10:43 PM
B0504062.D	N019543-007B	SAMP	1	05/04/16 10:49 PM
B0504063.D	N019543-008B	SAMP	1	05/04/16 10:54 PM
B0504064.D	N019543-009B	SAMP	1	05/04/16 11:00 PM
B0504065.D	CCV4	CCV	1	05/04/16 11:05 PM
B0504066.D	CCB4	CCB	1	05/04/16 11:11 PM
B0504067.D	N019543-010B	SAMP	1	05/04/16 11:16 PM
B0504068.D	N019543-011B	SAMP	1	05/04/16 11:22 PM
B0504069.D	N019543-011B-MS	MS	1	05/04/16 11:27 PM
B0504070.D	N019543-012B	SAMP	1	05/04/16 11:33 PM
B0504071.D	N019543-013B	SAMP	1	05/04/16 11:39 PM
B0504072.D	N019543-014B	SAMP	1	05/04/16 11:44 PM
B0504073.D	N019544-001B	SAMP	1	05/04/16 11:50 PM
B0504074.D	N019544-002B	SAMP	1	05/04/16 11:55 PM
B0504075.D	CCV5	CCV	1	05/05/16 12:01 AM
B0504076.D	CCB5	CCB	1	05/05/16 12:06 AM
B0504077.D	LLCCV2	CCV2	1	05/05/16 12:12 AM
B0504078.D	ICSA3	ICSA	1	05/05/16 12:17 AM
B0504079.D	ICSAB3	ICSAB	1	05/05/16 12:22 AM

INJECTION LOG: 160509A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0509001.D	RINSE	RINSE	1	05/09/16 10:46 AM
A0509002.D	Cal Blank	IBLK	1	05/09/16 10:52 AM
A0509003.D	Std1-0.1/1 ppb	ICAL	1	05/09/16 10:57 AM
A0509004.D	Std2-0.5/5 ppb	ICAL	1	05/09/16 11:03 AM
A0509005.D	Std3-5/50 ppb	ICAL	1	05/09/16 11:08 AM
A0509006.D	Std4-10/100 ppb	ICAL	1	05/09/16 11:14 AM
A0509007.D	Std5-20/200 ppb	ICAL	1	05/09/16 11:19 AM
A0509008.D	Std6-40/400 ppb	ICAL	1	05/09/16 11:25 AM
A0509009.D	Std7-100/1000 ppb	ICAL	1	05/09/16 11:30 AM
A0509010.D	Std8-200/2000 ppb	ICAL	1	05/09/16 11:36 AM
A0509011.D	ICV	ICV	1	05/09/16 11:42 AM
A0509012.D	ICB	ICB	1	05/09/16 11:47 AM
A0509013.D	LLICV	CCV1	1	05/09/16 11:51 AM
A0509014.D	ICSA1	ICSA	1	05/09/16 11:58 AM
A0509015.D	ICSAB1	ICSAB	1	05/09/16 12:03 PM
A0509016.D	N019543-001B	SAMP	5	05/09/16 12:09 PM
A0509017.D	N019543-001B	SAMP	25	05/09/16 12:15 PM
A0509018.D	N019543-001B-PS	PS	5	05/09/16 12:20 PM
A0509019.D	N019543-001B-MS	MS	5	05/09/16 12:26 PM
A0509020.D	N019543-001B-MSD	MSD	5	05/09/16 12:31 PM
A0509021.D	N019543-011B	SAMP	5	05/09/16 12:37 PM
A0509022.D	N019543-011B-MS	MS	5	05/09/16 12:43 PM
A0509023.D	N019543-009B	SAMP	1	05/09/16 12:47 PM
A0509024.D	N019543-014B	SAMP	1	05/09/16 12:53 PM
A0509025.D	N019542-001B	SAMP	25	05/09/16 12:59 PM
A0509026.D	CCV1	CCV	1	05/09/16 1:04 PM
A0509027.D	CCB1	CCB	1	05/09/16 1:10 PM
A0509028.D	N019542-001B	SAMP	125	05/09/16 1:15 PM
A0509029.D	MB-57247	MBLK	1	05/09/16 1:21 PM
A0509030.D	LCS-57247	LCS	1	05/09/16 1:26 PM
A0509031.D	N019559-001B	SAMP	5	05/09/16 1:32 PM
A0509032.D	N019559-001B	SAMP	25	05/09/16 1:38 PM
A0509033.D	N019559-001B-PS	PS	5	05/09/16 1:43 PM
A0509034.D	N019559-001B-MS	MS	5	05/09/16 1:49 PM
A0509035.D	N019559-001B-MSD	MSD	5	05/09/16 1:54 PM
A0509036.D	N019559-002B	SAMP	1	05/09/16 2:00 PM
A0509037.D	N019559-003B	SAMP	1	05/09/16 2:05 PM
A0509038.D	CCV2	CCV	1	05/09/16 2:11 PM
A0509039.D	CCB2	CCB	1	05/09/16 2:17 PM
A0509040.D	N019559-004B	SAMP	1	05/09/16 2:22 PM
A0509041.D	N019559-005B	SAMP	1	05/09/16 2:28 PM
A0509042.D	N019559-006B	SAMP	1	05/09/16 2:33 PM

INJECTION LOG: 160509A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0509043.D	N019559-007B	SAMP	1	05/09/16 2:39 PM
A0509044.D	N019559-008B	SAMP	1	05/09/16 2:44 PM
A0509045.D	N019559-009B	SAMP	1	05/09/16 2:50 PM
A0509046.D	N019559-010B	SAMP	1	05/09/16 2:55 PM
A0509047.D	N019559-011B	SAMP	5	05/09/16 3:01 PM
A0509048.D	N019559-011B-MS	MS	5	05/09/16 3:06 PM
A0509049.D	N019559-012B	SAMP	1	05/09/16 3:12 PM
A0509050.D	CCV3	CCV	1	05/09/16 3:17 PM
A0509051.D	CCB3	CCB	1	05/09/16 3:23 PM
A0509052.D	N019559-013B	SAMP	1	05/09/16 3:28 PM
A0509053.D	N019559-014B	SAMP	1	05/09/16 3:34 PM
A0509054.D	N019570-001B	SAMP	5	05/09/16 3:40 PM
A0509055.D	N019570-002B	SAMP	5	05/09/16 3:45 PM
A0509056.D	N019570-003B	SAMP	5	05/09/16 3:51 PM
A0509057.D	N019570-004B	SAMP	5	05/09/16 3:56 PM
A0509058.D	N019570-005B	SAMP	5	05/09/16 4:02 PM
A0509059.D	N019570-005B	SAMP	25	05/09/16 4:07 PM
A0509060.D	N019570-002B	SAMP	5	05/09/16 4:13 PM
A0509061.D	N019534-004B	SAMP	1	05/09/16 4:23 PM
A0509062.D	CCV4	CCV	1	05/09/16 4:28 PM
A0509063.D	CCB4	CCB	1	05/09/16 4:34 PM
A0509064.D	LLCCV1	CCV2	1	05/09/16 4:40 PM
A0509065.D	ICSA2	ICSA	1	05/09/16 4:45 PM
A0509066.D	ICSAB2	ICSAB	1	05/09/16 4:51 PM
A0509067.D	N019534-004A	SAMP	1	05/09/16 4:56 PM
A0509068.D	N019534-006B	SAMP	1	05/09/16 5:02 PM
A0509069.D	N019534-006A	SAMP	1	05/09/16 5:07 PM
A0509070.D	N019534-008B	SAMP	1	05/09/16 5:13 PM
A0509071.D	N019534-008A	SAMP	1	05/09/16 5:18 PM
A0509072.D	N019535-007B	SAMP	1	05/09/16 5:24 PM
A0509073.D	N019535-007A	SAMP	1	05/09/16 5:30 PM
A0509074.D	N019527-002B	SAMP	1	05/09/16 5:35 PM
A0509075.D	N019527-002A	SAMP	1	05/09/16 5:41 PM
A0509076.D	N019527-004B	SAMP	1	05/09/16 5:47 PM
A0509077.D	CCV5	CCV	1	05/09/16 5:52 PM
A0509078.D	CCB5	CCB	1	05/09/16 5:58 PM
A0509079.D	N019527-004A	SAMP	1	05/09/16 6:03 PM
A0509080.D	N019527-005B	SAMP	1	05/09/16 6:09 PM
A0509081.D	N019527-005A	SAMP	1	05/09/16 6:14 PM
A0509082.D	N019527-006B	SAMP	1	05/09/16 6:20 PM
A0509083.D	N019527-006A	SAMP	1	05/09/16 6:25 PM
A0509084.D	N019527-007B	SAMP	1	05/09/16 6:31 PM

INJECTION LOG: 160509A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0509085.D	N019527-007A	SAMP	1	05/09/16 6:36 PM
A0509086.D	N019527-008B	SAMP	1	05/09/16 6:42 PM
A0509087.D	N019527-008A	SAMP	1	05/09/16 6:48 PM
A0509088.D	N019527-009B	SAMP	1	05/09/16 6:53 PM
A0509089.D	CCV6	CCV	1	05/09/16 6:59 PM
A0509090.D	CCB6	CCB	1	05/09/16 7:04 PM
A0509091.D	N019527-009A	SAMP	1	05/09/16 7:10 PM
A0509092.D	N019593-002B	SAMP	1	05/09/16 7:14 PM
A0509093.D	N019593-002A	SAMP	1	05/09/16 7:20 PM
A0509094.D	N019593-003B	SAMP	1	05/09/16 7:25 PM
A0509095.D	N019593-003A	SAMP	1	05/09/16 7:31 PM
A0509096.D	CCV7	CCV	1	05/09/16 7:37 PM
A0509097.D	CCB7	CCB	1	05/09/16 7:43 PM
A0509098.D	LLCCV2	CCV2	1	05/09/16 7:48 PM
A0509099.D	ICSA3	ICSA	1	05/09/16 7:54 PM
A0509100.D	ICSAB3	ICSAB	1	05/09/16 7:59 PM
A0509101.D	MB-57284	MBLK	1	05/09/16 8:10 PM
A0509102.D	LCS-57284	LCS	1	05/09/16 8:16 PM
A0509103.D	N019560-002B	SAMP	1	05/09/16 8:21 PM
A0509104.D	N019560-002B	SAMP	5	05/09/16 8:27 PM
A0509105.D	N019560-002B-PS	PS	1	05/09/16 8:32 PM
A0509106.D	N019560-002B-MS	MS	1	05/09/16 8:38 PM
A0509107.D	N019560-002B-MSD	MSD	1	05/09/16 8:44 PM
A0509108.D	N019560-003B	SAMP	1	05/09/16 8:49 PM
A0509109.D	N019560-004B	SAMP	1	05/09/16 8:55 PM
A0509110.D	N019560-005B	SAMP	1	05/09/16 9:00 PM
A0509111.D	CCV8	CCV	1	05/09/16 9:06 PM
A0509112.D	CCB8	CCB	1	05/09/16 9:11 PM
A0509113.D	N019560-006B	SAMP	1	05/09/16 9:17 PM
A0509114.D	N019560-007B	SAMP	1	05/09/16 9:22 PM
A0509115.D	N019560-008B	SAMP	1	05/09/16 9:28 PM
A0509116.D	N019560-009B	SAMP	1	05/09/16 9:33 PM
A0509117.D	N019560-010B	SAMP	1	05/09/16 9:39 PM
A0509118.D	N019560-011B	SAMP	1	05/09/16 9:45 PM
A0509119.D	N019560-012B	SAMP	1	05/09/16 9:50 PM
A0509120.D	N019560-012B-MS	MS	1	05/09/16 9:56 PM
A0509121.D	N019590-001B	SAMP	1	05/09/16 10:01 PM
A0509122.D	N019590-002B	SAMP	1	05/09/16 10:07 PM
A0509123.D	CCV9	CCV	1	05/09/16 10:12 PM
A0509124.D	CCB9	CCB	1	05/09/16 10:18 PM
A0509125.D	N019590-003B	SAMP	1	05/09/16 10:23 PM
A0509126.D	N019590-004B	SAMP	1	05/09/16 10:29 PM

INJECTION LOG: 160509A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0509127.D	N019590-005B	SAMP	1	05/09/16 10:34 PM
A0509128.D	N019590-007B	SAMP	1	05/09/16 10:40 PM
A0509129.D	MB-58304	MBLK	1	05/09/16 10:45 PM
A0509130.D	LCS-58304	LCS	1	05/09/16 10:51 PM
A0509131.D	N019591-001B	SAMP	1	05/09/16 10:57 PM
A0509132.D	N019591-001B	SAMP	5	05/09/16 11:02 PM
A0509133.D	N019591-001B-PS	PS	1	05/09/16 11:08 PM
A0509134.D	N019591-001B-MS	MS	1	05/09/16 11:13 PM
A0509135.D	CCV10	CCV	1	05/09/16 11:19 PM
A0509136.D	CCB10	CCB	1	05/09/16 11:24 PM
A0509137.D	LLCCV3	CCV2	1	05/09/16 11:30 PM
A0509138.D	ICSA4	ICSA	1	05/09/16 11:35 PM
A0509139.D	ICSAB4	ICSAB	1	05/09/16 11:41 PM
A0509140.D	N019591-001B-MSD	MSD	1	05/09/16 11:46 PM
A0509141.D	N019591-002B	SAMP	1	05/09/16 11:52 PM
A0509142.D	N019591-003B	SAMP	1	05/09/16 11:57 PM
A0509143.D	N019591-004B	SAMP	1	05/10/16 12:03 AM
A0509144.D	N019591-005B	SAMP	1	05/10/16 12:08 AM
A0509145.D	N019591-006B	SAMP	1	05/10/16 12:14 AM
A0509146.D	N019591-007B	SAMP	1	05/10/16 12:19 AM
A0509147.D	N019591-009B	SAMP	1	05/10/16 12:25 AM
A0509148.D	N019591-010B	SAMP	1	05/10/16 12:30 AM
A0509149.D	N019591-011B	SAMP	1	05/10/16 12:36 AM
A0509150.D	CCV11	CCV	1	05/10/16 12:41 AM
A0509151.D	CCB11	CCB	1	05/10/16 12:47 AM
A0509152.D	N019591-012B	SAMP	1	05/10/16 12:52 AM
A0509153.D	N019591-012B-MS	MS	1	05/10/16 12:58 AM
A0509154.D	N019591-013B	SAMP	1	05/10/16 1:03 AM
A0509155.D	N019591-014B	SAMP	1	05/10/16 1:09 AM
A0509156.D	N019591-015B	SAMP	1	05/10/16 1:14 AM
A0509157.D	N019592-001B	SAMP	1	05/10/16 1:20 AM
A0509158.D	N019592-004B	SAMP	1	05/10/16 1:26 AM
A0509159.D	N019592-005B	SAMP	1	05/10/16 1:31 AM
A0509160.D	N019592-006B	SAMP	1	05/10/16 1:37 AM
A0509161.D	N019592-007B	SAMP	1	05/10/16 1:42 AM
A0509162.D	CCV12	CCV	1	05/10/16 1:48 AM
A0509163.D	CCB12	CCB	1	05/10/16 1:53 AM
A0509164.D	LLCCV4	CCV2	1	05/10/16 1:59 AM
A0509165.D	ICSA5	ICSA	1	05/10/16 2:04 AM
A0509166.D	ICSAB5	ICSAB	1	05/10/16 2:10 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/29/2016 7:58:20 A**
Prep End Date: **4/29/2016 12:30:00**
Initials/ Date: 5/12/2016

Prep Batch **57229** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.7**	**01-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57229	Aqueous		25	☐	0	0	25	1.000		
MB-57229	Aqueous		25	☐	0	0	25	1.000		
N019543-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-010B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
7858	NITRIC ACID
8441	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/29/2016 7:58:20 A**
Prep End Date: **4/29/2016 12:30:00**
Initials/ Date: 5/12/2016

Prep Batch **57229** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.7**	**01-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019543-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-011B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N019544-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019544-002B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
7858	NITRIC ACID
8441	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 4 May 2016 08:47:50 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	109530.00	0.00	
24 Mg	636264.00	0.00	
25 Mg	83785.70	0.00	
26 Mg	97847.90	0.00	
59 Co	741968.00	0.00	
115 In	1421620.00	0.00	
206 Pb	350040.00	0.00	
207 Pb	304500.00	0.00	
208 Pb	756511.00	0.00	

RSD (%)

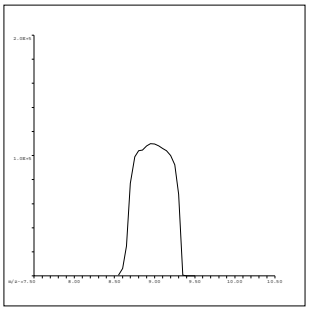
Element	Actual	Required	Flag
9 Be	1.18	5.00	
24 Mg	0.31	5.00	
25 Mg	0.87	5.00	
26 Mg	0.75	5.00	
59 Co	0.34	5.00	
115 In	0.90	5.00	
206 Pb	1.01	5.00	
207 Pb	1.26	5.00	
208 Pb	0.92	5.00	

Ion Ratio

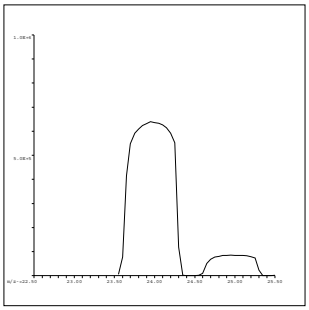
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

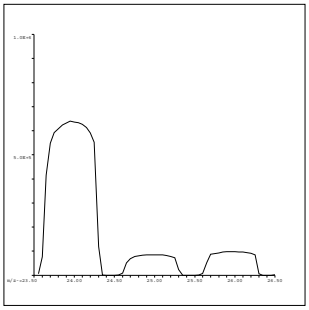
Element	Actual	Required	Flag



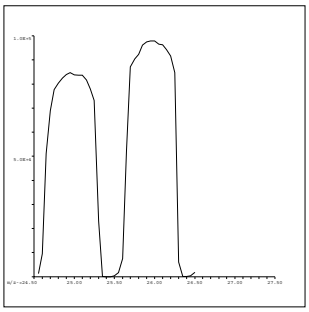
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



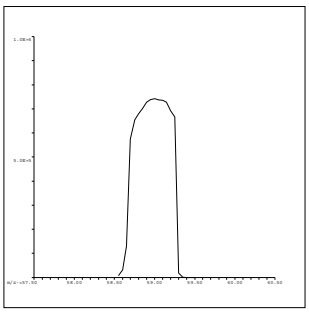
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



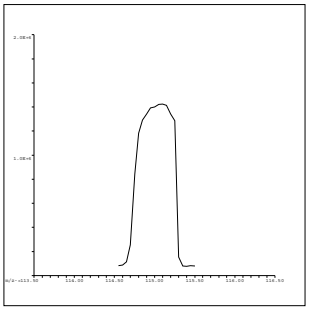
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



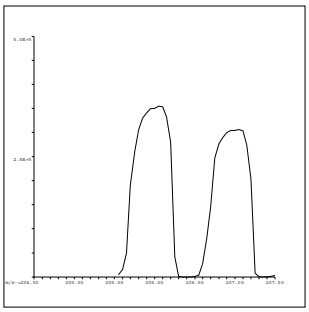
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



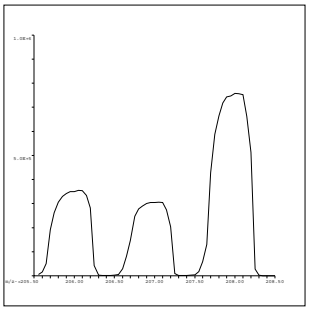
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



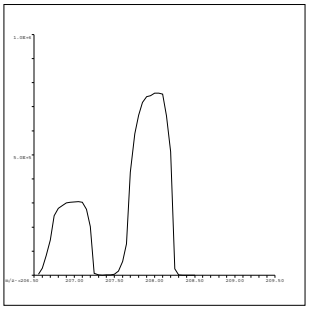
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 9 May 2016 10:08:49 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	162431.00	0.00	
24 Mg	624680.00	0.00	
25 Mg	82736.40	0.00	
26 Mg	95432.10	0.00	
59 Co	633066.00	0.00	
115 In	981811.00	0.00	
206 Pb	252653.00	0.00	
207 Pb	220362.00	0.00	
208 Pb	541496.00	0.00	

RSD (%)

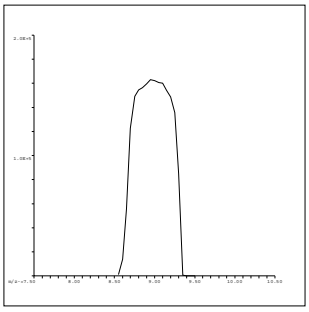
Element	Actual	Required	Flag
9 Be	0.98	5.00	
24 Mg	0.56	5.00	
25 Mg	1.05	5.00	
26 Mg	0.92	5.00	
59 Co	0.59	5.00	
115 In	1.11	5.00	
206 Pb	1.25	5.00	
207 Pb	1.07	5.00	
208 Pb	1.46	5.00	

Ion Ratio

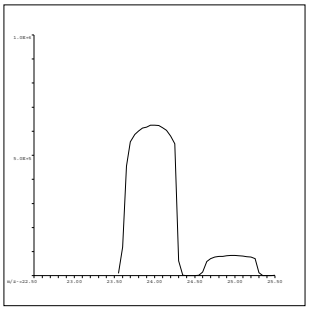
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

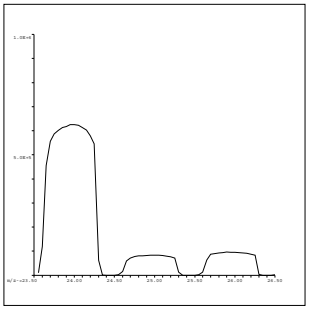
Element	Actual	Required	Flag



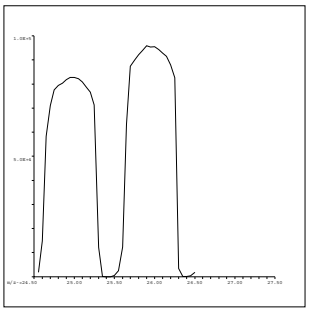
9 Be
Mass Calib.
   Actual: 9.00
   Required: 8.90-9.10
   Flag:
Peak Width
   Actual: 0.70
   Required: 0.75
   Flag:



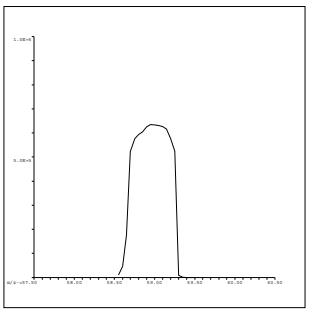
24 Mg
Mass Calib.
   Actual: 24.00
   Required: 23.90-24.10
   Flag:
Peak Width
   Actual: 0.70
   Required: 0.75
   Flag:



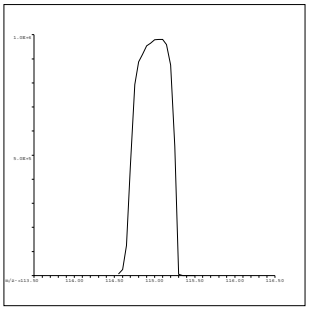
25 Mg
Mass Calib.
   Actual: 25.00
   Required: 24.90-25.10
   Flag:
Peak Width
   Actual: 0.70
   Required: 0.75
   Flag:



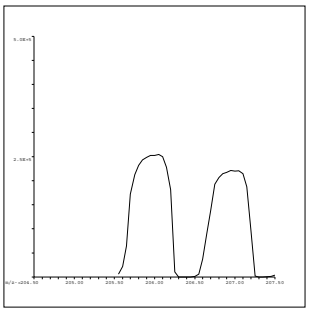
26 Mg
Mass Calib.
   Actual: 25.95
   Required: 25.90-26.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



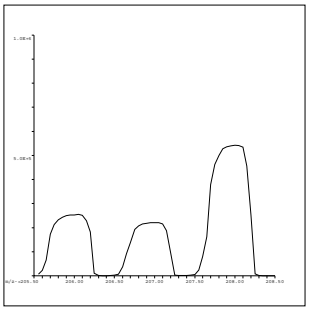
59 Co
Mass Calib.
   Actual: 59.00
   Required: 58.90-59.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



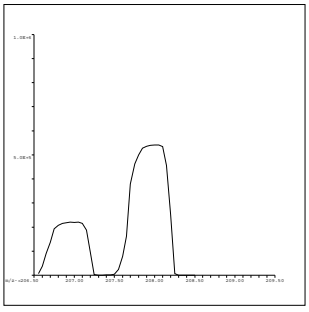
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160504B

Instrument ID: ICPMS-02

Analyte	Data File	B0504002.D	B0504003.D	B0504004.D	B0504005.D	B0504006.D	B0504007.D	B0504008.D	B0504009.D	B0504010.D	
	Acq. Date-Time	05/04/2016 05:16 PM	05/04/2016 05:22 PM	05/04/2016 05:27 PM	05/04/2016 05:33 PM	05/04/2016 05:38 PM	05/04/2016 05:44 PM	05/04/2016 05:49 PM	05/04/2016 05:55 PM	05/04/2016 06:00 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	100123.8		99919.6	100179.5	99392.3	97947	97674.7	93661.8	90653.4	
55 Mn [2]	CPS	73.5		2425.5	20565.8	41228.3	79904.7	157900	392103.7	778150.3	1.0000
52 Cr [2]	CPS	859.9		4487.3	38526.2	76874.5	147823	293955.9	731153.3	1463378.1	1.0000
72 Ge (ISTD) [1]	CPS	70555.3		71269.3	70940.3	69217.3	68014.6	67776.9	64917.6	61989.7	
78 Se [1]	CPS	0		141.1	1414.6	2944.8	5672.4	11414.4	27847.1	55782.2	1.0000
72 Ge (ISTD) [2]	CPS	73731.8	77178.1	74844.2	74573	75118.7	72924.5	72364.3	70503.7	66555.2	
75 As [2]	CPS	11.6	112.4	473.4	4623.8	9359.2	18117.3	35845.5	89567.5	178012.5	1.0000
103 Rh (ISTD) [2]	CPS	2038360.5		2095510.8	2081598.2	2096423.1	2042571.4	2027028.1	1957672	1875297.8	
95 Mo [2]	CPS	24.4		2499.2	24989.2	50117	98333.7	193255	484818.9	970340	1.0000
159 Tb (ISTD) [3]	CPS	7702759		7932645.4	7814747.4	7827782	7652641.7	7746839	7410555	7104405.2	
137 Ba [3]	CPS	52.7		7830.8	67713.1	136971.8	262200.9	523660.6	1314489.9	2576395.9	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 160509A

Instrument ID: ICPMS-02

Analyte	Data File	A0509002.D	A0509004.D	A0509005.D	A0509006.D	A0509007.D	A0509008.D	A0509009.D	A0509010.D	
	Acq. Date-Time	05/09/2016 10:52 AM	05/09/2016 11:03 AM	05/09/2016 11:08 AM	05/09/2016 11:14 AM	05/09/2016 11:19 AM	05/09/2016 11:25 AM	05/09/2016 11:30 AM	05/09/2016 11:36 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	71195.3	73030.7	70640.1	69537.6	69613.3	68611.4	67588.3	66699	
78 Se [1]	CPS	3.3	144.5	1417.9	2627	5444.5	10638.3	26132.9	51747.8	1.0000
159 Tb (ISTD) [3]	CPS	5923501.6	5864665.7	5794946.4	5787181.9	5775005.8	5727820.3	5740790.6	5712823.8	
137 Ba [3]	CPS	0.7	5177.1	47477.7	93813.1	182940.7	363628.3	909620.8	1784078.8	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.134	0.10	10.00	0	101	90	110				
Barium	96.281	1.0	100.0	0	96.3	90	110				
Manganese	93.539	0.50	100.0	0	93.5	90	110				
Molybdenum	10.398	0.50	10.00	0	104	90	110				
Selenium	9.907	0.50	10.00	0	99.1	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ZZZZZZ**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	80	120				
Barium	1.016	1.0	1.000	0	102	80	120				
Manganese	0.513	0.50	0.5000	0	103	80	120				
Molybdenum	0.559	0.50	0.5000	0	112	80	120				
Selenium	0.443	0.50	0.5000	0	88.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.559	0.10	20.00	0	97.8	90	110				
Barium	19.533	1.0	20.00	0	97.7	90	110				
Manganese	19.221	0.50	20.00	0	96.1	90	110				
Molybdenum	19.204	0.50	20.00	0	96.0	90	110				
Selenium	19.155	0.50	20.00	0	95.8	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.111	0.10	20.00	0	101	90	110				
Barium	19.626	1.0	20.00	0	98.1	90	110				
Manganese	18.961	0.50	20.00	0	94.8	90	110				
Molybdenum	19.371	0.50	20.00	0	96.9	90	110				
Selenium	19.608	0.50	20.00	0	98.0	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.712	0.10	20.00	0	98.6	90	110				
Barium	19.832	1.0	20.00	0	99.2	90	110				
Manganese	19.143	0.50	20.00	0	95.7	90	110				
Molybdenum	19.592	0.50	20.00	0	98.0	90	110				
Selenium	19.655	0.50	20.00	0	98.3	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ZZZZZZ**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.097	0.10	0.1000	0	96.9	70	130				
Barium	1.059	1.0	1.000	0	106	70	130				
Manganese	0.489	0.50	0.5000	0	97.8	70	130				
Molybdenum	0.518	0.50	0.5000	0	104	70	130				
Selenium	0.455	0.50	0.5000	0	91.0	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.597	0.10	20.00	0	98.0	90	110				
Barium	19.749	1.0	20.00	0	98.7	90	110				
Manganese	19.334	0.50	20.00	0	96.7	90	110				
Molybdenum	19.583	0.50	20.00	0	97.9	90	110				
Selenium	19.365	0.50	20.00	0	96.8	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.718	0.10	20.00	0	98.6	90	110				
Barium	19.883	1.0	20.00	0	99.4	90	110				
Manganese	19.038	0.50	20.00	0	95.2	90	110				
Molybdenum	19.829	0.50	20.00	0	99.1	90	110				
Selenium	19.064	0.50	20.00	0	95.3	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ZZZZZZ**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.121	0.10	0.1000	0	121	70	130				
Barium	1.027	1.0	1.000	0	103	70	130				
Manganese	0.512	0.50	0.5000	0	102	70	130				
Molybdenum	0.504	0.50	0.5000	0	101	70	130				
Selenium	0.524	0.50	0.5000	0	105	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ICV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	104.904	1.0	100.0	0	105	90	110				
Selenium	10.499	0.50	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.182	1.0	1.000	0	118	80	120				
Selenium	0.584	0.50	0.5000	0	117	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	21.020	1.0	20.00	0	105	90	110				
Selenium	19.717	0.50	20.00	0	98.6	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	20.604	1.0	20.00	0	103	90	110				
Selenium	20.139	0.50	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	20.867	1.0	20.00	0	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.002	0.50	20.00	0	100	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	21.433	1.0	20.00	0	107	90	110				
Selenium	19.409	0.50	20.00	0	97.0	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.195	1.0	1.000	0	119	70	130				
Selenium	0.479	0.50	0.5000	0	95.7	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ICV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.725	1.0	10.00	0	97.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.966	1.0	1.000	0	96.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.955	1.0	20.00	0	99.8	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.821	1.0	20.00	0	99.1	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.230	1.0	20.00	0	96.1	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.984	1.0	1.000	0	98.4	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.499	1.0	20.00	0	97.5	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.182	1.0	20.00	0	95.9	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.980	1.0	1.000	0	98.0	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.207	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Selenium	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.075	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.077	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Selenium	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ICB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	0.039	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321135**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ICB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.023	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSA**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.088	0.50									
Selenium	0.031	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSAB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.380	0.10	20.00	0	102	80	120				
Barium	17.160	1.0	20.00	0	85.8	80	120				
Manganese	16.719	0.50	20.00	0	83.6	80	120				
Molybdenum	21.960	0.50	20.00	0	110	80	120				
Selenium	19.566	0.50	20.00	0	97.8	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSA**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.046	0.50									
Selenium	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSAB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.566	0.10	20.00	0	103	80	120				
Barium	17.340	1.0	20.00	0	86.7	80	120				
Manganese	16.809	0.50	20.00	0	84.0	80	120				
Molybdenum	21.912	0.50	20.00	0	110	80	120				
Selenium	18.847	0.50	20.00	0	94.2	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSA**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.050	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSAB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.463	0.10	20.00	0	102	80	120				
Barium	17.245	1.0	20.00	0	86.2	80	120				
Manganese	16.777	0.50	20.00	0	83.9	80	120				
Molybdenum	21.750	0.50	20.00	0	109	80	120				
Selenium	19.259	0.50	20.00	0	96.3	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ICSA**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ICSAB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	17.278	1.0	20.00	0	86.4	80	120				
Selenium	18.534	0.50	20.00	0	92.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ICSA**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ICSAB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	17.785	1.0	20.00	0	88.9	80	120				
Selenium	19.184	0.50	20.00	0	95.9	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSA	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/4/2016	SeqNo:	2316493

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.161	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSAB	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/4/2016	SeqNo:	2316494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.626	1.0	20.00	0	98.1	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSA	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/4/2016	SeqNo:	2316532

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.193	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSAB	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/4/2016	SeqNo:	2316533

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.405	1.0	20.00	0	102	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSA	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/5/2016	SeqNo:	2316557

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.165	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ICSAB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.338	1.0	20.00	0	102	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	7702759	7702759	100	PASS	70-130	100123.8	100123.8	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	8044502.2	7702759	104.44	PASS	70-130	102512.2	100123.8	102.39	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	7932645.4	7702759	102.98	PASS	70-130	99919.6	100123.8	99.8	PASS	70-130
Std3-5/50 ppb	ICAL	1	7814747.4	7702759	101.45	PASS	70-130	100179.5	100123.8	100.06	PASS	70-130
Std4-10/100 ppb	ICAL	1	7827782	7702759	101.62	PASS	70-130	99392.3	100123.8	99.27	PASS	70-130
Std5-20/200 ppb	ICAL	1	7652641.7	7702759	99.35	PASS	70-130	97947	100123.8	97.83	PASS	70-130
Std6-40/400 ppb	ICAL	1	7746839	7702759	100.57	PASS	70-130	97674.7	100123.8	97.55	PASS	70-130
Std7-100/1000 ppb	ICAL	1	7410555	7702759	96.21	PASS	70-130	93661.8	100123.8	93.55	PASS	70-130
Std8-200/2000 ppb	ICAL	1	7104405.2	7702759	92.23	PASS	70-130	90653.4	100123.8	90.54	PASS	70-130
ICV	ICV	1	9011501.8	7702759	116.99	PASS	70-130	114383.7	100123.8	114.24	PASS	70-130
ICB	ICB	1	7524211.6	7702759	97.68	PASS	70-130	97411.8	100123.8	97.29	PASS	70-130
LLICV	CCV1	1	7860689.7	7702759	102.05	PASS	70-130	101926.6	100123.8	101.8	PASS	70-130
ICSA1	ICSA	1	6674910.7	7702759	86.66	PASS	70-130	91154.3	100123.8	91.042	PASS	70-130
ICSAB1	ICSAB	1	6839445	7702759	88.79	PASS	70-130	97787.4	100123.8	97.67	PASS	70-130
CCV1	CCV	1	7800614.7	7702759	101.27	PASS	70-130	94219.3	100123.8	94.1	PASS	70-130
CCB1	CCB	1	6797874.3	7702759	88.25	PASS	70-130	91303.4	100123.8	91.19	PASS	70-130
CCV2	CCV	1	7911245	7702759	102.71	PASS	70-130	100671.8	100123.8	100.55	PASS	70-130
CCB2	CCB	1	6432043.2	7702759	83.5	PASS	70-130	86166.1	100123.8	86.06	PASS	70-130
MB-57229	MBLK	1	7422775.9	7702759	96.37	PASS	70-130	87392.5	100123.8	87.28	PASS	70-130
LCS-57229	LCS	1	7431420.2	7702759	96.48	PASS	70-130	90275.4	100123.8	90.16	PASS	70-130
N019543-001B	SAMP	1	6550902.5	7702759	85.046	PASS	70-130	88000.9	100123.8	87.89	PASS	70-130
N019543-001B	SAMP	5	6424958.7	7702759	83.41	PASS	70-130	87210.6	100123.8	87.1	PASS	70-130
N019543-001B-PS	PS	1	6853143.6	7702759	88.97	PASS	70-130	90078.4	100123.8	89.97	PASS	70-130
CCV3	CCV	1	6850974.8	7702759	88.94	PASS	70-130	93509.5	100123.8	93.39	PASS	70-130
CCB3	CCB	1	6666529.6	7702759	86.55	PASS	70-130	88631.4	100123.8	88.52	PASS	70-130
LLCCV1	CCV2	1	7058744.7	7702759	91.64	PASS	70-130	93916.8	100123.8	93.8	PASS	70-130
ICSA2	ICSA	1	6205902	7702759	80.57	PASS	70-130	86792.1	100123.8	86.68	PASS	70-130
ICSAB2	ICSAB	1	7091995.7	7702759	92.071	PASS	70-130	95209	100123.8	95.091	PASS	70-130
N019543-001B-MS	MS	1	6680304.6	7702759	86.73	PASS	70-130	88721.1	100123.8	88.61	PASS	70-130
N019543-001B-MSD	MSD	1	6733434	7702759	87.42	PASS	70-130	88150.7	100123.8	88.042	PASS	70-130
N019543-002B	SAMP	1	6662920.2	7702759	86.5	PASS	70-130	87900.8	100123.8	87.79	PASS	70-130
N019543-003B	SAMP	1	6325638.2	7702759	82.12	PASS	70-130	86236.5	100123.8	86.13	PASS	70-130
N019543-004B	SAMP	1	6392655.9	7702759	82.99	PASS	70-130	84393	100123.8	84.29	PASS	70-130
N019543-005B	SAMP	1	6266155.3	7702759	81.35	PASS	70-130	83292.8	100123.8	83.19	PASS	70-130
N019543-006B	SAMP	1	6691306.4	7702759	86.87	PASS	70-130	88267	100123.8	88.16	PASS	70-130
N019543-007B	SAMP	1	6641371	7702759	86.22	PASS	70-130	89474.5	100123.8	89.36	PASS	70-130
N019543-008B	SAMP	1	6727227.8	7702759	87.34	PASS	70-130	88833.4	100123.8	88.72	PASS	70-130
N019543-009B	SAMP	1	6938779.4	7702759	90.082	PASS	70-130	91955.6	100123.8	91.84	PASS	70-130
CCV4	CCV	1	7100221.9	7702759	92.18	PASS	70-130	92984.5	100123.8	92.87	PASS	70-130
CCB4	CCB	1	6881292.1	7702759	89.34	PASS	70-130	89939.2	100123.8	89.83	PASS	70-130
N019543-010B	SAMP	1	6473800.3	7702759	84.045	PASS	70-130	86939.1	100123.8	86.83	PASS	70-130

INTERNAL STANDARD: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019543-011B	SAMP	1	6491330.3	7702759	84.27	PASS	70-130	85424.6	100123.8	85.32	PASS	70-130
N019543-011B-MS	MS	1	7423376.6	7702759	96.37	PASS	70-130	97375.3	100123.8	97.25	PASS	70-130
N019543-012B	SAMP	1	6527861.4	7702759	84.75	PASS	70-130	86755.7	100123.8	86.65	PASS	70-130
N019543-013B	SAMP	1	6652233.2	7702759	86.36	PASS	70-130	88670.1	100123.8	88.56	PASS	70-130
N019543-014B	SAMP	1	6748202.8	7702759	87.61	PASS	70-130	90660.8	100123.8	90.55	PASS	70-130
N019544-001B	SAMP	1	6374437.7	7702759	82.76	PASS	70-130	85601	100123.8	85.5	PASS	70-130
N019544-002B	SAMP	1	5428399.6	7702759	70.47	PASS	70-130	81421.4	100123.8	81.32	PASS	70-130
CCV5	CCV	1	7814805	7702759	101.45	PASS	70-130	105767.4	100123.8	105.64	PASS	70-130
CCB5	CCB	1	7547124.6	7702759	97.98	PASS	70-130	101098.1	100123.8	100.97	PASS	70-130
LLCCV2	CCV2	1	8017887.9	7702759	104.09	PASS	70-130	104715.5	100123.8	104.59	PASS	70-130
ICSA3	ICSA	1	6937326.2	7702759	90.063	PASS	70-130	97223.2	100123.8	97.1	PASS	70-130
ICSAB3	ICSAB	1	7169892	7702759	93.082	PASS	70-130	95835.1	100123.8	95.72	PASS	70-130

INTERNAL STANDARD: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	73731.8	73731.8	100	PASS	70-130	70555.3	70555.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	77178.1	73731.8	104.67	PASS	70-130	72528.6	70555.3	102.8	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	74844.2	73731.8	101.51	PASS	70-130	71269.3	70555.3	101.01	PASS	70-130
Std3-5/50 ppb	ICAL	1	74573	73731.8	101.14	PASS	70-130	70940.3	70555.3	100.55	PASS	70-130
Std4-10/100 ppb	ICAL	1	75118.7	73731.8	101.88	PASS	70-130	69217.3	70555.3	98.1	PASS	70-130
Std5-20/200 ppb	ICAL	1	72924.5	73731.8	98.91	PASS	70-130	68014.6	70555.3	96.4	PASS	70-130
Std6-40/400 ppb	ICAL	1	72364.3	73731.8	98.15	PASS	70-130	67776.9	70555.3	96.062	PASS	70-130
Std7-100/1000 ppb	ICAL	1	70503.7	73731.8	95.62	PASS	70-130	64917.6	70555.3	92.01	PASS	70-130
Std8-200/2000 ppb	ICAL	1	66555.2	73731.8	90.27	PASS	70-130	61989.7	70555.3	87.86	PASS	70-130
ICV	ICV	1	83750.7	73731.8	113.59	PASS	70-130	79342.8	70555.3	112.45	PASS	70-130
ICB	ICB	1	72962.3	73731.8	98.96	PASS	70-130	67729	70555.3	95.99	PASS	70-130
LLICV	CCV1	1	72532.8	73731.8	98.37	PASS	70-130	67054	70555.3	95.038	PASS	70-130
ICSA1	ICSA	1	64150.2	73731.8	87.005	PASS	70-130	59038.8	70555.3	83.68	PASS	70-130
ICSAB1	ICSAB	1	68196.4	73731.8	92.49	PASS	70-130	63994.3	70555.3	90.7	PASS	70-130
CCV1	CCV	1	69696.9	73731.8	94.53	PASS	70-130	68218.6	70555.3	96.69	PASS	70-130
CCB1	CCB	1	68152.9	73731.8	92.43	PASS	70-130	67600.8	70555.3	95.81	PASS	70-130
CCV2	CCV	1	73047.3	73731.8	99.072	PASS	70-130	72111.7	70555.3	102.21	PASS	70-130
CCB2	CCB	1	64577.2	73731.8	87.58	PASS	70-130	66239.8	70555.3	93.88	PASS	70-130
MB-57229	MBLK	1	65164	73731.8	88.38	PASS	70-130	62168	70555.3	88.11	PASS	70-130
LCS-57229	LCS	1	65503.1	73731.8	88.84	PASS	70-130	63807.5	70555.3	90.44	PASS	70-130
N019543-001B	SAMP	1	65479.8	73731.8	88.81	PASS	70-130	65670.7	70555.3	93.077	PASS	70-130
N019543-001B	SAMP	5	64839.4	73731.8	87.94	PASS	70-130	66229.5	70555.3	93.87	PASS	70-130
N019543-001B-PS	PS	1	65915	73731.8	89.4	PASS	70-130	64881.8	70555.3	91.96	PASS	70-130
CCV3	CCV	1	69362.2	73731.8	94.074	PASS	70-130	68825.8	70555.3	97.55	PASS	70-130
CCB3	CCB	1	67378.5	73731.8	91.38	PASS	70-130	66276.4	70555.3	93.94	PASS	70-130
LLCCV1	CCV2	1	67100.6	73731.8	91.006	PASS	70-130	65701.7	70555.3	93.12	PASS	70-130
ICSA2	ICSA	1	62038.8	73731.8	84.14	PASS	70-130	58316.1	70555.3	82.65	PASS	70-130
ICSAB2	ICSAB	1	66326.4	73731.8	89.96	PASS	70-130	62798.4	70555.3	89.006	PASS	70-130
N019543-001B-MS	MS	1	64520.3	73731.8	87.51	PASS	70-130	66701.4	70555.3	94.54	PASS	70-130
N019543-001B-MSD	MSD	1	64188.2	73731.8	87.056	PASS	70-130	61343.6	70555.3	86.94	PASS	70-130
N019543-002B	SAMP	1	63897.1	73731.8	86.66	PASS	70-130	61535.6	70555.3	87.22	PASS	70-130
N019543-003B	SAMP	1	62876.3	73731.8	85.28	PASS	70-130	60665.7	70555.3	85.98	PASS	70-130
N019543-004B	SAMP	1	61957.3	73731.8	84.031	PASS	70-130	59882.7	70555.3	84.87	PASS	70-130
N019543-005B	SAMP	1	60261.8	73731.8	81.73	PASS	70-130	59139.1	70555.3	83.82	PASS	70-130
N019543-006B	SAMP	1	64276	73731.8	87.18	PASS	70-130	63970.7	70555.3	90.67	PASS	70-130
N019543-007B	SAMP	1	65689.2	73731.8	89.092	PASS	70-130	64385.8	70555.3	91.26	PASS	70-130
N019543-008B	SAMP	1	65284.5	73731.8	88.54	PASS	70-130	63071.4	70555.3	89.39	PASS	70-130
N019543-009B	SAMP	1	67255.9	73731.8	91.22	PASS	70-130	66000.8	70555.3	93.54	PASS	70-130
CCV4	CCV	1	69934.7	73731.8	94.85	PASS	70-130	67825.1	70555.3	96.13	PASS	70-130
CCB4	CCB	1	67764.7	73731.8	91.91	PASS	70-130	64945.3	70555.3	92.049	PASS	70-130
N019543-010B	SAMP	1	63664.8	73731.8	86.35	PASS	70-130	61161	70555.3	86.69	PASS	70-130

INTERNAL STANDARD: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019543-011B	SAMP	1	62644.3	73731.8	84.96	PASS	70-130	60071.2	70555.3	85.14	PASS	70-130
N019543-011B-MS	MS	1	71365.4	73731.8	96.79	PASS	70-130	67852.8	70555.3	96.17	PASS	70-130
N019543-012B	SAMP	1	63380.4	73731.8	85.96	PASS	70-130	61530.3	70555.3	87.21	PASS	70-130
N019543-013B	SAMP	1	65043.3	73731.8	88.22	PASS	70-130	62885.3	70555.3	89.13	PASS	70-130
N019543-014B	SAMP	1	66424.6	73731.8	90.089	PASS	70-130	64801.6	70555.3	91.85	PASS	70-130
N019544-001B	SAMP	1	60603.3	73731.8	82.19	PASS	70-130	56469.7	70555.3	80.036	PASS	70-130
N019544-002B	SAMP	1	56062.6	73731.8	76.036	PASS	70-130	51513.7	70555.3	73.012	PASS	70-130
CCV5	CCV	1	77896.1	73731.8	105.65	PASS	70-130	80026.6	70555.3	113.42	PASS	70-130
CCB5	CCB	1	75241.5	73731.8	102.05	PASS	70-130	75873.6	70555.3	107.54	PASS	70-130
LLCCV2	CCV2	1	74279.2	73731.8	100.74	PASS	70-130	74133.6	70555.3	105.07	PASS	70-130
ICSA3	ICSA	1	69719.4	73731.8	94.56	PASS	70-130	67009.3	70555.3	94.97	PASS	70-130
ICSAB3	ICSAB	1	67743.4	73731.8	91.88	PASS	70-130	63194.3	70555.3	89.57	PASS	70-130

INTERNAL STANDARD: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2038360.5	2038360.5	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	2150965.9	2038360.5	105.52	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	2095510.8	2038360.5	102.8	PASS	70-130
Std3-5/50 ppb	ICAL	1	2081598.2	2038360.5	102.12	PASS	70-130
Std4-10/100 ppb	ICAL	1	2096423.1	2038360.5	102.85	PASS	70-130
Std5-20/200 ppb	ICAL	1	2042571.4	2038360.5	100.21	PASS	70-130
Std6-40/400 ppb	ICAL	1	2027028.1	2038360.5	99.44	PASS	70-130
Std7-100/1000 ppb	ICAL	1	1957672	2038360.5	96.042	PASS	70-130
Std8-200/2000 ppb	ICAL	1	1875297.8	2038360.5	92	PASS	70-130
ICV	ICV	1	2375203.8	2038360.5	116.53	PASS	70-130
ICB	ICB	1	2049564.2	2038360.5	100.55	PASS	70-130
LLICV	CCV1	1	2123079.8	2038360.5	104.16	PASS	70-130
ICSA1	ICSA	1	1676240.6	2038360.5	82.23	PASS	70-130
ICSAB1	ICSAB	1	1769915.5	2038360.5	86.83	PASS	70-130
CCV1	CCV	1	1982680	2038360.5	97.27	PASS	70-130
CCB1	CCB	1	1874803.7	2038360.5	91.98	PASS	70-130
CCV2	CCV	1	2056557.1	2038360.5	100.89	PASS	70-130
CCB2	CCB	1	1775414	2038360.5	87.1	PASS	70-130
MB-57229	MBLK	1	1865255.7	2038360.5	91.51	PASS	70-130
LCS-57229	LCS	1	1883033	2038360.5	92.38	PASS	70-130
N019543-001B	SAMP	1	1631964.6	2038360.5	80.063	PASS	70-130
N019543-001B	SAMP	5	1699476	2038360.5	83.37	PASS	70-130
N019543-001B-PS	PS	1	1670631.5	2038360.5	81.96	PASS	70-130
CCV3	CCV	1	1874298.8	2038360.5	91.95	PASS	70-130
CCB3	CCB	1	1832884.1	2038360.5	89.92	PASS	70-130
LLCCV1	CCV2	1	1910798.7	2038360.5	93.74	PASS	70-130
ICSA2	ICSA	1	1596476.1	2038360.5	78.32	PASS	70-130
ICSAB2	ICSAB	1	1743088.2	2038360.5	85.51	PASS	70-130
N019543-001B-MS	MS	1	1650580.9	2038360.5	80.98	PASS	70-130
N019543-001B-MSD	MSD	1	1651263.9	2038360.5	81.009	PASS	70-130
N019543-002B	SAMP	1	1646532.1	2038360.5	80.78	PASS	70-130
N019543-003B	SAMP	1	1618309.8	2038360.5	79.39	PASS	70-130
N019543-004B	SAMP	1	1578735.2	2038360.5	77.45	PASS	70-130
N019543-005B	SAMP	1	1553633.2	2038360.5	76.22	PASS	70-130
N019543-006B	SAMP	1	1646501.6	2038360.5	80.78	PASS	70-130
N019543-007B	SAMP	1	1664123.9	2038360.5	81.64	PASS	70-130
N019543-008B	SAMP	1	1662721.3	2038360.5	81.57	PASS	70-130
N019543-009B	SAMP	1	1702072.5	2038360.5	83.5	PASS	70-130
CCV4	CCV	1	1894270.7	2038360.5	92.93	PASS	70-130
CCB4	CCB	1	1845356.5	2038360.5	90.53	PASS	70-130
N019543-010B	SAMP	1	1651631.2	2038360.5	81.027	PASS	70-130

INTERNAL STANDARD: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N019543-011B	SAMP	1	1623543.2	2038360.5	79.65	PASS	70-130
N019543-011B-MS	MS	1	1825966.5	2038360.5	89.58	PASS	70-130
N019543-012B	SAMP	1	1616243.7	2038360.5	79.29	PASS	70-130
N019543-013B	SAMP	1	1670220.1	2038360.5	81.94	PASS	70-130
N019543-014B	SAMP	1	1717844	2038360.5	84.28	PASS	70-130
N019544-001B	SAMP	1	1533046.7	2038360.5	75.21	PASS	70-130
N019544-002B	SAMP	1	1373067.7	2038360.5	67.36	NR!	70-130
CCV5	CCV	1	2107429.4	2038360.5	103.39	PASS	70-130
CCB5	CCB	1	2062479.3	2038360.5	101.18	PASS	70-130
LLCCV2	CCV2	1	2153061.7	2038360.5	105.63	PASS	70-130
ICSA3	ICSA	1	1758687.5	2038360.5	86.28	PASS	70-130
ICSAB3	ICSAB	1	1769125.1	2038360.5	86.79	PASS	70-130

INTERNAL STANDARD: 160509A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5923501.6	5923501.6	100	PASS	70-130	71195.3	71195.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	5902027.7	5923501.6	99.64	PASS	70-130	72188.9	71195.3	101.4	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	5864665.7	5923501.6	99.007	PASS	70-130	73030.7	71195.3	102.58	PASS	70-130
Std3-5/50 ppb	ICAL	1	5794946.4	5923501.6	97.83	PASS	70-130	70640.1	71195.3	99.22	PASS	70-130
Std4-10/100 ppb	ICAL	1	5787181.9	5923501.6	97.7	PASS	70-130	69537.6	71195.3	97.67	PASS	70-130
Std5-20/200 ppb	ICAL	1	5775005.8	5923501.6	97.49	PASS	70-130	69613.3	71195.3	97.78	PASS	70-130
Std6-40/400 ppb	ICAL	1	5727820.3	5923501.6	96.7	PASS	70-130	68611.4	71195.3	96.37	PASS	70-130
Std7-100/1000 ppb	ICAL	1	5740790.6	5923501.6	96.92	PASS	70-130	67588.3	71195.3	94.93	PASS	70-130
Std8-200/2000 ppb	ICAL	1	5712823.8	5923501.6	96.44	PASS	70-130	66699	71195.3	93.68	PASS	70-130
ICV	ICV	1	6068030.5	5923501.6	102.44	PASS	70-130	70174.9	71195.3	98.57	PASS	70-130
ICB	ICB	1	6329781.7	5923501.6	106.86	PASS	70-130	73272.3	71195.3	102.92	PASS	70-130
LLICV	CCV1	1	6913192	5923501.6	116.71	PASS	70-130	82230.2	71195.3	115.5	PASS	70-130
ICSA1	ICSA	1	6182381.8	5923501.6	104.37	PASS	70-130	76715	71195.3	107.75	PASS	70-130
ICSAB1	ICSAB	1	6121305.4	5923501.6	103.34	PASS	70-130	74100.5	71195.3	104.08	PASS	70-130
N019543-001B	SAMP	5	6242139.4	5923501.6	105.38	PASS	70-130	84279.4	71195.3	118.38	PASS	70-130
N019543-001B	SAMP	25	6183344.4	5923501.6	104.39	PASS	70-130	80243.6	71195.3	112.71	PASS	70-130
N019543-001B-PS	PS	5	6207959.6	5923501.6	104.8	PASS	70-130	77456.1	71195.3	108.79	PASS	70-130
N019543-001B-MS	MS	5	6285930.3	5923501.6	106.12	PASS	70-130	77327.4	71195.3	108.61	PASS	70-130
N019543-001B-MSD	MSD	5	6356635.6	5923501.6	107.31	PASS	70-130	77014.1	71195.3	108.17	PASS	70-130
N019543-011B	SAMP	5	6359470.9	5923501.6	107.36	PASS	70-130	76713.3	71195.3	107.75	PASS	70-130
N019543-011B-MS	MS	5	6570947.6	5923501.6	110.93	PASS	70-130	78219.8	71195.3	109.87	PASS	70-130
N019543-009B	SAMP	1	6576392.8	5923501.6	111.02	PASS	70-130	75880.2	71195.3	106.58	PASS	70-130
N019543-014B	SAMP	1	6639587.3	5923501.6	112.09	PASS	70-130	76090.9	71195.3	106.88	PASS	70-130
CCV1	CCV	1	6277491.6	5923501.6	105.98	PASS	70-130	78648.5	71195.3	110.47	PASS	70-130
CCB1	CCB	1	6277691.7	5923501.6	105.98	PASS	70-130	75943.2	71195.3	106.67	PASS	70-130
CCV2	CCV	1	6529262.8	5923501.6	110.23	PASS	70-130	77797.6	71195.3	109.27	PASS	70-130
CCB2	CCB	1	6539218.5	5923501.6	110.39	PASS	70-130	76160.3	71195.3	106.97	PASS	70-130
CCV3	CCV	1	6661704.5	5923501.6	112.46	PASS	70-130	81147.3	71195.3	113.98	PASS	70-130
CCB3	CCB	1	6611881.1	5923501.6	111.62	PASS	70-130	78919.5	71195.3	110.85	PASS	70-130
CCV4	CCV	1	6609195.8	5923501.6	111.58	PASS	70-130	85893.5	71195.3	120.64	PASS	70-130
CCB4	CCB	1	6703611.4	5923501.6	113.17	PASS	70-130	85237.9	71195.3	119.72	PASS	70-130
LLCCV1	CCV2	1	7170987.4	5923501.6	121.06	PASS	70-130	90450.2	71195.3	127.05	PASS	70-130
ICSA2	ICSA	1	7264026.3	5923501.6	122.63	PASS	70-130	85329.5	71195.3	119.85	PASS	70-130
ICSAB2	ICSAB	1	6262635.5	5923501.6	105.73	PASS	70-130	86255.4	71195.3	121.15	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N019543
Test Method: EPA 6020
Analysis Date: 5/4/2016

Matrix: Groundwater
Batch No.: 57229

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N019543-001B DT 5X	Arsenic	ug/L	2.289629	NA	2.131522	7.42%	10
N019543-001B DT 5X	Chromium	ug/L	0	NA	0		10
N019543-001B DT 5X	Manganese	ug/L	0.477398	NA	0.102009	368.00%	10
N019543-001B DT 5X	Molybdenum	ug/L	5.050324	NA	5.03078	0.39%	10
N019543-001B DT 5X	Selenium	ug/L	1.474989	NA	1.409517	4.64%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N019543
Test Method: EPA 6020
Analysis Date: 5/9/2016

Matrix: Groundwater
Batch No.: 57229

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N019543-001B DT 25X	Barium	ug/L	136.8318	PASS	134.6	1.66%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019543-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108271
Client ID:	ZZZZZZ	Batch ID:	57229	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2316459

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.725	0.10	10.00	2.132	95.9	80	120				
Manganese	88.519	0.50	100.0	0.1020	88.4	80	120				
Molybdenum	15.429	0.50	10.00	5.031	104	80	120				
Selenium	10.002	0.50	10.00	1.410	85.9	80	120				

Sample ID	N019543-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57229	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321090

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	241.697	5.0	100.0	134.6	107	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019543
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N019543-001B-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID:	**ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.178	1.0	10.00	0	91.8	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Detection Limit
Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

ACCEPTANCE CRITERIA: MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	MDL*10	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0313	0.3133	0.3000	0.187	0.50	0.515	103
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0248	0.2485	0.3000	0.049	0.10	0.103	103
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699	0.6986	0.3000	0.403	1.00	1.245	125
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0430	0.4304	0.3000	0.185	0.50	0.524	105
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0473	0.4734	0.3000	0.174	0.50	0.501	100
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0192	0.1925	0.3000	0.321	1.00	0.973	97
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263	0.2630	0.3000	0.163	0.50	0.475	95
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2626	2.6262	0.3000	0.328	1.00	1.062	106
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7517	7.5170	0.3000	0.605	10.00	11.338	113
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367	0.3670	0.3000	0.343	1.00	1.018	102
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0554	0.5543	0.3000	0.193	0.50	0.605	121
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0385	0.3853	0.3000	0.247	0.50	0.660	132
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0395	0.3954	0.3000	0.341	1.00	1.002	100
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276	0.2760	0.3000	0.170	0.50	0.502	100
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590	0.5899	0.3000	0.247	1.00	1.029	103
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296	0.2961	0.3000	0.186	0.50	0.549	110
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0327	0.3272	0.3000	0.181	0.50	0.533	107
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213	0.2133	0.3000	0.221	1.00	0.873	87
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2678	2.6780	0.3000	3.286	10.00	10.085	101

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N019544

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N019544

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-39
Sample Receiving Items	40-44
List of Analysts	45
Raw Data	
EPA 120.1	46-50
SM 4500 H+B	51-55
SM 2540C	56-65
EPA 200.7_ Dissolved	66-105
EPA 218.6	106-214
SM 2320B	215-224
EPA 300	225-252
SM 3500-Cr B	253-265
EPA 4500-NO3F	266-279
EPA 6020_Dissolved	280-344

May 16, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019544

RE: PG&E Topock - PMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 27, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N019544

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N019544-002B-MS2 and N019544-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 218.6:

Method Blank (MB-R108256) has hit greater than 0.02ppb but less than 1/10 of the amount measured in sample.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) is outside recovery criteria on QC sample N019533-001CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *16-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N019544
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019544-001A	PE-01-0416	Groundwater	4/27/2016 8:06:00 AM	4/27/2016	5/16/2016
N019544-001B	PE-01-0416	Groundwater	4/27/2016 8:06:00 AM	4/27/2016	5/16/2016
N019544-001C	PE-01-0416	Groundwater	4/27/2016 8:06:00 AM	4/27/2016	5/16/2016
N019544-001D	PE-01-0416	Groundwater	4/27/2016 8:06:00 AM	4/27/2016	5/16/2016
N019544-002A	TW-03D-0416	Groundwater	4/27/2016 8:35:00 AM	4/27/2016	5/16/2016
N019544-002B	TW-03D-0416	Groundwater	4/27/2016 8:35:00 AM	4/27/2016	5/16/2016
N019544-002C	TW-03D-0416	Groundwater	4/27/2016 8:35:00 AM	4/27/2016	5/16/2016
N019544-002D	TW-03D-0416	Groundwater	4/27/2016 8:35:00 AM	4/27/2016	5/16/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-001

Client Sample ID: PE-01-0416
Collection Date: 4/27/2016 8:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428B**	QC Batch: **R107160**			PrepDate			Analyst: **QBM**
Specific Conductance	3600	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-002

Client Sample ID: TW-03D-0416
Collection Date: 4/27/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160428B**	QC Batch: **R107160**			PrepDate			Analyst: **QBM**
Specific Conductance	8100	0.10	0.10		umhos/cm	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N019544-002CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **107160**
Client ID: **ZZZZZZ** Batch ID: **R107160** TestNo: **EPA 120.1** Analysis Date: **4/28/2016** SeqNo: **2309220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8040.000	0.10						8060	0.248	10	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-001

Client Sample ID: PE-01-0416
Collection Date: 4/27/2016 8:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428D**	QC Batch: **R107162**			PrepDate			Analyst: **QBM**
pH	7.6	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-002

Client Sample ID: TW-03D-0416
Collection Date: 4/27/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160428D**	QC Batch: **R107162**		PrepDate				Analyst: **QBM**
pH	7.2	0.10	0.10	H	pH Units	1	4/28/2016
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/28/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N019543-014DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **107162**
Client ID: **ZZZZZZ** Batch ID: **R107162** TestNo: **SM4500-H+B** Analysis Date: **4/28/2016** SeqNo: **2309236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.680	0.10						7.700	0.260	10	H
Temp. at time of pH Analysis	19.700	0.10						19.60	0.509	10	H

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-001

Client Sample ID: PE-01-0416
Collection Date: 4/27/2016 8:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160503C**	QC Batch: **57270**				PrepDate	**5/3/2016**	Analyst: **QBM**
Total Dissolved Solids (Residue, Filterable)	2100	25	25		mg/L	1	5/3/2016 07:25 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0416
Lab Order:	N019544	**Collection Date:**	4/27/2016 8:35:00 AM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019544-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160503C**	QC Batch: **57270**				PrepDate	**5/3/2016**	Analyst: **QBM**
Total Dissolved Solids (Residue, Filterable)	4700	50	50		mg/L	1	5/3/2016 07:25 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-57270**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/3/2016**	RunNo: **108326**
Client ID: **LCSW**	Batch ID: **57270**	TestNo: **SM2540C**		Analysis Date: **5/3/2016**	SeqNo: **2319047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	994.000	10	1000	0	99.4	80	120				

Sample ID **MB-57270**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/3/2016**	RunNo: **108326**
Client ID: **PBW**	Batch ID: **57270**	TestNo: **SM2540C**		Analysis Date: **5/3/2016**	SeqNo: **2319048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N019544-002C-DUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/3/2016**	RunNo: **108326**
Client ID: **ZZZZZZ**	Batch ID: **57270**	TestNo: **SM2540C**		Analysis Date: **5/3/2016**	SeqNo: **2319051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4815.000	50						4715	2.10	5	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-001

Client Sample ID: PE-01-0416
Collection Date: 4/27/2016 8:06:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **ICP2_160510E** QC Batch: **58317** PrepDate **5/6/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	120000	28	500		µg/L	1	5/10/2016 01:39 PM
Iron	ND	1.8	20		µg/L	1	5/10/2016 01:39 PM
Magnesium	24000	4.4	100		µg/L	1	5/10/2016 01:39 PM
Sodium	670000	580	25000		µg/L	50	5/10/2016 10:49 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-002

Client Sample ID: TW-03D-0416
Collection Date: 4/27/2016 8:35:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **ICP2_160510E** QC Batch: **58317** PrepDate **5/6/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	240000	28	500		µg/L	1	5/10/2016 01:46 PM
Iron	42	1.8	20		µg/L	1	5/10/2016 01:46 PM
Magnesium	30000	4.4	100		µg/L	1	5/10/2016 01:46 PM
Sodium	1500000	580	25000		µg/L	50	5/10/2016 10:55 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-58317**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/6/2016**	RunNo: **108378**
Client ID: **PBW**	Batch ID: **58317**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322583**

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

Sample ID **LCS2-58317**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/6/2016**	RunNo: **108378**
Client ID: **LCSW**	Batch ID: **58317**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20035.789	500	20000	0	100	85	115				

Sample ID **N019544-002B-MS2**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/6/2016**	RunNo: **108378**
Client ID: **ZZZZZZ**	Batch ID: **58317**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1563224.500	25000	20000	1520000	215	75	125				S

Sample ID **N019544-002B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/6/2016**	RunNo: **108378**
Client ID: **ZZZZZZ**	Batch ID: **58317**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1571088.937	25000	20000	1520000	254	75	125	1563000	0.502	20	S

Sample ID **MB-58317**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/6/2016**	RunNo: **108380**
Client ID: **PBW**	Batch ID: **58317**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	9.616	20									
Magnesium	17.907	100									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	LCS1-58317	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/6/2016	RunNo:	108380
Client ID:	LCSW	Batch ID:	58317	TestNo:	EPA 200.7			Analysis Date:	5/10/2016	SeqNo:	2322664

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9398.497	500	10000	0	94.0	85	115				
Iron	110.701	20	100.0	0	111	85	115				
Magnesium	10655.815	100	10000	0	107	85	115				

Sample ID	N019544-001B-MS1	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/6/2016	RunNo:	108380
Client ID:	ZZZZZZ	Batch ID:	58317	TestNo:	EPA 200.7			Analysis Date:	5/10/2016	SeqNo:	2322669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	126904.532	500	10000	116400	105	75	125				
Iron	105.532	20	100.0	7.141	98.4	75	125				
Magnesium	32625.545	100	10000	24040	85.9	75	125				

Sample ID	N019544-001B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/6/2016	RunNo:	108380
Client ID:	ZZZZZZ	Batch ID:	58317	TestNo:	EPA 200.7			Analysis Date:	5/10/2016	SeqNo:	2322670

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	126026.927	500	10000	116400	96.5	75	125	126900	0.694	20	
Iron	103.419	20	100.0	7.141	96.3	75	125	105.5	2.02	20	
Magnesium	32740.862	100	10000	24040	87.0	75	125	32630	0.353	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-001

Client Sample ID: PE-01-0416
Collection Date: 4/27/2016 8:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160504B**	QC Batch: **R108256**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	1.2	0.066	0.20		µg/L	1	5/4/2016 10:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160504C**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	1.1	0.019	1.0		µg/L	1	5/4/2016 11:50 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-002

Client Sample ID: TW-03D-0416
Collection Date: 4/27/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_160512F**	QC Batch: **R108460**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	620	1.4	10		µg/L	1	5/12/2016
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **ICP7_160506B**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Chromium	660	0.096	5.0		µg/L	5	5/6/2016 05:53 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**MB-R108256**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID:	**PBW**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315660**

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

Sample ID	**LCS-R108256**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID:	**LCSW**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.940	0.20	5.000	0	98.8	90	110				

Sample ID	**N019543-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID:	**ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0.08410	0	20	

Sample ID	**N019543-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID:	**ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0.08410	101	90	110				

Sample ID	**N019543-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID:	**ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.108	0.20	1.000	0.08410	102	90	110	1.089	1.73	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019543-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.061	0.20	1.000	0	106	90	110				

Sample ID	N019543-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315671

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.064	0.20	1.000	0	106	90	110				

Sample ID	N019543-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315675

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID	N019543-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID	N019543-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315681

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019543-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315683

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.113	0.20	1.000	0.08350	103	90	110				

Sample ID	N019543-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315685

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.001	0.20	1.000	0.09420	90.7	90	110				

Sample ID	N019543-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID	N019543-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315693

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID	N019543-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315695

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.148	0.20	1.000	0.09570	105	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019543-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315697

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.09980	103	90	110				

Sample ID	N019544-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315699

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.231	0.20	1.000	1.201	103	90	110				

Sample ID	N019543-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108256
Client ID:	ZZZZZZ	Batch ID:	R108256	TestNo:	EPA 218.6			Analysis Date:	5/4/2016	SeqNo:	2315700

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	LCS-R108460	SampType:	LCS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	LCSW	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	98.933	10	100.0	0	98.9	85	115				

Sample ID	MB-R108460	SampType:	MBLK	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	PBW	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID	N019544-002ADUP	SampType:	DUP	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	ZZZZZZ	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326413

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	629.474	10						619.0	1.68	20	

Sample ID	N019730-003AMS	SampType:	MS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	ZZZZZZ	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326418

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	309.209	10	250.0	46.49	105	85	115				

Sample ID	N019730-003AMSD	SampType:	MSD	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	ZZZZZZ	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326419

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	311.795	10	250.0	46.49	106	85	115	309.2	0.833	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-57229**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **PBW**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.052	1.0									

Sample ID **LCS-57229**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **LCSW**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.494	1.0	10.00	0	94.9	85	115				

Sample ID **N019543-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.192	1.0	10.00	0	91.9	75	125				

Sample ID **N019543-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.231	1.0	10.00	0	92.3	75	125	9.192	0.431	20	

Sample ID **N019543-011B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.194	1.0	10.00	0	81.9	75	125				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-001

Client Sample ID: PE-01-0416
Collection Date: 4/27/2016 8:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160504E**	QC Batch: **R108282**			PrepDate			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	5/4/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0416
Lab Order:	N019544	**Collection Date:**	4/27/2016 8:35:00 AM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019544-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160504E**	QC Batch: **R108282**			PrepDate			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	5/4/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R108282**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **LCSW**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101.053	5.0	100.0	0	101	85	115				

Sample ID **MB-R108282**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **PBW**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N019606-001DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **ZZZZZZ**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	226.316	5.0	100.0	130.5	95.8	75	125				

Sample ID **N019606-001DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **ZZZZZZ**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	227.368	5.0	100.0	130.5	96.8	75	125	226.3	0.464	20	

Sample ID **N019606-002DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **ZZZZZZ**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	90.526	5.0						90.53	0	30	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-001

Client Sample ID: PE-01-0416
Collection Date: 4/27/2016 8:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160429A**	QC Batch: **R107198**			PrepDate			Analyst: **QBM**
Chloride	830	3.9	100		mg/L	200	4/29/2016 10:51 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160429A**	QC Batch: **R107198**			PrepDate			Analyst: **QBM**
Sulfate	340	3.3	25		mg/L	50	4/29/2016 12:09 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-002

Client Sample ID: TW-03D-0416
Collection Date: 4/27/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160429A**	QC Batch: **R107198**			PrepDate			Analyst: **QBM**
Chloride	2300	9.7	250		mg/L	500	4/29/2016 11:22 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160429A**	QC Batch: **R107198**			PrepDate			Analyst: **QBM**
Sulfate	500	6.6	50		mg/L	100	4/29/2016 12:40 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R107198_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	PBW	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311537

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

Sample ID	LCS-R107198_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	LCSW	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311538

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.618	0.50	2.500	0	105	90	110				

Sample ID	N019544-001CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	ZZZZZZ	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311540

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	821.600	100						828.4	0.824	20	

Sample ID	N019544-002CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	ZZZZZZ	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311542

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3476.000	250	1250	2305	93.7	80	120				

Sample ID	N019544-002CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	ZZZZZZ	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311543

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3488.500	250	1250	2305	94.7	80	120	3476	0.359	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R107198_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	PBW	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311555

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

Sample ID	LCS-R107198_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	LCSW	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311556

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.071	0.50	5.000	0	101	90	110				

Sample ID	N019544-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	ZZZZZZ	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311558

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	346.100	25						335.2	3.20	20	

Sample ID	N019544-002CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	ZZZZZZ	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311562

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1017.000	50	500.0	499.2	104	80	120				

Sample ID	N019544-002CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	107198
Client ID:	ZZZZZZ	Batch ID:	R107198	TestNo:	EPA 300.0			Analysis Date:	4/29/2016	SeqNo:	2311563

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	997.200	50	500.0	499.2	99.6	80	120	1017	1.97	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-001

Client Sample ID: PE-01-0416
Collection Date: 4/27/2016 8:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0416
Lab Order:	N019544	**Collection Date:**	4/27/2016 8:35:00 AM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019544-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160429H**	QC Batch: **R108305**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R108305	**MBLK**	**4500N03F_W**	**mg/L**		**108305**
Client ID: **PBW**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317821**

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

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R108305	**LCS**	**4500N03F_W**	**mg/L**		**108305**
Client ID: **LCSW**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019533-001CDUP	**DUP**	**4500N03F_W**	**mg/L**		**108305**
Client ID: **ZZZZZZ**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019533-001CMS	**MS**	**4500N03F_W**	**mg/L**		**108305**
Client ID: **ZZZZZZ**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.635	0.050	0.5000	0	127	75	125				S

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019533-001CMSD	**MSD**	**4500N03F_W**	**mg/L**		**108305**
Client ID: **ZZZZZZ**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.614	0.050	0.5000	0	123	75	125	0.6354	3.49	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019544
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N019544-001

Client Sample ID: PE-01-0416
Collection Date: 4/27/2016 8:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160504D**	QC Batch: **57229**				PrepDate	**4/29/2016**	Analyst: **CEI**
Manganese	93	0.056	0.50		µg/L	1	5/4/2016 11:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0416
Lab Order:	N019544	**Collection Date:**	4/27/2016 8:35:00 AM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019544-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160504D**	QC Batch: **57229**			PrepDate	**4/29/2016**		Analyst: **CEI**
Manganese	17	0.056	0.50		µg/L	1	5/4/2016 11:55 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**MB-57229**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108271**
Client ID:	**PBW**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316455**

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

Sample ID	**LCS-57229**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108271**
Client ID:	**LCSW**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	90.741	0.50	100.0	0	90.7	85	115				

Sample ID	**N019543-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108271**
Client ID:	**ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.167	0.50	100.0	0.1020	88.1	75	125				

Sample ID	**N019543-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108271**
Client ID:	**ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.461	0.50	100.0	0.1020	88.4	75	125	88.17	0.332	20	

Sample ID	**N019543-011B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **4/29/2016**	RunNo: **108271**
Client ID:	**ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	78.368	0.50	100.0	0	78.4	75	125				

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓ (Specify: RWQCB); Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@eritigen.com	Address:	Sample Receipt Condition (Y N): 1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 2-10
Submitted By: Jason Mathews	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	
Title: 4/27/16			
Signature: Date:	Sampled By: Jason Mathews		
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*		
Project Name: PG&E Topock - PMP	Signature: Date: 4/27/16		
Project Number: RC000753.0801			

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH 250 mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr, Mn 500mL poly	Dissolved metals (E200.7) FF; HNO3 Ca, Mg, Na, Fe 500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba 500mL poly	Total metals (SW6010B); HNO3 Fe 500 mL poly	Anions (E300.0); Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019544 - 01	PE-01-0416	4/27/2016	0806		X		X	X			X	X	X	X	X		X	E	4	P	BNS	
2	- 02	TW-03D-0416	4/27/2016	0835			X	X	X			X	X	X	X	X		X	E	4	P	BNS	
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Courier:
Tracking No.:

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	4/27/16 1620		4/27/16 1620
	4/27/16 1645		4/27/16 1645

Turn Around Time (TAT)

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

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

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

Preservatives:

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

Container Type:

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

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

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/27/2016	Workorder:	N019544
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments: Sample for pH was past holding time upon receipt.

Checklist Completed By: For: MBC 5/2/2016

Reviewed By: 05/05/16

ASSET Laboratories

WORK ORDER Summary

28-Apr-16

WorkOrder: N019544

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019544-001A	PE-01-0416	4/27/2016 8:06:00 AM	5/11/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019544-001B			5/11/2016			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019544-001C			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/11/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/11/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/11/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/11/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/11/2016		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N019544-001D			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019544-002A	TW-03D-0416	4/27/2016 8:35:00 AM	5/11/2016		SM 3500-Cr B	HEXAVALENT CHROMIUM	☐	☐	☐	WW
N019544-002B			5/11/2016			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/11/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019544-002C			5/11/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Apr-16

WorkOrder: N019544

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/27/2016

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019544-002C	TW-03D-0416	4/27/2016 8:35:00 AM	5/11/2016	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			5/11/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/11/2016			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/11/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/11/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/11/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/11/2016		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N019544-002D			5/11/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019544-003A	FOLDER		5/11/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/11/2016		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N019544**

NAME	TEST METHOD
Quennie Manimtim	EPA 120.1, SM 4500 H+B, SM 2540C, SM 3500-Cr B, SM 2320B, EPA 300
Claire Ignacio	EPA 200.7_Dissolved, EPA 6020_Dissolved
Ryan Balilu	SM 4500-NO3F
Janette Soria	EPA 218.6

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R107160 **Analyst:** QBM

ASSET #: N019544 **Date Analyzed:** 4/28/2016

Method: 120.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/12/2016

2nd Level Reviewer 5/13/2016 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 4/16/16 @ 9:20 am
Analyst: YRT

	Standard	Std ID	Reading	Comments
	9.31 µS/cm	CINV - 160111A	9.45 µS/cm @ 19.0°C	% Rec: (90-110%)
	1412	151012A	1443 @ 19.1°C	
	9992	160111B	10200 @ 19.0°C	
	99797	151012B	104100 @ 19.0°C	

	Sample ID	Matrix	Reading	Comments
1	NO19445-001A	Water	40.6 µS/cm @ 17.9°C	
2	NO19445-001ADUP	1	40 5 1 @ 18.8°C	
3				
4				
5				
6				
7				
8	1413 µS/cm	CINV - 160111C	1430 µS/cm @ 19.8°C	
9	10000	150909A	10440 @ 19.0°C	
10	99893	151130A	94900 @ 18.8°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 4/28/16 @ 2:05 PM
Analyst: L

	Standard	Std ID	Reading	Comments
	9.31 µS/cm	CINV - 160111A	9.10 µS/cm @ 21.9°C	% Rec: (90-110%)
	1412	CINV - 151012A	1437 @ 21.9°C	
	9992	CINV - 160111B	10350 @ 21.9°C	
	99797	CINV - 151012B	104400 @ 21.7°C	

	Sample ID	Matrix	Reading	Comments
1	NO19543-0010	H_2O	974 µS/cm @ 19.4°C	
2	20		977 @ 19.0°C	
3	30		972 @ 18.6°C	
4	40		970 @ 19.0°C	
5	50		968 @ 19.1°C	
6	60		972 @ 19.1°C	
7	70		983 @ 18.9°C	
8	80		986 @ 19.2°C	
9	90		982 @ 19.3°C	
10	100		987 @ 19.3°C	
Dup	100		986 @ 19.7°C	Accept: 10% water, 20% soil
	Std Chk: 1413 µS/cm	CINV - 160111B&E2	1440 @ 21.3°C	% Rec: (90-110%)
	10,000	CINV - 150909A	10360 @ 21.3°C	Logbook # 5
	99893	CINV - 151130A	103900 @ 21.6°C	

Date: CONTINUATION

Analyst:

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

	Sample ID	Matrix	Reading	Comments
1	N019543-001D	H_2O	988 µs/cm @ 19.5°C	
2	1DD		982 @ 20.0°C	
3	1DD		1053 @ 20.3°C	
4	1MD		1063 @ 20.7°C	
5	N019544-001C		3590 @ 20.7°C	
6	2C		8060 @ 20.6°C	
7	2CDUP		8040 @ 20.7	
8				
9	1413 µs/cm	CINV-160111BEC	1411 @ 21.8°C	
10	10,006	CINV-150909A	10370 @ 21.7°C	
Dup	99893	CINV-151130A	104000 @ 21.9°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 4/29/16 1320

Analyst:

Standard	Std ID	Reading	Comments
9.91 µs/cm	CINV-160111A	9.17 µs/cm @ 22.4°C	% Rec: (90-110%)
1412	CINV-151012A	1412 @ 22.4°C	
9992	CINV-160111B	10240 @ 22.4°C	
99797	CINV-151012B	102400 @ 22.4°C	

	Sample ID	Matrix	Reading	Comments
1	N019558-001A	H_2O	158.6 µs/cm @ 21.5°C	
2	2A		509 @ 21.0°C	
3	3A		134.8 @ 21.0°C	
4	N019559-001D		957 @ 19.9°C	
5	2D		950 @ 19.5°C	
6	3D		950 @ 19.6°C	
7	4D		951 @ 19.6°C	
8	5D		944 @ 19.5°C	
9	6D		950 @ 19.7°C	
10	7D		943 @ 19.7°C	
Dup	7D		943 @ 19.7°C	Accept: 10% water, 20% soil
	Std Chk: 1413 µs/cm	CINV-160111BEC	1444 @ 22.3°C	% Rec: (90-110%)
	10,000	150911A	10680 @ 22.4°C	Logbook # 5
	99300	151208A	99300 @ 22.3°C	

SM 4500 H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R107162 **Analyst:** QBM

ASSET #: N019544 **Date Analyzed:** 4/28/2016

Method: 150.1

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

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/12/2016

2nd Level Reviewer 5/13/2016 Date: _____

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 4/28/16

Analyst:

Standard	Std ID	pH	Comments
Buffer 4	CNV 1508283	4.00 @ 18.6	Slope - 98.3%
Buffer 7	CNV 160309A	7.02 @ 18.4	
Buffer 10	CNV 160111D	10.04 @ 19.7	

	Sample ID	Matrix	pH	Comments
1	NO 19503-001A	SOLID	9.46 / 1.41	
2	NO 19539-001A	Soil	8.57 / 1.44	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)			Accept: +/-0.1 pH units from expected value

Date: 4/28/16 @ 2:00 PM

Analyst: L

Standard	Std ID	pH	Comments
Buffer 4	CNV-150828B	4.03 @ 21.5°C	slope: 99.8%
Buffer 7	CNV-160309A	7.03 @ 21.4°C	
Buffer 10	CNV-160111D	10.04 @ 21.0°C	

	Sample ID	Matrix	pH	Comments
1	NO19543-001D	H_2O	6.16 @ 18.5°C	
2	2D		8.24 @ 17.6°C	
3	3D		8.21 @ 17.1°C	
4	4D		8.24 @ 17.1°C	
5	5D		8.25 @ 17.2°C	
6	6D		8.27 @ 17.5°C	
7	7D		8.28 @ 17.6°C	
8	8D		8.10 @ 17.8°C	
9	9D		8.25 @ 17.9°C	
10	10D		8.24 @ 18.1°C	
Dup	10D		8.24 @ 18.4°C	Accept: 10% water, 20% soil
	Buffer 4, (7) 10 (Circle one)	CNV-160111C	7.03 @ 21.7°C	Accept: +/-0.1 pH units from expected value

pH Logbook

Date: ~~CONTINUATION~~

Analyst:

Standard	Std ID	pH	Comments
Buffer 4			
Buffer 7			
Buffer 10		2	

	Sample ID	Matrix	pH	Comments
1	N0195 43 - 011D	H_2O	~~8.19~~ ~~8.19~~ 8.15 @ 18.5°C	
2	12D		8.19 @ 18.4°C	
3	13D		7.66 @ 18.7°C	
4	14D		7.70 @ 18.6°C	
5	14DDUP		7.68 @ 19.7°C	
6	N0195 44 - 001C		7.57 @ 19.3°C	
7	2C		7.24 @ 19.4°C	
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7), 10	CINV-160111C	7.03 @ 22.0°C	Accept: +/-0.1 pH units from expected value

(Circle one)

Date: ~~04~~ 09/16 1315

Analyst: RMB

Standard	Std ID	pH	Comments
Buffer 4	CINV-150828B	4.03 @ 22.3°C	Slope: 98.8%
Buffer 7	CINV-160309A	7.03 @ 22.4°C	
Buffer 10	CINV-160111D	10.05 @ 22.1°C	

	Sample ID	Matrix	pH	Comments
1	N0195 58 - 001A	H_2O	6.47 @ 19.8°C	
2	2A		6.41 @ 20.2°C	
3	3A		6.42 @ 20.1°C	
4	N0195 59 - 001D		8.19 @ 18.4°C	
5	2D		8.22 @ 18.3°C	
6	3D		8.22 @ 18.4°C	
7	4D		8.24 @ 18.7°C	
8	5D		8.23 @ 18.3°C	
9	6D		8.25 @ 18.1°C	
10	7D		8.23 @ 18.2°C	
Dup	7 ~~8~~D		8.25 @ 18.1°C	Accept: 10% water, 20% soil
	Buffer 4, (7), 10 ~~4 1/2 16~~	CINV-160111C	7.04 @ 21.8°C	Accept: +/-0.1 pH units from expected value

(Circle one)

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57270 **Analyst:** QBM

ASSET #: N019544 **Date Analyzed:** 5/3/2016

Method: SM2540C

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/13/2016

2nd Level Reviewer 5/16/2016 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

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

FORMULA:

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

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

Where:

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

For **N019544-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(55.7063-55.6220)*1000000}{40}$$
$$= 2107.5 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2100 mg/L

5/13/2016

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/3/2016 7:25:13 A**
Prep End Date: **5/4/2016 11:25:00 A**

Initials/ Date: 5/13/2016

Prep Batch **57270** Prep Code: **160.1_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57270	Water		100	☐	0	0	100	1.000		
MB-57270	Water		100	☐	0	0	100	1.000		
N019544-001C	Groundwater		40	☐	0	0	100	2.500		
N019544-002C	Groundwater		20	☐	0	0	100	5.000		
N019544-002C-DU	Groundwater		20	☐	0	0	100	5.000		
N019593-001C	Groundwater		100	☐	0	0	100	1.000		
N019593-002C	Groundwater		100	☐	0	0	100	1.000		
N019593-003C	Groundwater		100	☐	0	0	100	1.000		
N019593-004C	Groundwater		100	☐	0	0	100	1.000		

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

Number	Reagent Name
8392	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160414A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/3/2016 7:25:13 A**
Prep End Date: Initials/ Date: _____

Prep Batch **57270** Prep Code: **160.1_W_PRE** Technician: **Quennie Manimtim** Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57270 S	Water		100	☐	0	0	100	1.000		
MB-57270 BB	Water		100	☐	0	0	100	1.000		
N019544-001C 27	Groundwater	3590	~~100~~ 40	☐	0	0	100	1.000		
N019544-002C 4	Groundwater	8060	~~100~~ 20	☐	0	0	100	1.000		
N019544-002C-DU 61	Groundwater	959	~~100~~ 20	☐	0	0	100	1.000		
N019593-001C 24	Groundwater	~~959~~ 2	100	☐	0	0	100	1.000		
N019593-002C AR	Groundwater	962	100	☐	0	0	100	1.000		
N019593-003C RK	Groundwater	966	100	☐	0	0	100	1.000		
N019593-004C MC	Groundwater	972	100	☐	0	0	100	1.000		

STD CHECK: 1412 - 1382
9992 - 9930

#8392
IWST 160414A

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ (TDS) TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/3/16 BB	MA-57270	100	61.3142 61.3138	61.3140 61.3141	
8	MA-57270	100	54.8129 54.8126	54.9124 54.9120	
27	NO19544-001C	40	55.6222 55.6220	55.7076 55.7065 55.7063	
4	2C	20	53.8136 53.8139	53.9100 53.9053 53.9052	
61	2C0647	20	53.8374 53.8370	53.9334 53.9333	
24	NO19593-001C	100	55.4393 55.4384 55.4383	55.5015 55.5015	
MR	2C	100	53.6028 ~~53.6011~~ 2 53.6026	53.6636 53.6640	
MR	3C	100	63.9046 ~~63.9051~~ 2 63.9044	63.9648 63.9652	
ME	4C	100	61.1537 61.1534	61.2162 61.2159	

TOTAL DISSOLVED SOLIDS, TDS

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

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

Date Finished: 5/4/2016	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
MB-57270	100	61.3138	61.3141	3	1	3			MBLK
LCS-57270	100	54.8126	54.912	994	1	994			LCS
N019544-001C	40	55.622	55.7063	843	2.5	2107.5	3590	0.587	SAMP
N019544-002C	20	53.8139	53.9082	943	5	4715	8060	0.585	SAMP
N019544-002C-DUP	20	53.837	53.9333	963	5	4815	8060	0.597	DUP
N019593-001C	100	55.4388	55.5015	627	1	627	959	0.654	SAMP
N019593-002C	100	53.6026	53.664	614	1	614	962	0.638	SAMP
N019593-003C	100	63.9044	63.9652	608	1	608	966	0.629	SAMP
N019593-004C	100	61.1534	61.2159	625	1	625	972	0.643	SAMP
				0	#DIV/0!	#DIV/0!		#DIV/0!	
				0	#DIV/0!	#DIV/0!		#DIV/0!	
				0	#DIV/0!	#DIV/0!		#DIV/0!	
				0	#DIV/0!	#DIV/0!		#DIV/0!	
				0	#DIV/0!	#DIV/0!		#DIV/0!	
				0	#DIV/0!	#DIV/0!		#DIV/0!	
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				0	#DIV/0!	#DIV/0!		#DIV/0!	
				0	#DIV/0!	#DIV/0!		#DIV/0!	
				0	#DIV/0!	#DIV/0!		#DIV/0!	
				0	#DIV/0!	#DIV/0!		#DIV/0!	

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58317
ASSET #: N019544

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/10/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N019544-002B PS/MS/MSD failed. However LCS passed criteria.

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

1st Level Reviewer 5/13/2016 Date: —

2nd Level Reviewer 5/16/2016 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58317
ASSET #: N019544

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 5/10/2016

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Ca, Fe & Mg run only
%Rec of Ca & Mg in N019544-001B PS failed. However LCS passed criteria.

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

1st Level Reviewer 5/13/2016 Date:

2nd Level Reviewer 5/16/2016 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Sodium concentration, in ug/L , in the original sample as follows:

Sodium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N019544-001B** , the concentration ir ug/L is calculated as follows:

Sodium , ug/L = 13.3199 * 50 * (25/25) * 1000

Sodium , ug/L = 665995

Reporting results in two significant figures,

Sodium , ug/L = 670000

% RSD SUMMARY

RSD SUMMARY: 160510B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	9.15	15	PASS
Standard1	ICAL	1	Na	0.1	4.015	15	PASS
Standard2	ICAL	1	Na	1	0.74	15	PASS
Standard3	ICAL	1	Na	5	0.24	15	PASS
Standard4	ICAL	1	Na	10	0.59	15	PASS
Standard5	ICAL	1	Na	20	0.28	15	PASS
Standard6	ICAL	1	Na	40	0.2	15	PASS
ICV	ICV	1	Na	10.06	0.14	15	PASS
ICB	ICB	1	Na	0.0092	15.59	15	<PQL
ICSA1	ICSA	1	Na	0.0024	205.75	15	<PQL
ICSAB1	ICSAB	1	Na	10.019	0.28	15	PASS
MB-58317	MBLK	1	Na	0.0046	61.72	15	<PQL
LCS2-58317	LCS	1	Na	20.036	0.082	15	PASS
N019544-001B	SAMP	1	Na	573.53	1.25	15	PASS
N019544-002B	SAMP	1	Na	1161.4	0.14	15	PASS
N019544-001B	SAMP	50	Na	13.32	0.19	15	PASS
N019544-002B	SAMP	50	Na	30.41	0.15	15	PASS
N019544-002B	SAMP	250	Na	6.13	0.29	15	PASS
N019544-002B-PS	PS	50	Na	32.16	0.15	15	PASS
N019544-002B-MS2	MS	50	Na	31.26	0.038	15	PASS
N019544-002B-MSD2	MSD	50	Na	31.42	0.2	15	PASS
CCV1	CCV	1	Na	10.13	0.11	15	PASS
CCB1	CCB	1	Na	0.067	3	15	PASS
CCV2	CCV	1	Na	10.14	0.49	15	PASS
CCB2	CCB	1	Na	0.045	7.48	15	PASS
ICSA2	ICSA	1	Na	0.033	16.29	15	<PQL
ICSAB2	ICSAB	1	Na	10.11	0.032	15	PASS

RSD SUMMARY: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	6.53	15	PASS
Standard1	ICAL	1	Ca	0.2	10.14	15	PASS
Standard2	ICAL	1	Ca	1	1.4	15	PASS
Standard3	ICAL	1	Ca	2	1.62	15	PASS
Standard4	ICAL	1	Ca	5	1	15	PASS
Standard5	ICAL	1	Ca	7.5	0.63	15	PASS
Standard6	ICAL	1	Ca	10	0.43	15	PASS
Standard7	ICAL	1	Ca	20	0.78	15	PASS
ICV	ICV	1	Ca	10.01	1.31	15	PASS
ICB	ICB	1	Ca	-0.019	127.21	15	<PQL
LLICV	CCV1	1	Ca	0.2	2.41	20	PASS
ICSA1	ICSA	1	Ca	673.75	15.67	15	NR!
ICSA1	ICSA	1	Ca	481.7	0.36	15	PASS
ICSAB1	ICSAB	1	Ca	579.88	0.58	15	PASS
MB-58317	MBLK	1	Ca	-0.0084	308.72	15	<PQL
LCS1-58317	LCS	1	Ca	9.4	0.29	15	PASS
N019544-001B	SAMP	1	Ca	116.37	0.49	15	PASS
N019544-002B	SAMP	1	Ca	236.52	0.74	15	PASS
N019544-001B	SAMP	5	Ca	23.85	0.61	15	PASS
N019544-001B-PS	PS	1	Ca	123.84	0.51	15	PASS
N019544-001B-MS1	MS	1	Ca	126.9	0.68	15	PASS
N019544-001B-MSD1	MSD	1	Ca	126.03	0.41	15	PASS
CCV1	CCV	1	Ca	9.95	0.25	15	PASS
CCB1	CCB	1	Ca	-0.036	80.86	15	<PQL
LLCCV1	CCV2	1	Ca	0.18	5.67	20	PASS
ICSA2	ICSA	1	Ca	479.12	0.5	15	PASS
ICSAB2	ICSAB	1	Ca	584.4	0.64	15	PASS
CalBlk	IBLK	1	Fe	0	19.86	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.84	15	PASS
Standard2	ICAL	1	Fe	0.05	0.58	15	PASS
Standard3	ICAL	1	Fe	2	0.33	15	PASS
Standard4	ICAL	1	Fe	5	0.64	15	PASS
Standard5	ICAL	1	Fe	7.5	0.19	15	PASS
Standard6	ICAL	1	Fe	10	0.36	15	PASS
Standard7	ICAL	1	Fe	20	0.058	15	PASS
ICV	ICV	1	Fe	10.34	0.33	15	PASS
ICB	ICB	1	Fe	0.0026	33.26	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.35	20	PASS
ICSA1	ICSA	1	Fe	15.79	17.67	15	NR!
ICSA1	ICSA	1	Fe	161.22	0.037	15	PASS
ICSAB1	ICSAB	1	Fe	181.88	0.11	15	PASS
MB-58317	MBLK	1	Fe	0.0096	12.47	15	PASS

RSD SUMMARY: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LCS1-58317	LCS	1	Fe	0.11	1.1	15	PASS
N019544-001B	SAMP	1	Fe	0.0071	16.76	15	<PQL
N019544-002B	SAMP	1	Fe	0.042	1.93	15	PASS
N019544-001B	SAMP	5	Fe	0.00003	3363.91	15	<PQL
N019544-001B-PS	PS	1	Fe	0.12	0.95	15	PASS
N019544-001B-MS1	MS	1	Fe	0.11	0.7	15	PASS
N019544-001B-MSD1	MSD	1	Fe	0.1	0.54	15	PASS
CCV1	CCV	1	Fe	10.32	0.33	15	PASS
CCB1	CCB	1	Fe	-0.00056	108.31	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	3.05	20	PASS
ICSA2	ICSA	1	Fe	162.05	0.27	15	PASS
ICSAB2	ICSAB	1	Fe	182.87	0.034	15	PASS
CalBlk	IBLK	1	Mg	0	152.92	15	<PQL
Standard1	ICAL	1	Mg	0.1	0.29	15	PASS
Standard2	ICAL	1	Mg	1	0.68	15	PASS
Standard3	ICAL	1	Mg	2	0.15	15	PASS
Standard4	ICAL	1	Mg	5	0.72	15	PASS
Standard5	ICAL	1	Mg	7.5	0.072	15	PASS
Standard6	ICAL	1	Mg	10	0.45	15	PASS
Standard7	ICAL	1	Mg	20	0.12	15	PASS
ICV	ICV	1	Mg	10.23	0.35	15	PASS
ICB	ICB	1	Mg	0.0023	47.86	15	<PQL
LLICV	CCV1	1	Mg	0.11	0.55	20	PASS
ICSA1	ICSA	1	Mg	-3.96	114.82	15	<PQL
ICSA1	ICSA	1	Mg	448.65	0.039	15	PASS
ICSAB1	ICSAB	1	Mg	520.7	0.15	15	PASS
MB-58317	MBLK	1	Mg	0.018	2.3	15	PASS
LCS1-58317	LCS	1	Mg	10.66	0.59	15	PASS
N019544-001B	SAMP	1	Mg	24.036	0.51	15	PASS
N019544-002B	SAMP	1	Mg	29.53	0.32	15	PASS
N019544-001B	SAMP	5	Mg	5.19	0.23	15	PASS
N019544-001B-PS	PS	1	Mg	31.94	0.17	15	PASS
N019544-001B-MS1	MS	1	Mg	32.63	0.16	15	PASS
N019544-001B-MSD1	MSD	1	Mg	32.74	0.062	15	PASS
CCV1	CCV	1	Mg	10.43	0.48	15	PASS
CCB1	CCB	1	Mg	0.0017	10.53	15	PASS
LLCCV1	CCV2	1	Mg	0.11	1.043	20	PASS
ICSA2	ICSA	1	Mg	463.49	0.21	15	PASS
ICSAB2	ICSAB	1	Mg	537.96	0.15	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160510B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207G,0.025<50mL
Standard2	MWST-151207G,0.25<50mL
Standard3	MWST-151207G,1.25<50mL
Standard4	MWST-151207G,2.5<50mL
Standard5	MWST-151207G,5<50mL
Standard6	MWST-151207G,10<50mL
ICV	MSST-140120B/-111006A/-150717A
CCV	MWST-151207G,2.5<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207H
Int. Std. (Sc):	MSST-150923A
PS Spike	MSST-140120B/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/10/2016	09:52:16 AM
2	Standard1	ICAL	1	05/10/2016	09:55:33 AM
3	Standard2	ICAL	1	05/10/2016	09:58:50 AM
4	Standard3	ICAL	1	05/10/2016	10:02:39 AM
5	Standard4	ICAL	1	05/10/2016	10:06:30 AM
6	Standard5	ICAL	1	05/10/2016	10:10:23 AM
7	Standard6	ICAL	1	05/10/2016	10:14:15 AM
8	ICV	ICV	1	05/10/2016	10:17:26 AM
1	ICB	ICB	1	05/10/2016	10:21:17 AM
3	ICSA1	ICSA	1	05/10/2016	10:24:35 AM
4	ICSAB1	ICSAB	1	05/10/2016	10:27:55 AM
98	MB-58317	MBLK	1	05/10/2016	10:31:49 AM
99	LCS2-58317	LCS	1	05/10/2016	10:35:11 AM
100	N019544-001B	SAMP	1	05/10/2016	10:39:07 AM
101	N019544-002B	SAMP	1	05/10/2016	10:44:02 AM
102	N019544-001B	SAMP	50	05/10/2016	10:49:04 AM
103	N019544-002B	SAMP	50	05/10/2016	10:55:14 AM
104	N019544-002B	SAMP	250	05/10/2016	10:58:34 AM
105	N019544-002B-PS	PS	50	05/10/2016	11:01:54 AM
106	N019544-002B-MS2	MS	50	05/10/2016	11:05:14 AM
107	N019544-002B-MSD2	MSD	50	05/10/2016	11:08:34 AM
5	CCV1	CCV	1	05/10/2016	11:11:54 AM
1	CCB1	CCB	1	05/10/2016	11:15:48 AM
108	MB-58352	MBLK	1	05/10/2016	11:19:06 AM
109	LCS2-58352	LCS	1	05/10/2016	11:22:25 AM
110	N019663-001B	SAMP	1	05/10/2016	11:28:39 AM
111	N019663-001B	SAMP	5	05/10/2016	11:33:31 AM
112	N019663-001B-PS	PS	1	05/10/2016	11:37:22 AM
113	N019663-001B-MS2	MS	1	05/10/2016	11:42:18 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
114	N019663-001B-MSD2	MSD	1	05/10/2016	11:47:14 AM
5	CCV2	CCV	1	05/10/2016	11:52:10 AM
1	CCB2	CCB	1	05/10/2016	11:56:05 AM
3	ICSA2	ICSA	1	05/10/2016	11:59:22 AM
4	ICSAB2	ICSAB	1	05/10/2016	12:02:41 PM
123	N019663-001B	SAMP	10	05/10/2016	03:56:04 PM
124	N019663-001B	SAMP	50	05/10/2016	03:59:24 PM
125	N019663-001B-PS	PS	10	05/10/2016	04:02:45 PM
126	N019663-001B-MSD2	MSD	10	05/10/2016	04:07:13 PM
122	N019663-001B	SAMP	10	05/10/2016	04:10:34 PM
5	CCV3	CCV	1	05/10/2016	04:13:55 PM
1	CCB3	CCB	1	05/10/2016	04:17:16 PM
3	ICSA3	ICSA	1	05/10/2016	04:20:34 PM
5	CCV3	CCV	1	05/10/2016	04:23:03 PM
1	CCB3	CCB	1	05/10/2016	04:26:56 PM
3	ICSA3	ICSA	1	05/10/2016	04:30:13 PM
4	ICSAB3	ICSAB	1	05/10/2016	04:33:31 PM

INJECTION LOG: 160510C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/10/2016	12:07:58 PM
2	Standard1	ICAL	1	05/10/2016	12:12:49 PM
3	Standard2	ICAL	1	05/10/2016	12:18:08 PM
4	Standard3	ICAL	1	05/10/2016	12:23:28 PM
5	Standard4	ICAL	1	05/10/2016	12:28:50 PM
6	Standard5	ICAL	1	05/10/2016	12:34:13 PM
7	Standard6	ICAL	1	05/10/2016	12:39:33 PM
8	Standard7	ICAL	1	05/10/2016	12:44:54 PM
9	ICV	ICV	1	05/10/2016	12:52:43 PM
1	ICB	ICB	1	05/10/2016	12:59:06 PM
2	LLICV	CCV1	1	05/10/2016	01:03:54 PM
4	ICSA1	ICSA	1	05/10/2016	01:09:14 PM
4	ICSA1	ICSA	1	05/10/2016	01:16:36 PM
5	ICSAB1	ICSAB	1	05/10/2016	01:23:02 PM
98	MB-58317	MBLK	1	05/10/2016	01:29:30 PM
99	LCS1-58317	LCS	1	05/10/2016	01:34:21 PM
100	N019544-001B	SAMP	1	05/10/2016	01:39:43 PM
101	N019544-002B	SAMP	1	05/10/2016	01:46:06 PM
102	N019544-001B	SAMP	5	05/10/2016	01:52:28 PM
103	N019544-001B-PS	PS	1	05/10/2016	01:57:50 PM
104	N019544-001B-MS1	MS	1	05/10/2016	02:04:14 PM
105	N019544-001B-MSD1	MSD	1	05/10/2016	02:10:37 PM
7	CCV1	CCV	1	05/10/2016	02:17:00 PM
1	CCB1	CCB	1	05/10/2016	02:23:20 PM
2	LLCCV1	CCV2	1	05/10/2016	02:28:09 PM
4	ICSA2	ICSA	1	05/10/2016	02:33:29 PM
5	ICSAB2	ICSAB	1	05/10/2016	02:39:56 PM
38	MB-57287	MBLK	1	05/10/2016	04:38:59 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
39	LCS-57287	LCS	1	05/10/2016	04:43:48 PM
40	N019543-012B	SAMP	1	05/10/2016	04:49:09 PM
41	N019543-012B	SAMP	5	05/10/2016	04:54:28 PM
42	N019543-012B-PS	PS	1	05/10/2016	04:59:48 PM
43	N019543-012B-MS	MS	1	05/10/2016	05:05:08 PM
44	N019543-012B-MSD	MSD	1	05/10/2016	05:10:30 PM
45	N019543-013B	SAMP	1	05/10/2016	05:15:50 PM
46	N019543-014B	SAMP	1	05/10/2016	05:21:10 PM
47	N019559-001B	SAMP	1	05/10/2016	05:26:31 PM
7	CCV2	CCV	1	05/10/2016	05:31:52 PM
1	CCB2	CCB	1	05/10/2016	05:38:12 PM
48	N019559-002B	SAMP	1	05/10/2016	05:43:00 PM
49	N019559-003B	SAMP	1	05/10/2016	05:48:23 PM
50	N019559-004B	SAMP	1	05/10/2016	05:53:44 PM
51	N019559-005B	SAMP	1	05/10/2016	05:59:05 PM
52	N019559-006B	SAMP	1	05/10/2016	06:04:27 PM
53	N019559-007B	SAMP	1	05/10/2016	06:09:48 PM
54	N019559-007B-MS	MS	1	05/10/2016	06:15:09 PM
55	N019559-008B	SAMP	1	05/10/2016	06:20:30 PM
56	N019559-009B	SAMP	1	05/10/2016	06:25:51 PM
57	N019559-010B	SAMP	1	05/10/2016	06:31:13 PM
7	CCV3	CCV	1	05/10/2016	06:36:33 PM
1	CCB3	CCB	1	05/10/2016	06:42:54 PM
58	N019559-011B	SAMP	1	05/10/2016	06:47:42 PM
59	N019559-012B	SAMP	1	05/10/2016	06:53:04 PM
60	N019591-001B	SAMP	1	05/10/2016	06:58:25 PM
61	N019591-002B	SAMP	1	05/10/2016	07:04:46 PM
62	N019591-003B	SAMP	1	05/10/2016	07:11:07 PM
63	N019591-004B	SAMP	1	05/10/2016	07:21:38 PM
64	N019591-005B	SAMP	1	05/10/2016	07:28:00 PM
65	MB-57289	MBLK	1	05/10/2016	07:34:21 PM
66	LCS-57289	LCS	1	05/10/2016	07:39:12 PM
67	N019591-006B	SAMP	1	05/10/2016	07:44:33 PM
7	CCV4	CCV	1	05/10/2016	07:49:54 PM
1	CCB4	CCB	1	05/10/2016	07:55:14 PM
2	LLCCV2	CCV2	1	05/10/2016	08:00:03 PM
4	ICSA3	ICSA	1	05/10/2016	08:05:22 PM
5	ICSAB3	ICSAB	1	05/10/2016	08:11:49 PM
68	N019591-006B	SAMP	5	05/10/2016	08:18:17 PM
69	N019591-006B-PS	PS	1	05/10/2016	08:23:38 PM
70	N019591-006B-MS	MS	1	05/10/2016	08:29:59 PM
71	N019591-006B-MSD	MSD	1	05/10/2016	08:36:20 PM
72	N019591-007B	SAMP	1	05/10/2016	08:42:41 PM
73	N019591-009B	SAMP	1	05/10/2016	08:49:02 PM
74	N019591-010B	SAMP	1	05/10/2016	08:55:24 PM
75	N019591-011B	SAMP	1	05/10/2016	09:00:45 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
76	N019591-012B	SAMP	1	05/10/2016	09:06:06 PM
77	N019591-013B	SAMP	1	05/10/2016	09:11:27 PM
7	CCV5	CCV	1	05/10/2016	09:16:48 PM
1	CCB5	CCB	1	05/10/2016	09:22:08 PM
78	N019591-014B	SAMP	1	05/10/2016	09:26:57 PM
79	N019591-015B	SAMP	1	05/10/2016	09:32:17 PM
80	N019592-001B	SAMP	1	05/10/2016	09:37:38 PM
81	N019592-001B-MS	MS	1	05/10/2016	09:43:00 PM
82	N019592-004B	SAMP	1	05/10/2016	09:48:21 PM
83	N019592-005B	SAMP	1	05/10/2016	09:53:42 PM
84	N019592-006B	SAMP	1	05/10/2016	10:00:03 PM
85	N019592-007B	SAMP	1	05/10/2016	10:05:25 PM
86	N019610-001B	SAMP	1	05/10/2016	10:11:47 PM
87	N019610-002B	SAMP	1	05/10/2016	10:18:09 PM
7	CCV6	CCV	1	05/10/2016	10:24:31 PM
1	CCB6	CCB	1	05/10/2016	10:30:52 PM
88	N019610-003B	SAMP	1	05/10/2016	10:35:41 PM
89	N019610-004B	SAMP	1	05/10/2016	10:42:02 PM
90	N019610-007B	SAMP	1	05/10/2016	10:48:25 PM
91	N019610-009B	SAMP	1	05/10/2016	10:53:46 PM
98	MB-58327	MBLK	1	05/10/2016	10:59:07 PM
99	LCS-58327	LCS	1	05/10/2016	11:03:58 PM
100	N019610-010B	SAMP	1	05/10/2016	11:09:19 PM
101	N019610-010B	SAMP	5	05/10/2016	11:14:41 PM
102	N019610-010B-PS	PS	1	05/10/2016	11:20:03 PM
103	N019610-010B-MS	MS	1	05/10/2016	11:25:26 PM
7	CCV7	CCV	1	05/10/2016	11:30:47 PM
1	CCB7	CCB	1	05/10/2016	11:37:07 PM
2	LLCCV3	CCV2	1	05/10/2016	11:41:56 PM
4	ICSA4	ICSA	1	05/10/2016	11:47:15 PM
5	ICSAB4	ICSAB	1	05/10/2016	11:53:41 PM
104	N019610-010B-MSD	MSD	1	05/11/2016	12:00:09 AM
105	N019610-011B	SAMP	1	05/11/2016	12:05:30 AM
106	N019610-012B	SAMP	1	05/11/2016	12:10:53 AM
107	N019610-013B	SAMP	1	05/11/2016	12:17:15 AM
108	N019610-014B	SAMP	1	05/11/2016	12:23:39 AM
109	N019610-015B	SAMP	1	05/11/2016	12:29:01 AM
110	N019611-001B	SAMP	1	05/11/2016	12:35:24 AM
111	N019611-002B	SAMP	1	05/11/2016	12:41:47 AM
112	N019611-003B	SAMP	1	05/11/2016	12:47:09 AM
113	N019611-004B	SAMP	1	05/11/2016	12:52:31 AM
7	CCV8	CCV	1	05/11/2016	12:57:54 AM
1	CCB8	CCB	1	05/11/2016	01:04:14 AM
114	N019611-004B-MS	MS	1	05/11/2016	01:09:03 AM
115	N019611-005B	SAMP	1	05/11/2016	01:14:25 AM
116	N019611-006B	SAMP	1	05/11/2016	01:20:46 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
117	N019611-007B	SAMP	1	05/11/2016	01:26:10 AM
118	N019611-008B	SAMP	1	05/11/2016	01:31:31 AM
119	N019611-010B	SAMP	1	05/11/2016	01:36:55 AM
120	N019611-011B	SAMP	1	05/11/2016	01:42:18 AM
121	N019611-012B	SAMP	1	05/11/2016	01:47:40 AM
122	N019611-013B	SAMP	1	05/11/2016	01:54:03 AM
123	N019611-014B	SAMP	1	05/11/2016	01:59:26 AM
7	CCV9	CCV	1	05/11/2016	02:05:49 AM
1	CCB9	CCB	1	05/11/2016	02:11:09 AM
124	N019611-015B	SAMP	1	05/11/2016	02:15:58 AM
7	CCV10	CCV	1	05/11/2016	02:22:21 AM
1	CCB10	CCB	1	05/11/2016	02:28:41 AM
2	LLCCV4	CCV2	1	05/11/2016	02:33:30 AM
4	ICSA5	ICSA	1	05/11/2016	02:38:49 AM
5	ICSAB5	ICSAB	1	05/11/2016	02:45:16 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/6/2016 8:30:00 A**
Prep End Date: **5/6/2016 1:00:00 P**

Initials/ Date: 5/10/2016

Prep Batch **58317** Prep Code: **200.7_PR** Technician **Amy Mata**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-58317	Aqueous		25	☐	0	0	25	1.000		
LCS2-58317	Aqueous		25	☐	0	0	25	1.000		
MB-58317	Aqueous		25	☐	0	0	25	1.000		
N019544-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019544-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019544-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019544-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019544-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019544-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8406	HYDROCHLORIC ACID
8444	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160510B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	05/10/2016	09:52:16 AM	Na	589.594	75	0.00	mg/L	
Standard1	05/10/2016	09:55:33 AM	Na	589.594	428	0.1000	mg/L	
Standard2	05/10/2016	09:58:50 AM	Na	589.594	4279	1.000	mg/L	
Standard3	05/10/2016	10:02:39 AM	Na	589.594	21775	5.000	mg/L	
Standard4	05/10/2016	10:06:30 AM	Na	589.594	43248	10.000	mg/L	
Standard5	05/10/2016	10:10:23 AM	Na	589.594	85957	20.000	mg/L	
Standard6	05/10/2016	10:14:15 AM	Na	589.594	172448	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 160510C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	05/10/2016	12:07:58 PM	Mg	279.079	2	0.00	mg/L	
Standard1	05/10/2016	12:12:49 PM	Mg	279.079	936	0.1000	mg/L	
Standard2	05/10/2016	12:18:08 PM	Mg	279.079	8471	1.000	mg/L	
Standard3	05/10/2016	12:23:28 PM	Mg	279.079	17606	2.000	mg/L	
Standard4	05/10/2016	12:28:50 PM	Mg	279.079	43769	5.000	mg/L	
Standard5	05/10/2016	12:34:13 PM	Mg	279.079	65067	7.500	mg/L	
Standard6	05/10/2016	12:39:33 PM	Mg	279.079	88013	10.000	mg/L	
Standard7	05/10/2016	12:44:54 PM	Mg	279.079	170007	20.000	mg/L	0.9999
Calcium								
CalBlk	05/10/2016	12:07:58 PM	Ca	227.546	-39	0.00	mg/L	
Standard1	05/10/2016	12:12:49 PM	Ca	227.546	40	0.2000	mg/L	
Standard2	05/10/2016	12:18:08 PM	Ca	227.546	205	1.000	mg/L	
Standard3	05/10/2016	12:23:28 PM	Ca	227.546	435	2.000	mg/L	
Standard4	05/10/2016	12:28:50 PM	Ca	227.546	1098	5.000	mg/L	
Standard5	05/10/2016	12:34:13 PM	Ca	227.546	1654	7.500	mg/L	
Standard6	05/10/2016	12:39:33 PM	Ca	227.546	2246	10.000	mg/L	
Standard7	05/10/2016	12:44:54 PM	Ca	227.546	4493	20.000	mg/L	1.0000
Iron								
CalBlk	05/10/2016	12:07:58 PM	Fe	273.953	65	0.00	mg/L	
Standard1	05/10/2016	12:12:49 PM	Fe	273.953	454	0.0200	mg/L	
Standard2	05/10/2016	12:18:08 PM	Fe	273.953	1199	0.050	mg/L	
Standard3	05/10/2016	12:23:28 PM	Fe	273.953	46602	2.000	mg/L	
Standard4	05/10/2016	12:28:50 PM	Fe	273.953	115669	5.000	mg/L	
Standard5	05/10/2016	12:34:13 PM	Fe	273.953	171053	7.500	mg/L	
Standard6	05/10/2016	12:39:33 PM	Fe	273.953	230604	10.000	mg/L	
Standard7	05/10/2016	12:44:54 PM	Fe	273.953	437141	20.000	mg/L	0.9997

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **ICV**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10059.768	500	10000	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **CCV**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10132.989	500	10000	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **CCV**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10139.746	500	10000	0	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ICV**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10009.598	500	10000	0	100	90	110				
Iron	10336.768	20	10000	0	103	90	110				
Magnesium	10232.674	100	10000	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	196.138	500	200.0	0	98.1	80	120				
Iron	21.806	20	20.00	0	109	80	120				
Magnesium	110.566	100	100.0	0	111	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9950.981	500	10000	0	99.5	90	110				
Iron	10316.238	20	10000	0	103	90	110				
Magnesium	10425.091	100	10000	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	179.143	500	200.0	0	89.6	70	130				
Iron	19.752	20	20.00	0	98.8	70	130				
Magnesium	113.749	100	100.0	0	114	70	130				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **ICB**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9.248	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **CCB**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	67.174	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **CCB**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	45.412	500									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ICB**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-18.672913	500									
Iron	2.647	20									
Magnesium	2.318	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-36.125465	500									
Iron	-0.561561	20									
Magnesium	1.683	100									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **ICSA**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2.413	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **ICSAB**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10019.256	500	10000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **ICSA**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	32.803	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **ICSAB**	Batch ID: **R108378**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10107.715	500	10000	0	101	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSA**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	461579.927	50	500000	0	92.3	80	120				
Calcium	481697.975	500	500000	0	96.3	80	120				
Iron	161221.150	20	200000	0	80.6	80	120				
Magnesium	448645.497	100	500000	0	89.7	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSAB**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	558473.112	50	500000	0	112	80	120				
Calcium	579877.398	500	500000	0	116	80	120				
Iron	181882.538	20	200000	0	90.9	80	120				
Magnesium	520696.919	100	500000	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSA**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460500.123	50	500000	0	92.1	80	120				
Calcium	479120.818	500	500000	0	95.8	80	120				
Iron	162046.571	20	200000	0	81.0	80	120				
Magnesium	463492.303	100	500000	0	92.7	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSAB**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322675**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	557505.070	50	500000	0	112	80	120				
Calcium	584397.237	500	500000	0	117	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSAB**	Batch ID: **R108380**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322675**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	182873.286	20	200000	0	91.4	80	120				
Magnesium	537959.521	100	500000	0	108	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160510B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0066	100.66	65-125	PASS
Standard2	ICAL	1	0.99	98.58	65-125	PASS
Standard3	ICAL	1	0.98	98.36	65-125	PASS
Standard4	ICAL	1	0.97	97.26	65-125	PASS
Standard5	ICAL	1	0.96	96.15	65-125	PASS
Standard6	ICAL	1	0.96	95.55	65-125	PASS
ICV	ICV	1	0.96	95.82	65-125	PASS
ICB	ICB	1	0.97	97.24	65-125	PASS
ICSA1	ICSA	1	0.97	97.31	65-125	PASS
ICSAB1	ICSAB	1	0.95	94.99	65-125	PASS
MB-58317	MBLK	1	0.98	98.24	65-125	PASS
LCS2-58317	LCS	1	0.97	96.65	65-125	PASS
N019544-001B	SAMP	1	1.0097	100.97	65-125	PASS
N019544-002B	SAMP	1	0.96	95.89	65-125	PASS
N019544-001B	SAMP	50	0.98	98.01	65-125	PASS
N019544-002B	SAMP	50	0.97	97.087	65-125	PASS
N019544-002B	SAMP	250	0.97	97.14	65-125	PASS
N019544-002B-PS	PS	50	0.97	96.68	65-125	PASS
N019544-002B-MS2	MS	50	0.97	97.37	65-125	PASS
N019544-002B-MSD2	MSD	50	0.96	96.27	65-125	PASS
CCV1	CCV	1	0.95	95.4	65-125	PASS
CCB1	CCB	1	0.98	97.91	65-125	PASS
CCV2	CCV	1	0.95	94.93	65-125	PASS
CCB2	CCB	1	0.98	97.84	65-125	PASS
ICSA2	ICSA	1	0.98	97.97	65-125	PASS
ICSAB2	ICSAB	1	0.96	95.96	65-125	PASS

INTERNAL STANDARD: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.012	101.22	65-125	PASS
Standard2	ICAL	1	1.035	103.49	65-125	PASS
Standard3	ICAL	1	1.02	101.95	65-125	PASS
Standard4	ICAL	1	1	99.83	65-125	PASS
Standard5	ICAL	1	1.08	107.96	65-125	PASS
Standard6	ICAL	1	0.99	99.47	65-125	PASS
Standard7	ICAL	1	0.99	98.7	65-125	PASS
ICV	ICV	1	1.0064	100.64	65-125	PASS
ICB	ICB	1	1.018	101.79	65-125	PASS
LLICV	CCV1	1	1.0093	100.93	65-125	PASS
ICSA1	ICSA	1	-0.00013	-0.013	65-125	NR!
ICSA1	ICSA	1	1.046	104.58	65-125	PASS
ICSAB1	ICSAB	1	0.83	83.037	65-125	PASS
MB-58317	MBLK	1	1.0087	100.87	65-125	PASS
LCS1-58317	LCS	1	0.93	93.36	65-125	PASS
N019544-001B	SAMP	1	0.97	96.6	65-125	PASS
N019544-002B	SAMP	1	0.9	90.13	65-125	PASS
N019544-001B	SAMP	5	0.98	97.75	65-125	PASS
N019544-001B-PS	PS	1	1	99.75	65-125	PASS
N019544-001B-MS1	MS	1	0.97	97.036	65-125	PASS
N019544-001B-MSD1	MSD	1	0.98	97.64	65-125	PASS
CCV1	CCV	1	0.99	98.88	65-125	PASS
CCB1	CCB	1	1	100	65-125	PASS
LLCCV1	CCV2	1	1.0012	100.12	65-125	PASS
ICSA2	ICSA	1	1.034	103.41	65-125	PASS
ICSAB2	ICSAB	1	0.82	81.88	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019544
Test Method: EPA 200.7
Analysis Date: 05/10/16

Matrix: Groundwater
Batch No.: 58317

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Na. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019544-002B DT 250X	Sodium	ug/L	1533136	NA	1520242	0.85%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019544
Test Method: EPA 200.7
Analysis Date: 05/10/16

Matrix: Groundwater
Batch No.: 58317

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019544-002B DT 5X	Calcium	ug/L	119255.6	PASS	116373	2.48%	~~8~~ 10
N019544-002B DT 5X	Iron	ug/L	0	NA	7.140966	100.00%	~~9~~ 10
N019544-002B DT 5X	Magnesium	ug/L	25950.44	PASS	24036.09	7.96%	10

Note: NA - Not Applicable

5/16/2016

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N019544-002B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108378**
Client ID: **ZZZZZZ**	Batch ID: **58317**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1608041.702	25000	20000	1520000	439	80	120				S

Sample ID **N019544-001B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **58317**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2016**	SeqNo: **2322668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	123836.854	500	10000	116400	74.6	80	120				S
Iron	116.515	20	100.0	7.141	109	80	120				
Magnesium	31940.944	100	10000	24040	79.0	80	120				S

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108256
ASSET #: N019544

Instrument ID: IC-06
Analyst: JAS
Date Analyzed: 5/4/2016

Method:

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

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

Comments:

~~CCB5 CCB 8 > 0.02 ppb. However samples affected are 10x CCB detection~~

~~MB > 0.02ppb, however,sample is >10x the MB detection~~

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/11/2016

2nd Level Reviewer 5/16/2016 Date: _____

107

SAMPLE CALCULATION

Sample Calculation

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

FORMULA:

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

Cr^{+6}, μg/L = A * DF

where:

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

For **N019544-001A** concentration in μg/L is calculated as follows:

Cr^{+6}, μg/L = 1.201 * 1

= 1.201

Reporting result in two significant figures,

Cr^{+6}, μg/L = 1.2

ANALYSIS RUN LOG

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 mL
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 mL
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 mL
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 mL
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 mL
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 mL
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 mL
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 mL
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 mL
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 mL
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 mL
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 mL
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 mL
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160504A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/04/16 8:07 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	05/04/16 8:21 AM	Reported
12	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/04/16 8:33 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	05/04/16 8:43 AM	Reported
14	MB-R108255	MBLK	1	Hexavalent Chromium	05/04/16 8:53 AM	Reported
15	LCS-R108255	LCS	1	Hexavalent Chromium	05/04/16 9:03 AM	Reported
16	N019608-001I	SAMP	1	Hexavalent Chromium	05/04/16 9:13 AM	Reported
17	N019608-001IREP	DUP	1	Hexavalent Chromium	05/04/16 9:23 AM	Reported
18	N019597-001A	SAMP	1	Hexavalent Chromium	05/04/16 9:33 AM	Reported
19	N019597-001ADUP	DUP	1	Hexavalent Chromium	05/04/16 9:43 AM	Reported
20	N019597-001AMS	MS	1	Hexavalent Chromium	05/04/16 9:53 AM	Reported
21	N019597-001AMSD	MSD	1	Hexavalent Chromium	05/04/16 10:03 AM	Reported
22	N019597-002A	SAMP	1	Hexavalent Chromium	05/04/16 10:12 AM	Reported
23	N019593-001A	SAMP	1	Hexavalent Chromium	05/04/16 10:22 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	05/04/16 10:32 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	05/04/16 10:42 AM	Reported
26	N019593-002A	SAMP	1	Hexavalent Chromium	05/04/16 10:52 AM	Reported
27	N019593-003A	SAMP	1	Hexavalent Chromium	05/04/16 11:02 AM	Reported
28	N019593-004A	SAMP	1	Hexavalent Chromium	05/04/16 11:12 AM	Reported
29	N019542-009A	SAMP	5	Hexavalent Chromium	05/04/16 11:22 AM	Reported
30	N019542-009AMS	MS	5	Hexavalent Chromium	05/04/16 11:32 AM	Reported
31	N019542-016A	SAMP	1000	Hexavalent Chromium	05/04/16 11:42 AM	Reported
32	N019542-016AMS	MS	1000	Hexavalent Chromium	05/04/16 11:52 AM	Reported
33	N019542-017A	SAMP	1	Hexavalent Chromium	05/04/16 12:02 PM	Reported
34	N019542-017AMS	MS	1	Hexavalent Chromium	05/04/16 12:12 PM	Reported
35	N019542-018A	SAMP	1	Hexavalent Chromium	05/04/16 12:22 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	05/04/16 12:32 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	05/04/16 12:42 PM	Reported
38	N019542-018AMS	MS	1	Hexavalent Chromium	05/04/16 12:52 PM	Not Reported
39	N019542-019A	SAMP	1	Hexavalent Chromium	05/04/16 1:02 PM	Not Reported
40	N019542-019AMS	MS	1	Hexavalent Chromium	05/04/16 1:12 PM	Not Reported
41	N019542-020A	SAMP	1	Hexavalent Chromium	05/04/16 1:22 PM	Reported
42	N019542-020AMS	MS	1	Hexavalent Chromium	05/04/16 1:32 PM	Reported
43	N019614-001B	SAMP	100	Hexavalent Chromium	05/04/16 1:42 PM	Reported
44	N019614-001BMS	MS	100	Hexavalent Chromium	05/04/16 1:52 PM	Reported
45	N019614-002B	SAMP	1	Hexavalent Chromium	05/04/16 2:02 PM	Reported
46	N019614-002BMS	MS	1	Hexavalent Chromium	05/04/16 2:12 PM	Reported
47	N019617-001A	SAMP	1	Hexavalent Chromium	05/04/16 2:22 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	05/04/16 2:32 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	05/04/16 2:41 PM	Reported

INJECTION LOG: 160504A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019542-018AMS	MS	1	Hexavalent Chromium	05/04/16 2:56 PM	Reported
51	N019542-019A	SAMP	5	Hexavalent Chromium	05/04/16 3:20 PM	Reported
52	N019542-019AMS	MS	5	Hexavalent Chromium	05/04/16 3:32 PM	Reported
53	MB-R108256	MBLK	1	Hexavalent Chromium	05/04/16 3:42 PM	Reported
54	LCS-R108256	LCS	1	Hexavalent Chromium	05/04/16 3:52 PM	Reported
55	N019543-001A	SAMP	1	Hexavalent Chromium	05/04/16 4:02 PM	Reported
56	N019543-001ADUP	DUP	1	Hexavalent Chromium	05/04/16 4:12 PM	Reported
57	N019543-001AMS	MS	1	Hexavalent Chromium	05/04/16 4:22 PM	Reported
58	N019543-001AMSD	MSD	1	Hexavalent Chromium	05/04/16 4:31 PM	Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/04/16 4:41 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/04/16 4:51 PM	Reported
61	N019543-002A	SAMP	1	Hexavalent Chromium	05/04/16 5:01 PM	Reported
62	N019543-002AMS	MS	1	Hexavalent Chromium	05/04/16 5:11 PM	Reported
63	N019543-003A	SAMP	1	Hexavalent Chromium	05/04/16 5:21 PM	Reported
64	N019543-003AMS	MS	1	Hexavalent Chromium	05/04/16 5:31 PM	Reported
65	N019543-004A	SAMP	1	Hexavalent Chromium	05/04/16 5:41 PM	Reported
66	N019543-004AMS	MS	1	Hexavalent Chromium	05/04/16 5:51 PM	Not Reported
67	N019543-005A	SAMP	1	Hexavalent Chromium	05/04/16 6:01 PM	Reported
68	N019543-005AMS	MS	1	Hexavalent Chromium	05/04/16 6:11 PM	Reported
69	N019543-006A	SAMP	1	Hexavalent Chromium	05/04/16 6:21 PM	Reported
70	N019543-006AMS	MS	1	Hexavalent Chromium	05/04/16 6:31 PM	Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/04/16 6:41 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/04/16 6:51 PM	Reported
73	N019543-007A	SAMP	1	Hexavalent Chromium	05/04/16 7:01 PM	Reported
74	N019543-007AMS	MS	1	Hexavalent Chromium	05/04/16 7:11 PM	Reported
75	N019543-008A	SAMP	1	Hexavalent Chromium	05/04/16 7:21 PM	Reported
76	N019543-008AMS	MS	1	Hexavalent Chromium	05/04/16 7:31 PM	Reported
77	N019543-009A	SAMP	1	Hexavalent Chromium	05/04/16 7:41 PM	Reported
78	N019543-009AMS	MS	1	Hexavalent Chromium	05/04/16 7:51 PM	Reported
79	N019543-010A	SAMP	1	Hexavalent Chromium	05/04/16 8:01 PM	Reported
80	N019543-010AMS	MS	1	Hexavalent Chromium	05/04/16 8:11 PM	Reported
81	N019543-011A	SAMP	1	Hexavalent Chromium	05/04/16 8:21 PM	Not Reported
82	N019543-011AMS	MS	1	Hexavalent Chromium	05/04/16 8:31 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/04/16 8:41 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/04/16 8:51 PM	Reported
85	N019543-012A	SAMP	1	Hexavalent Chromium	05/04/16 9:00 PM	Reported
86	N019543-012AMS	MS	1	Hexavalent Chromium	05/04/16 9:10 PM	Reported
87	N019543-013A	SAMP	1	Hexavalent Chromium	05/04/16 9:20 PM	Reported
88	N019543-013AMS	MS	1	Hexavalent Chromium	05/04/16 9:30 PM	Reported
89	N019543-014A	SAMP	1	Hexavalent Chromium	05/04/16 9:40 PM	Reported
90	N019543-014AMS	MS	1	Hexavalent Chromium	05/04/16 9:50 PM	Reported
91	N019544-001A	SAMP	1	Hexavalent Chromium	05/04/16 10:00 PM	Reported
92	N019544-001AMS	MS	1	Hexavalent Chromium	05/04/16 10:10 PM	Reported
93	N019543-004AMS	MS	1	Hexavalent Chromium	05/04/16 10:20 PM	Reported
94	CCV-8	CCV1	1	Hexavalent Chromium	05/04/16 10:30 PM	Reported
95	CCB-8	CCB	1	Hexavalent Chromium	05/04/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160504A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/May/16 06:08:14**
No. of Injections:	**98**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/04/2016 08:07	Finished	CCV @ 5ppb, IWST-160401A
11	CCV-1,CCV,1	2	1000	Unknown		05/04/2016 08:21	Finished	CCV @ 5ppb, IWST-160401A
12	STD-0.2ppb,CCV2,1	3	1000	Unknown		05/04/2016 08:33	Finished	PQL @ 0.2 ppb
13	CCB-1,CCB,1	4	1000	Unknown		05/04/2016 08:43	Finished	CCB R160501A
14	MB-H2O,MBLK,1	5	1000	Unknown		05/04/2016 08:53	Finished	MB R160426A
15	LCS-H2O,LCS,1	6	1000	Unknown		05/04/2016 09:03	Finished	LCS(5ppb), IWST-160401B
16	N019608-001I,SAMP,1	7	1000	Unknown		05/04/2016 09:13	Finished	SAMP, 10mL
17	N019608-001IREP,DUP,1	8	1000	Unknown		05/04/2016 09:23	Finished	DUP, 10mL
18	N019597-001A,SAMP,1	9	1000	Unknown		05/04/2016 09:33	Finished	SAMP, 10mL
19	N019597-001ADUP,DUP,1	10	1000	Unknown		05/04/2016 09:43	Finished	DUP, 10mL
20	N019597-001AMS,MS,1	11	1000	Unknown		05/04/2016 09:53	Finished	MS (5ppb), IWST-160401B, 10 ml
21	N019597-001AMSD,MSD,1	12	1000	Unknown		05/04/2016 10:03	Finished	MSD (5ppb), IWST-160401B, 10 r
22	N019597-002A,SAMP,1	13	1000	Unknown		05/04/2016 10:12	Finished	SAMP, 10mL
23	N019593-001A,SAMP,1	14	1000	Unknown		05/04/2016 10:22	Finished	SAMP, 10mL
24	CCV-2,CCV1,1	15	1000	Unknown		05/04/2016 10:32	Finished	CCV @ 10ppb, IWST-160401A
25	CCB-2,CCB,1	16	1000	Unknown		05/04/2016 10:42	Finished	CCB
26	N019593-002A,SAMP,1	17	1000	Unknown		05/04/2016 10:52	Finished	SAMP, 10mL
27	N019593-003A,SAMP,1	18	1000	Unknown		05/04/2016 11:02	Finished	SAMP, 10mL
28	N019593-004A,SAMP,1	19	1000	Unknown		05/04/2016 11:12	Finished	SAMP, 10mL
29	N019542-009A,SAMP,5	20	1000	Unknown		05/04/2016 11:22	Finished	SAMP, 2.0>10mL
30	N019542-009AMS,MS,5	21	1000	Unknown		05/04/2016 11:32	Finished	MS (5ppb), IWST-160401B, 2.0>1
31	N019542-016A,SAMP,1000	22	1000	Unknown		05/04/2016 11:42	Finished	SAMP, 10uL> 10mL
32	N019542-016AMS,MS,1000	23	1000	Unknown		05/04/2016 11:52	Finished	MS (5ppb), IWST-160401B, 10uL>
33	N019542-017A,SAMP,1	24	1000	Unknown		05/04/2016 12:02	Finished	SAMP, 10mL
34	N019542-017AMS,MS,1	25	1000	Unknown		05/04/2016 12:12	Finished	MS (1ppb), IWST-160401B, 10 ml
35	N019542-018A,SAMP,1	26	1000	Unknown		05/04/2016 12:22	Finished	SAMP, 10mL
36	CCV-3,CCV,1	27	1000	Unknown		05/04/2016 12:32	Finished	CCV @ 5ppb, IWST-160401A
37	CCB-3,CCB,1	28	1000	Unknown		05/04/2016 12:42	Finished	CCB
38	N019542-018AMS,MS,1	29	1000	Unknown		05/04/2016 12:52	Finished	MS (1ppb), IWST-160401B, 10 ml
39	N019542-019A,SAMP,1	30	1000	Unknown		05/04/2016 13:02	Finished	SAMP, 10mL
40	N019542-019AMS,MS,1	31	1000	Unknown		05/04/2016 13:12	Finished	MS (1ppb), IWST-160401B, 10 ml
41	N019542-020A,SAMP,1	32	1000	Unknown		05/04/2016 13:22	Finished	SAMP, 10mL
42	N019542-020AMS,MS,1	33	1000	Unknown		05/04/2016 13:32	Finished	MS (1ppb), IWST-160401B, 10 ml
43	N019614-001B,SAMP,100	34	1000	Unknown		05/04/2016 13:42	Finished	SAMP, 0.10>10mL
44	N019614-001BMS,MS,100	35	1000	Unknown		05/04/2016 13:52	Finished	MS (5ppb), IWST-160401B, 0.10>
45	N019614-002B,SAMP,1	36	1000	Unknown		05/04/2016 14:02	Finished	SAMP, 10mL
46	N019614-002BMS,MS,1	37	1000	Unknown		05/04/2016 14:12	Finished	MS (1ppb), IWST-160401B, 10 ml
47	N019617-001A,SAMP,1	38	1000	Unknown		05/04/2016 14:22	Finished	SAMP, 10mL
48	CCV-4,CCV1,1	39	1000	Unknown		05/04/2016 14:32	Finished	CCV @ 10ppb, IWST-160401A
49	CCB-4,CCB,1	40	1000	Unknown		05/04/2016 14:41	Finished	CCB
50	N019542-018AMS,MS,1	1	1000	Unknown		05/04/2016 14:56	Finished	MS (1ppb), IWST-160401B, 10 ml
51	N019542-019A,SAMP,5	2	1000	Unknown		05/04/2016 15:20	Finished	SAMP, 2.0> 10mL
52	N019542-019AMS,MS,5	3	1000	Unknown		05/04/2016 15:32	Finished	MS (5ppb), IWST-160401B, 2.0>1
53	MB-H2O,MBLK,1	4	1000	Unknown		05/04/2016 15:42	Finished	MB R160426A
54	LCS-H2O,LCS,1	5	1000	Unknown		05/04/2016 15:52	Finished	LCS(5ppb), IWST-160401B
55	N019543-001A,SAMP,1	6	1000	Unknown		05/04/2016 16:02	Finished	SAMP, 10mL
56	N019543-001ADUP,DUP,1	7	1000	Unknown		05/04/2016 16:12	Finished	DUP, 10mL
57	N019543-001AMS,MS,1	8	1000	Unknown		05/04/2016 16:22	Finished	MS (1ppb), IWST-160401B, 10 ml
58	N019543-001AMSD,MSD,1	9	1000	Unknown		05/04/2016 16:31	Finished	MSD (1ppb), IWST-160401B, 10 r
59	CCV-5,CCV,1	11	1000	Unknown		05/04/2016 16:41	Finished	CCV @ 5ppb, IWST-160401A
60	CCB-5,CCB,1	12	1000	Unknown		05/04/2016 16:51	Finished	CCB
61	N019543-002A,SAMP,1	13	1000	Unknown		05/04/2016 17:01	Finished	SAMP, 10mL
62	N019543-002AMS,MS,1	14	1000	Unknown		05/04/2016 17:11	Finished	MS (1ppb), IWST-160401B, 10 ml
63	N019543-003A,SAMP,1	15	1000	Unknown		05/04/2016 17:21	Finished	SAMP, 10mL
64	N019543-003AMS,MS,1	16	1000	Unknown		05/04/2016 17:31	Finished	MS (1ppb), IWST-160401B, 10 ml
65	N019543-004A,SAMP,1	17	1000	Unknown		05/04/2016 17:41	Finished	SAMP, 10mL
66	N019543-004AMS,MS,1	18	1000	Unknown		05/04/2016 17:51	Finished	MS (1ppb), IWST-160401B, 10 ml
67	N019543-005A,SAMP,1	19	1000	Unknown		05/04/2016 18:01	Finished	SAMP, 10mL
68	N019543-005AMS,MS,1	20	1000	Unknown		05/04/2016 18:11	Finished	MS (1ppb), IWST-160401B, 10 ml
69	N019543-006A,SAMP,1	21	1000	Unknown		05/04/2016 18:21	Finished	SAMP, 10mL
70	N019543-006AMS,MS,1	22	1000	Unknown		05/04/2016 18:31	Finished	MS (1ppb), IWST-160401B, 10 ml

71	CCV-6,CCV1,1	23	1000	Unknown		05/04/2016 18:41	Finished	CCV @ 10ppb, IWST-160401A
72	CCB-6,CCB,1	24	1000	Unknown		05/04/2016 18:51	Finished	CCB
73	N019543-007A,SAMP,1	25	1000	Unknown		05/04/2016 19:01	Finished	SAMP, 10mL
74	N019543-007AMS,MS,1	26	1000	Unknown		05/04/2016 19:11	Finished	MS (1ppb), IWST-160401B, 10 mL
75	N019543-008A,SAMP,1	27	1000	Unknown		05/04/2016 19:21	Finished	SAMP, 10mL
76	N019543-008AMS,MS,1	28	1000	Unknown		05/04/2016 19:31	Finished	MS (1ppb), IWST-160401B, 10 mL
77	N019543-009A,SAMP,1	29	1000	Unknown		05/04/2016 19:41	Finished	SAMP, 10mL
78	N019543-009AMS,MS,1	30	1000	Unknown		05/04/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 mL
79	N019543-010A,SAMP,1	31	1000	Unknown		05/04/2016 20:01	Finished	SAMP, 10mL
80	N019543-010AMS,MS,1	32	1000	Unknown		05/04/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 mL
81	N019543-011A,SAMP,1	33	1000	Unknown		05/04/2016 20:21	Finished	SAMP, 10mL
82	N019543-011AMS,MS,1	34	1000	Unknown		05/04/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 mL
83	CCV-7,CCV,1	35	1000	Unknown		05/04/2016 20:41	Finished	CCV @ 5ppb, IWST-160401A
84	CCB-7,CCB,1	36	1000	Unknown		05/04/2016 20:51	Finished	CCB
85	N019543-012A,SAMP,1	37	1000	Unknown		05/04/2016 21:00	Finished	SAMP, 10mL
86	N019543-012AMS,MS,1	38	1000	Unknown		05/04/2016 21:10	Finished	MS (1ppb), IWST-160401B, 10 mL
87	N019543-013A,SAMP,1	39	1000	Unknown		05/04/2016 21:20	Finished	SAMP, 10mL
88	N019543-013AMS,MS,1	40	1000	Unknown		05/04/2016 21:30	Finished	MS (1ppb), IWST-160401B, 10 mL
89	N019543-014A,SAMP,1	41	1000	Unknown		05/04/2016 21:40	Finished	SAMP, 10mL
90	N019543-014AMS,MS,1	42	1000	Unknown		05/04/2016 21:50	Finished	MS (1ppb), IWST-160401B, 10 mL
91	N019544-001A,SAMP,1	43	1000	Unknown		05/04/2016 22:00	Finished	SAMP, 10mL
92	N019544-001AMS,MS,1	44	1000	Unknown		05/04/2016 22:10	Finished	MS (1ppb), IWST-160401B, 10 mL
93	N019543-004AMS,MS,1	45	1000	Unknown		05/04/2016 22:20	Finished	MS (1ppb), IWST-160401B, 10 mL
94	CCV-8-CCV1,1	46	1000	Unknown		05/04/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
95	CCB-8-CCB,1	47	1000	Unknown		05/04/2016 22:40	Finished	CCB R160331B
96	SHUTDOWN	48	1000	Unknown		05/04/2016 22:50	Finished	
97	Eluent: R160503A	49	1000	Unknown		n.a.	Finished	Eluent
98	PCR: R160504A	50	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/28/16
Time Prepared: 4:15
Prepared By: JAS

slope: 99.2
pH 7: 7.01
4: 4.02
10: 10.04
LCS: 7.04

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINN - 160125H
NH4OH + NH4SO4 eluent: R160503A
NH4OH + NH4SO4 buffer: R160426A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO19543-9A(3of3)	9.30	-	-	-	-	R160426A
2)	-10A (1of3)	9.29	9.37	~250 mL	~250 mL	+1 drop 6N NaOH	
3)	-10A (2of3)	9.40	-	-	-	-	
4)	-10A (3of3)	9.31	-	-	-	-	
5)	-11A (1of3)	9.34	-	-	-	-	
6)	-11A (2of3)	9.34	-	-	-	-	
7)	-11A (3of3)	9.35	-	-	-	-	
8)	-12A (1of3)	9.35	-	-	-	-	
9)	-12A (2of3)	9.38	-	-	-	-	
10)	-12A (3of3)	9.39	-	-	-	-	
11)	-13A (1of3)	9.35	-	-	-	-	
12)	-13A (2of3)	9.33	-	-	-	-	
13)	-13A (3of3)	9.33	-	-	-	-	
14)	-14A (1of3)	9.33	-	-	-	-	
15)	-14A (2of3)	9.31	-	-	-	-	
	-14A (3of3)	9.31	-	-	-	-	

Sample Preparation

Date Prepared: 4/28/16
Time Prepared: 4:15
Prepared By: JAS

same

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINN-160125H
NH4OH + NH4SO4 eluent: R160503A
NH4OH + NH4SO4 buffer: R160426A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO19544-1A	9.26	9.33	~250mL	~250mL	+1 drop 6N NaOH	R160331B
2)	-2A	9.21	9.34	~250mL	~250 mL	+2 drops 6N NaOH	
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 10

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-06
Date Calibrated: 5/2/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0499	0.2341	1.1728	2.3399	3.5237	4.6638	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ICV**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2315654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.008	0.20	5.000	0	100	90	110				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2315655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.213	0.20	0.2000	0	107	80	120				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.187	0.20	0.2000	0	93.4	80	120				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.934	0.20	10.00	0	99.3	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCV**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	95	105				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.110	0.20	10.00	0	101	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCV**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.071	0.20	5.000	0	101	95	105				

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ZZZZZZ**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.980	0.20	10.00	0	99.8	95	105				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **ICB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2315656**

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

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315659**

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

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315667**

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

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.011	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315691**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108256**
Client ID: **CCB**	Batch ID: **R108256**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2016**	SeqNo: **2315702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.005	0.20									

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/4/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.117	
CCV-2	5.100	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.100	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
MB-R108255	N.A.	N.A.
LCS-R108255	5.108	PASS
N019608-001I	5.100	PASS
N019608-001IREP	5.083	PASS
N019597-001A	5.100	PASS
N019597-001ADUP	5.100	PASS
N019597-001AMS	5.100	PASS
N019597-001AMSD	5.100	PASS
N019597-002A	5.108	PASS
N019593-001A	5.100	PASS
N019593-002A	5.117	PASS
N019593-003A	5.108	PASS
N019593-004A	5.108	PASS
N019542-009A	5.058	PASS
N019542-009AMS	5.058	PASS
N019542-016A	5.108	PASS
N019542-016AMS	5.100	PASS
N019542-017A	5.108	PASS
N019542-017AMS	5.108	PASS
N019542-018A	5.108	PASS
N019542-018AMS	5.108	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/4/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.117	
CCV-2	5.100	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.100	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019542-019A	5.008	PASS
N019542-019AMS	5.008	PASS
N019542-020A	5.108	PASS
N019542-020AMS	5.100	PASS
N019614-001B	5.108	PASS
N019614-001BMS	5.108	PASS
N019614-002B	4.975	PASS
N019614-002BMS	4.975	PASS
N019617-001A	5.092	PASS
N019542-018AMS	5.117	PASS
N019542-019A	5.092	PASS
N019542-019AMS	5.092	PASS
MB-R108256	5.117	PASS
LCS-R108256	5.108	PASS
N019543-001A	5.108	PASS
N019543-001ADUP	5.100	PASS
N019543-001AMS	5.100	PASS
N019543-001AMSD	5.108	PASS
N019543-002A	5.108	PASS
N019543-002AMS	5.108	PASS
N019543-003A	5.108	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/4/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.117	
CCV-2	5.100	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.100	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019543-003AMS	5.100	PASS
N019543-004A	5.125	PASS
N019543-004AMS	5.108	PASS
N019543-005A	5.100	PASS
N019543-005AMS	5.108	PASS
N019543-006A	5.100	PASS
N019543-006AMS	5.100	PASS
N019543-007A	5.108	PASS
N019543-007AMS	5.100	PASS
N019543-008A	5.108	PASS
N019543-008AMS	5.100	PASS
N019543-009A	5.042	PASS
N019543-009AMS	5.100	PASS
N019543-010A	5.092	PASS
N019543-010AMS	5.100	PASS
N019543-011A	5.100	PASS
N019543-011AMS	5.100	PASS
N019543-012A	5.108	PASS
N019543-012AMS	5.100	PASS
N019543-013A	5.108	PASS
N019543-013AMS	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/4/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.117	
CCV-2	5.100	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.100	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019543-014A	5.117	PASS
N019543-014AMS	5.100	PASS
N019544-001A	5.058	PASS
N019544-001AMS	5.058	PASS
N019543-004AMS	5.100	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

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

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

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

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

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

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 ml
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 ml
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 ml
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 ml
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 ml
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 ml
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 ml
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 ml
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 ml
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 ml
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 ml
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 ml
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 ml
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

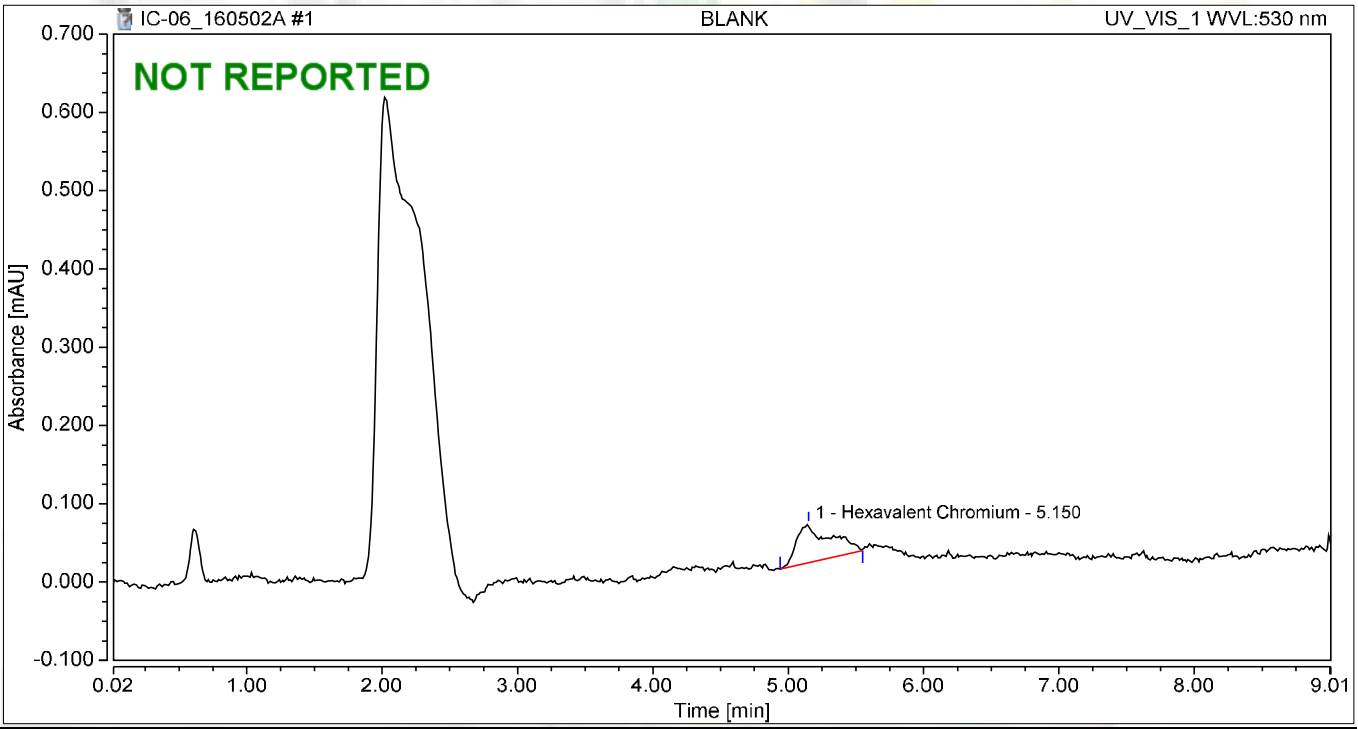
71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

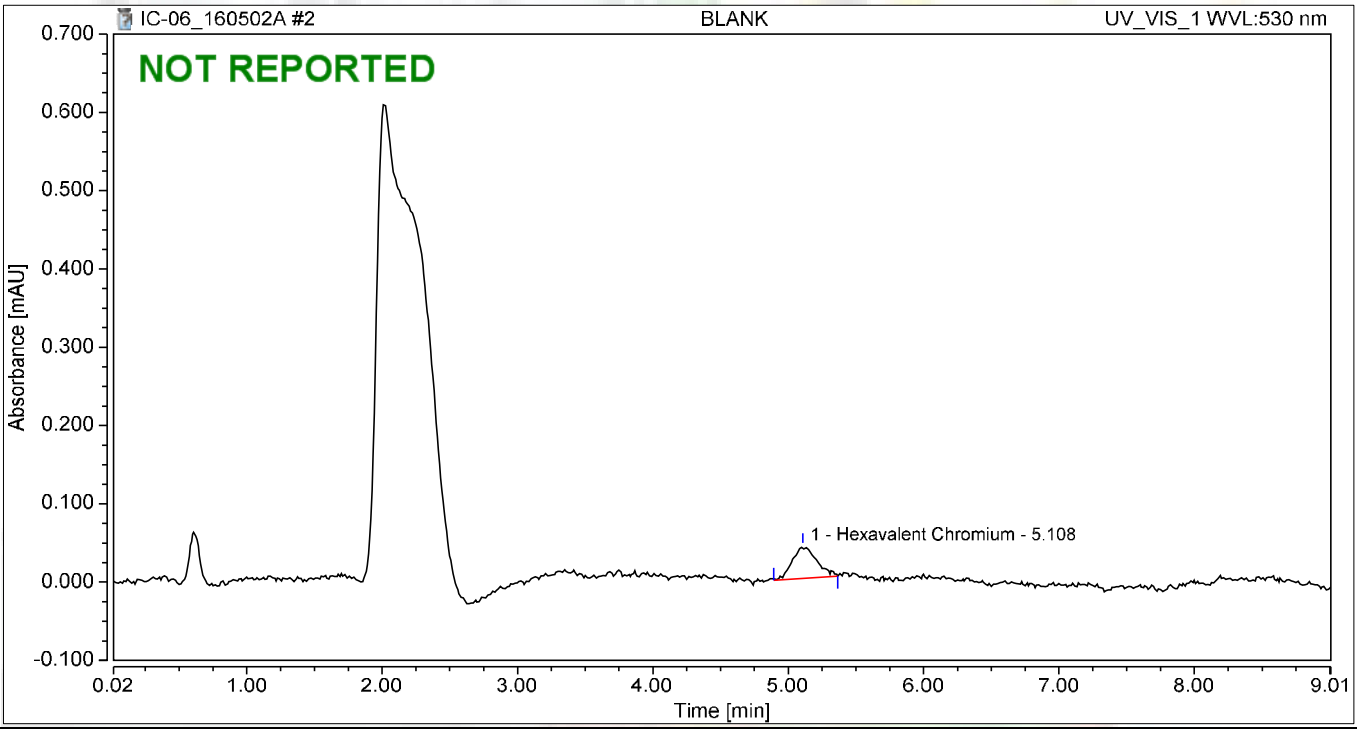
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.014	0.049	100.00	100.00	0.0418
Total:			**0.014**	**0.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

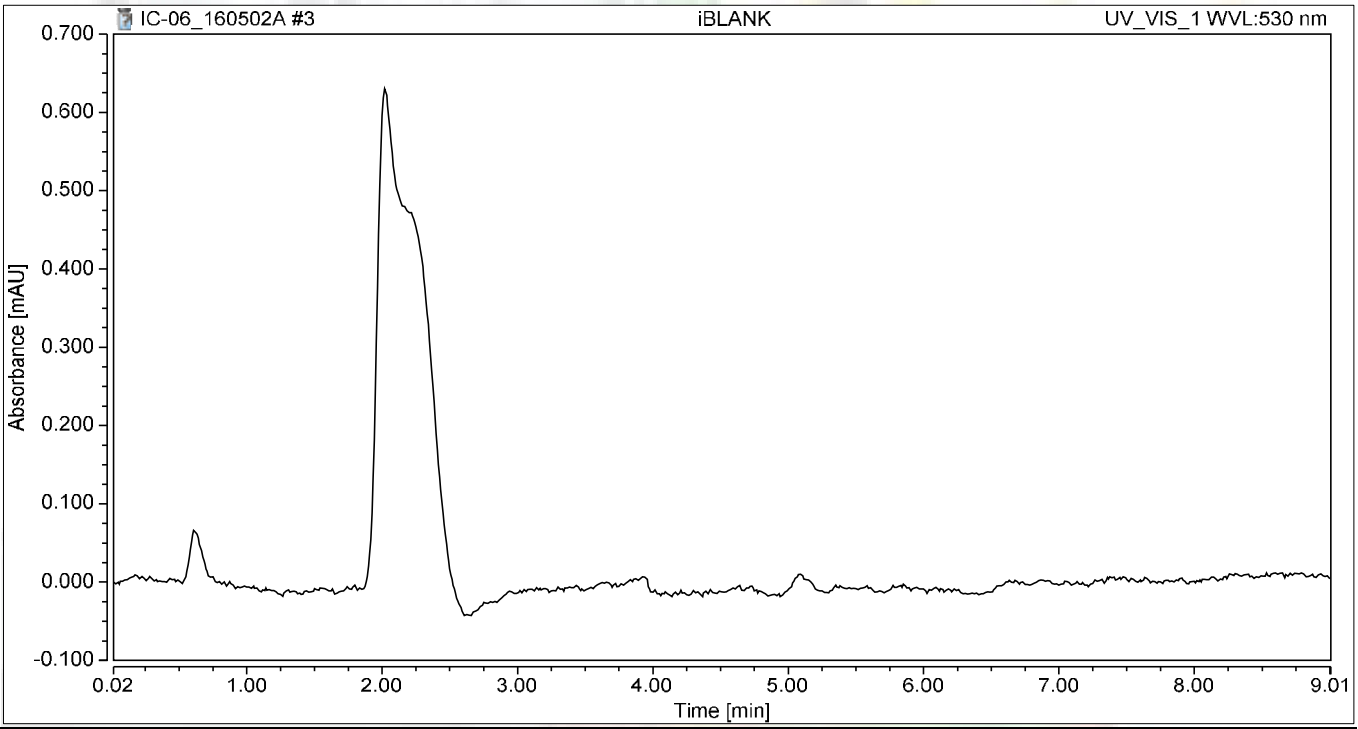
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.008	0.041	100.00	100.00	0.0183
Total:			**0.008**	**0.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

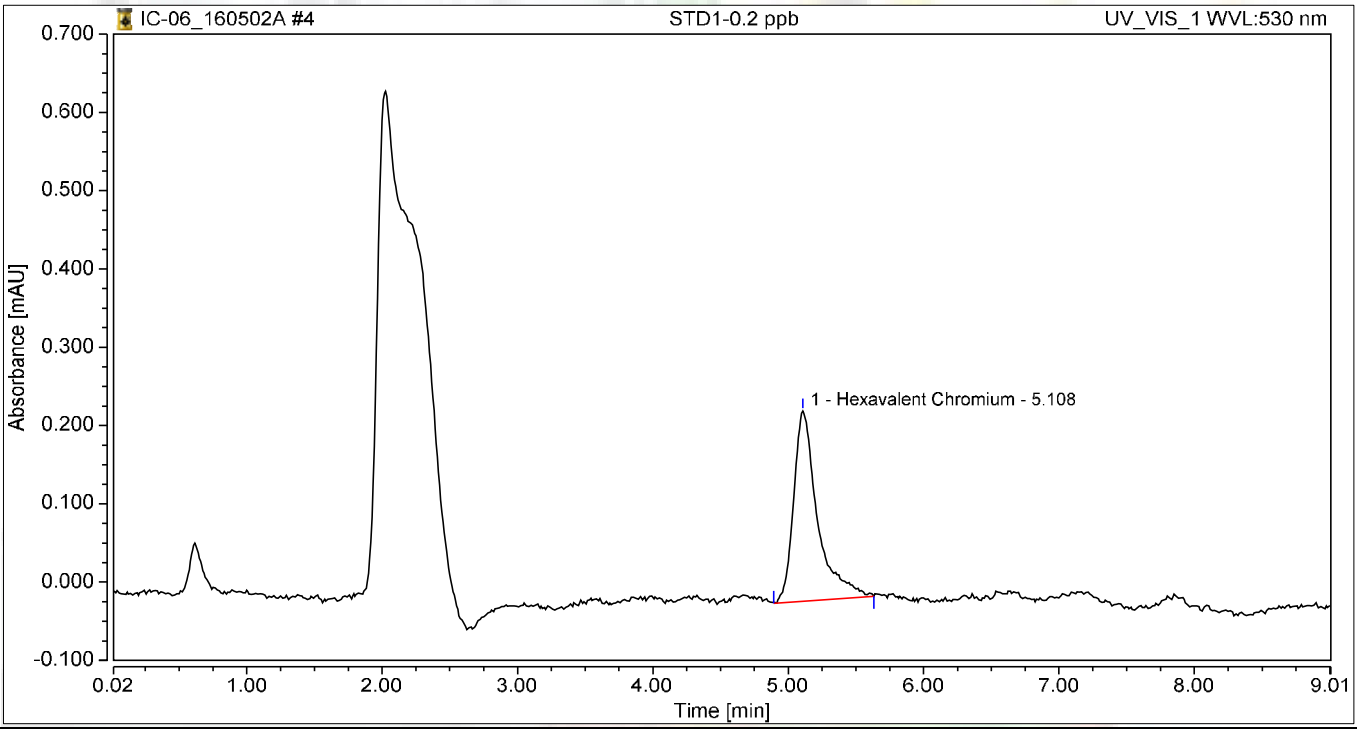
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

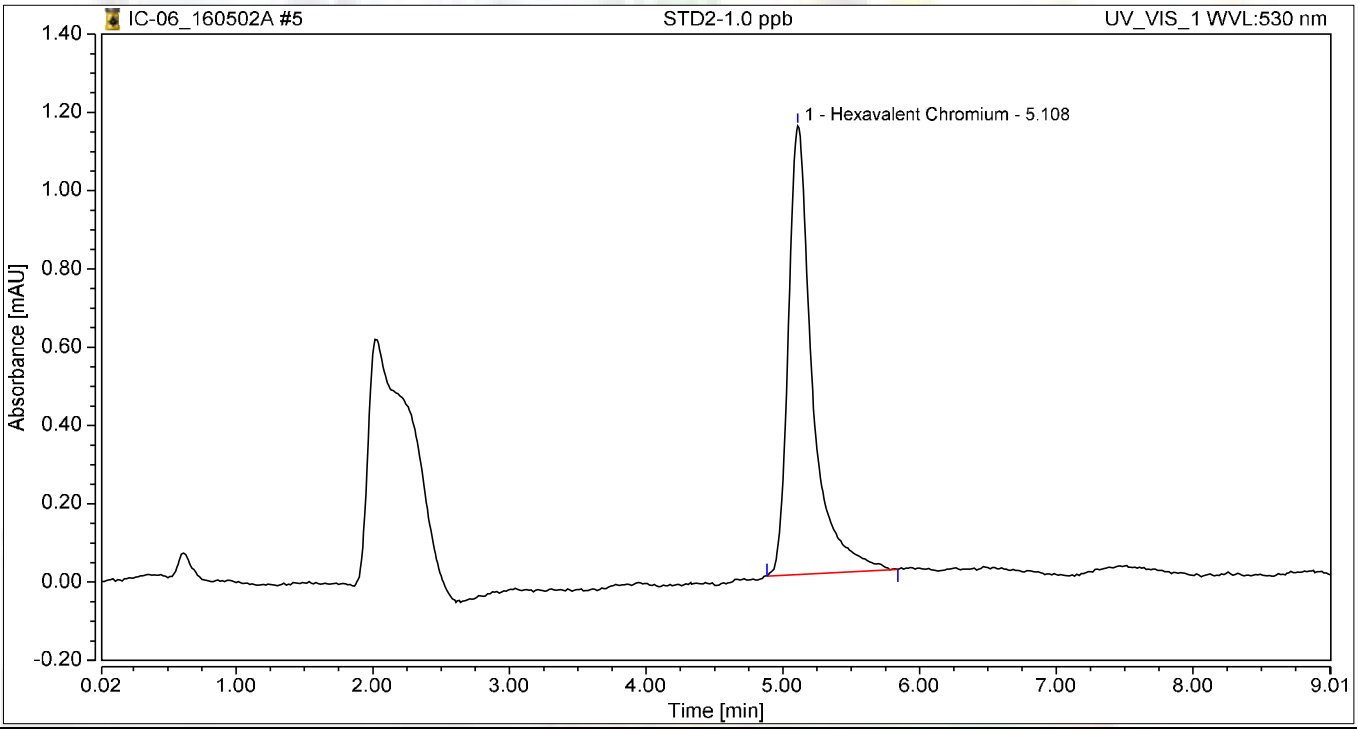
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.050	0.243	100.00	100.00	0.1956
Total:			**0.050**	**0.243**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

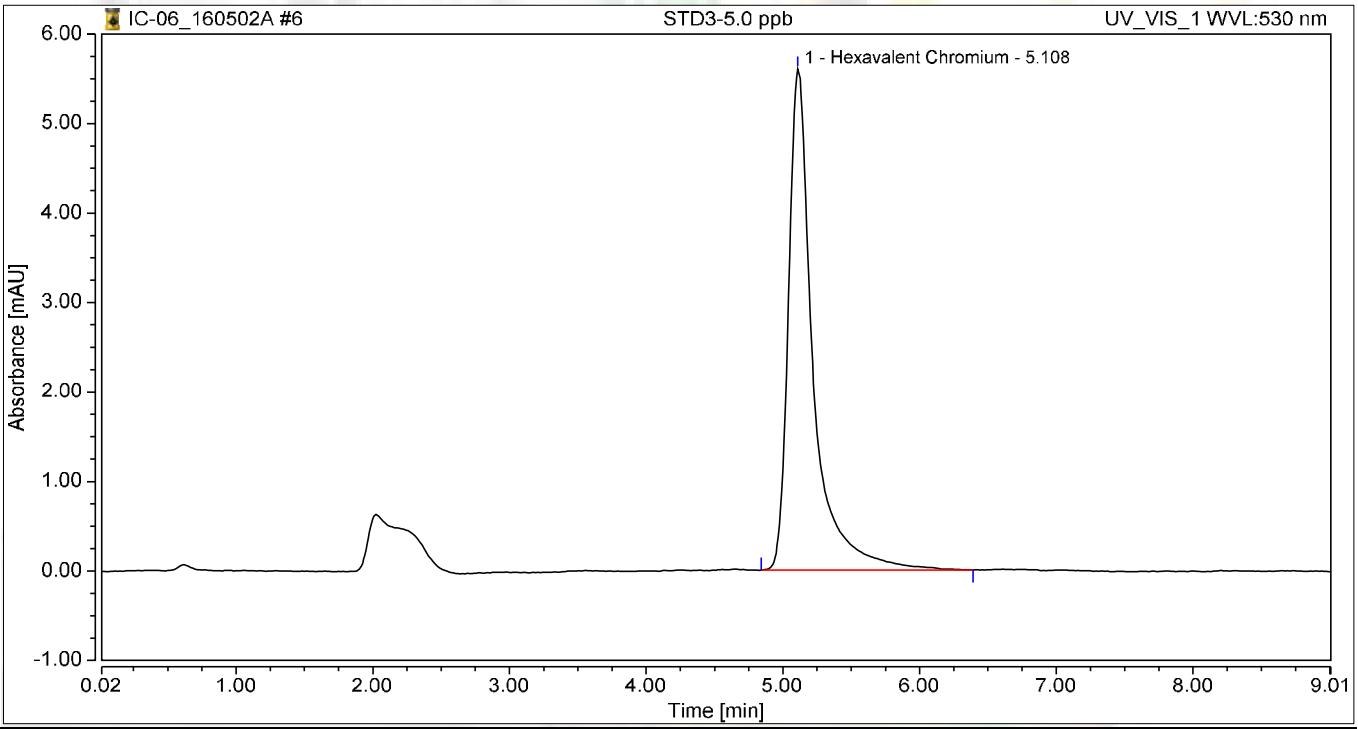
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.234	1.147	100.00	100.00	0.9843
Total:			**0.234**	**1.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

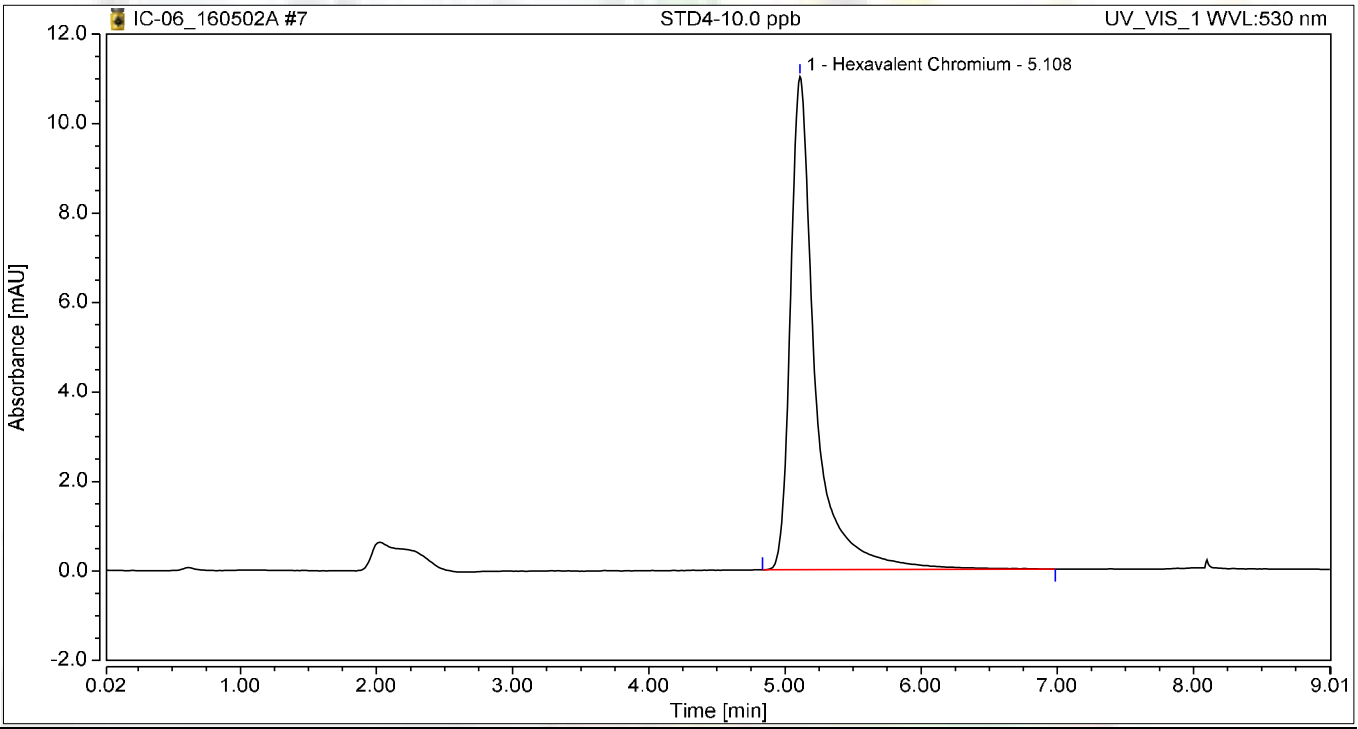
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.173	5.600	100.00	100.00	5.0033
Total:			**1.173**	**5.600**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

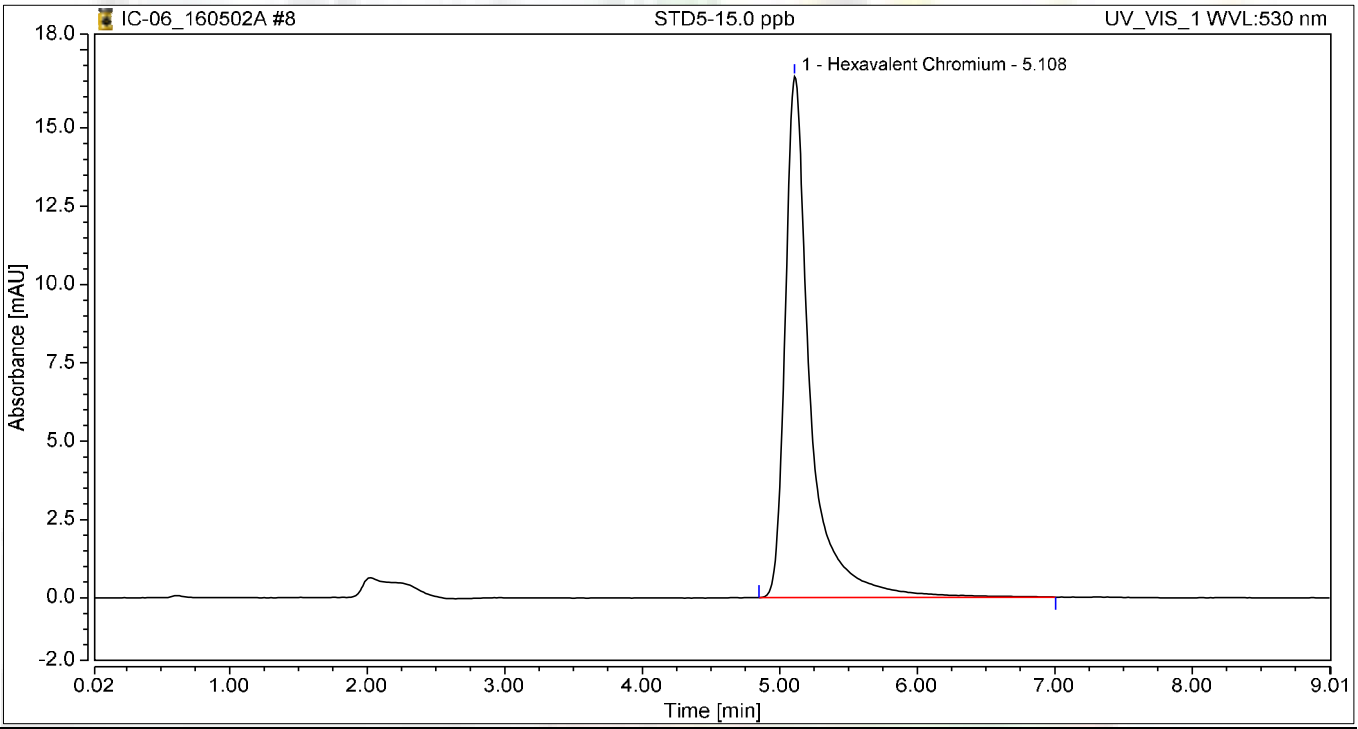
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.340	11.026	100.00	100.00	9.9997
Total:			**2.340**	**11.026**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

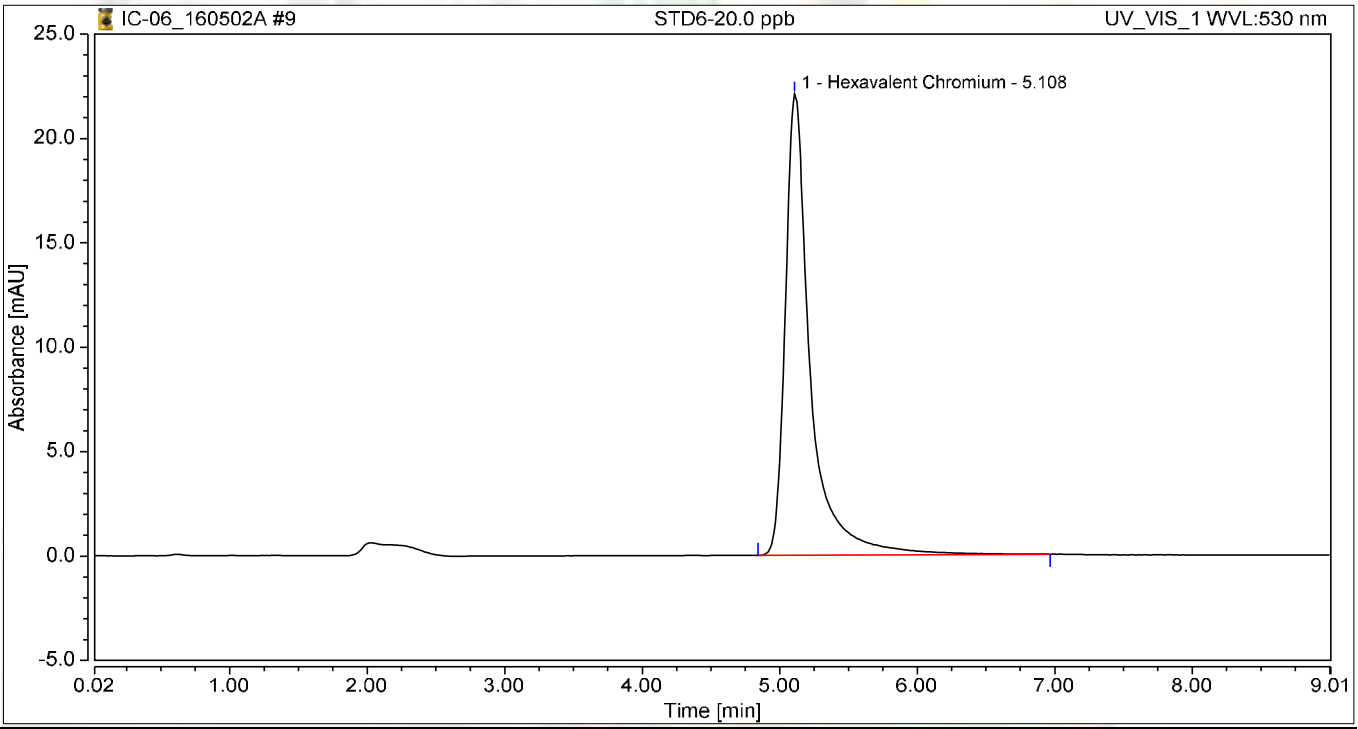
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	3.524	16.642	100.00	100.00	15.0679
Total:			**3.524**	**16.642**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**07**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



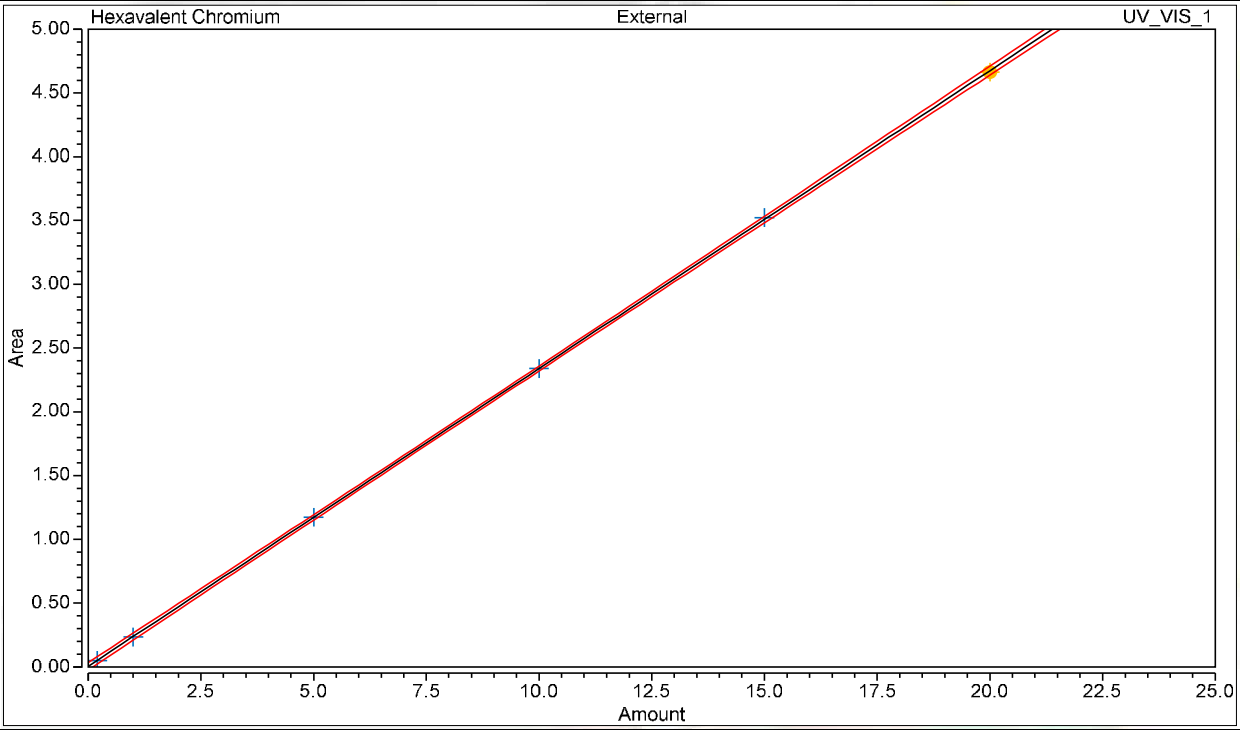
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	4.664	22.077	100.00	100.00	19.9492
Total:			**4.664**	**22.077**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin, WithOffset	*Offset (C0)*	0.0042
Evaluation Type	Area	*Slope (C1)*	0.2336
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

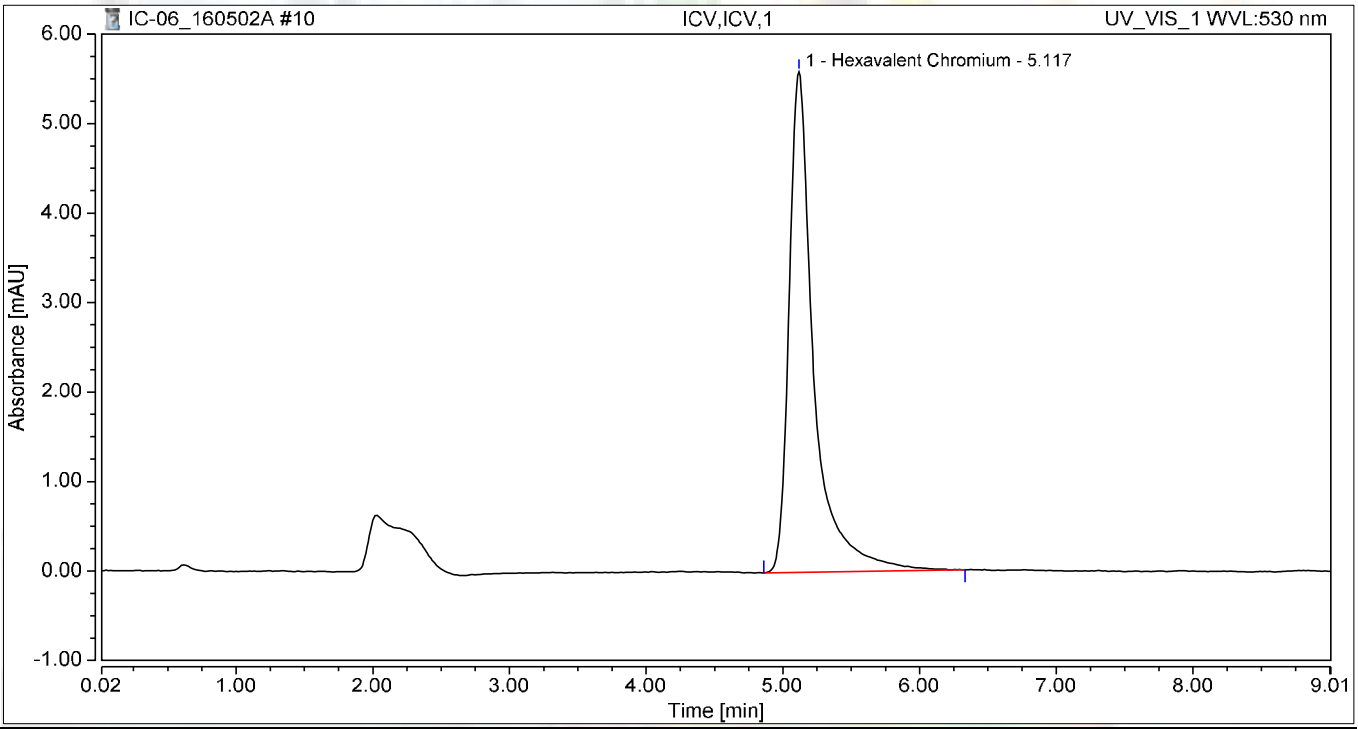
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	02	0.2000	0.0499	0.050	0.243
5	STD2-1.0 ppb	03	1.0000	0.2341	0.234	1.147
6	STD3-5.0 ppb	04	5.0000	1.1728	1.173	5.600
7	STD4-10.0 ppb	05	10.0000	2.3399	2.340	11.026
8	STD5-15.0 ppb	06	15.0000	3.5237	3.524	16.642
9	STD6-20.0 ppb	07	20.0000	4.6638	4.664	22.077

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

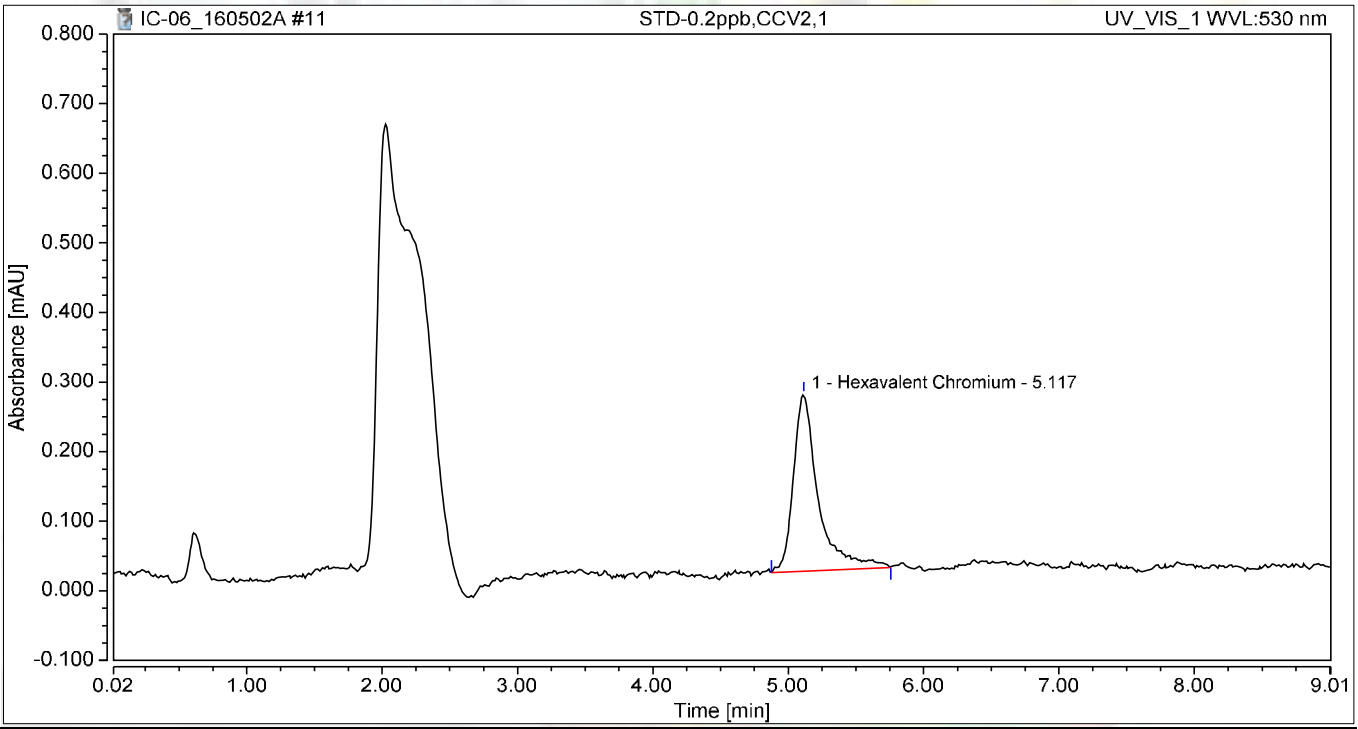
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	1.174	5.596	100.00	100.00	5.0075
Total:			**1.174**	**5.596**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

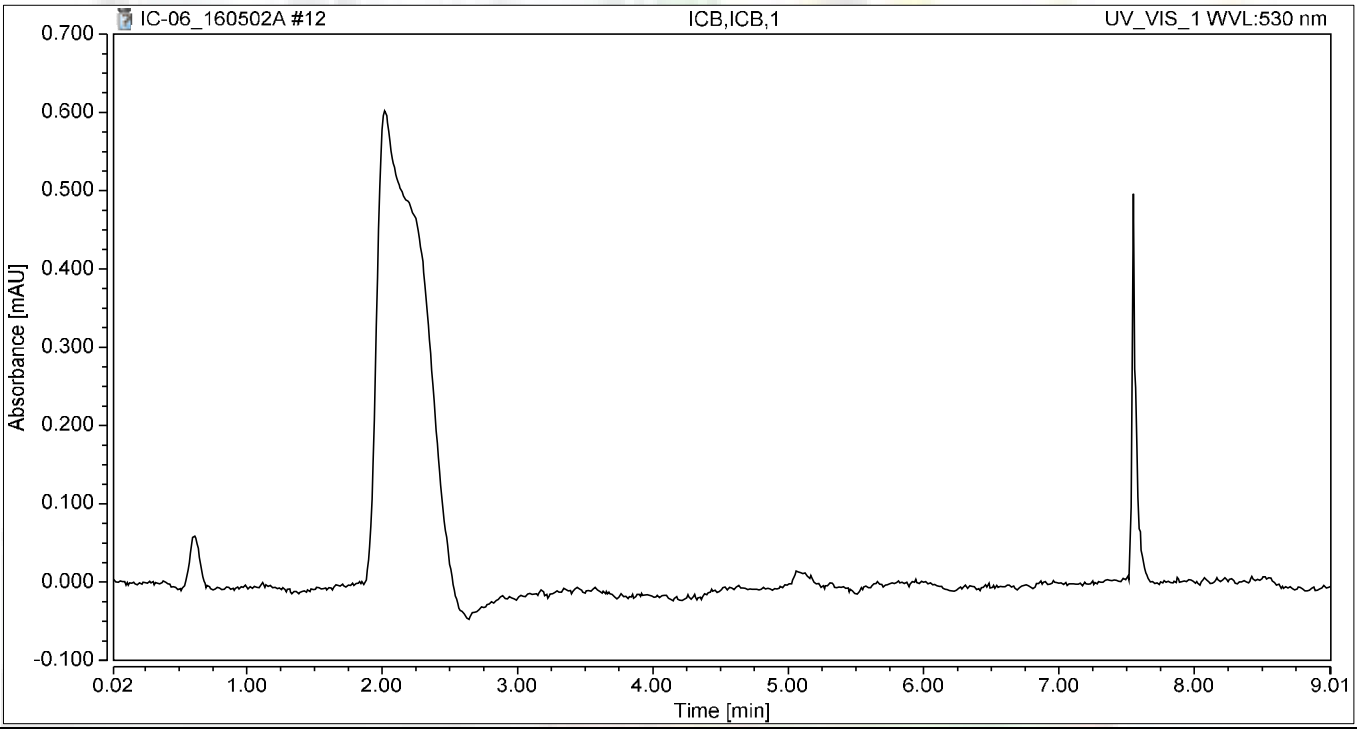
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.054	0.254	100.00	100.00	0.2134
Total:			**0.054**	**0.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

RAW DATA

INJECTION LOG: 160504A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/04/16 8:07 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	05/04/16 8:21 AM	Reported
12	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/04/16 8:33 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	05/04/16 8:43 AM	Reported
14	MB-R108255	MBLK	1	Hexavalent Chromium	05/04/16 8:53 AM	Reported
15	LCS-R108255	LCS	1	Hexavalent Chromium	05/04/16 9:03 AM	Reported
16	N019608-001I	SAMP	1	Hexavalent Chromium	05/04/16 9:13 AM	Reported
17	N019608-001IREP	DUP	1	Hexavalent Chromium	05/04/16 9:23 AM	Reported
18	N019597-001A	SAMP	1	Hexavalent Chromium	05/04/16 9:33 AM	Reported
19	N019597-001ADUP	DUP	1	Hexavalent Chromium	05/04/16 9:43 AM	Reported
20	N019597-001AMS	MS	1	Hexavalent Chromium	05/04/16 9:53 AM	Reported
21	N019597-001AMSD	MSD	1	Hexavalent Chromium	05/04/16 10:03 AM	Reported
22	N019597-002A	SAMP	1	Hexavalent Chromium	05/04/16 10:12 AM	Reported
23	N019593-001A	SAMP	1	Hexavalent Chromium	05/04/16 10:22 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	05/04/16 10:32 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	05/04/16 10:42 AM	Reported
26	N019593-002A	SAMP	1	Hexavalent Chromium	05/04/16 10:52 AM	Reported
27	N019593-003A	SAMP	1	Hexavalent Chromium	05/04/16 11:02 AM	Reported
28	N019593-004A	SAMP	1	Hexavalent Chromium	05/04/16 11:12 AM	Reported
29	N019542-009A	SAMP	5	Hexavalent Chromium	05/04/16 11:22 AM	Reported
30	N019542-009AMS	MS	5	Hexavalent Chromium	05/04/16 11:32 AM	Reported
31	N019542-016A	SAMP	1000	Hexavalent Chromium	05/04/16 11:42 AM	Reported
32	N019542-016AMS	MS	1000	Hexavalent Chromium	05/04/16 11:52 AM	Reported
33	N019542-017A	SAMP	1	Hexavalent Chromium	05/04/16 12:02 PM	Reported
34	N019542-017AMS	MS	1	Hexavalent Chromium	05/04/16 12:12 PM	Reported
35	N019542-018A	SAMP	1	Hexavalent Chromium	05/04/16 12:22 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	05/04/16 12:32 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	05/04/16 12:42 PM	Reported
38	N019542-018AMS	MS	1	Hexavalent Chromium	05/04/16 12:52 PM	Not Reported
39	N019542-019A	SAMP	1	Hexavalent Chromium	05/04/16 1:02 PM	Not Reported
40	N019542-019AMS	MS	1	Hexavalent Chromium	05/04/16 1:12 PM	Not Reported
41	N019542-020A	SAMP	1	Hexavalent Chromium	05/04/16 1:22 PM	Reported
42	N019542-020AMS	MS	1	Hexavalent Chromium	05/04/16 1:32 PM	Reported
43	N019614-001B	SAMP	100	Hexavalent Chromium	05/04/16 1:42 PM	Reported
44	N019614-001BMS	MS	100	Hexavalent Chromium	05/04/16 1:52 PM	Reported
45	N019614-002B	SAMP	1	Hexavalent Chromium	05/04/16 2:02 PM	Reported
46	N019614-002BMS	MS	1	Hexavalent Chromium	05/04/16 2:12 PM	Reported
47	N019617-001A	SAMP	1	Hexavalent Chromium	05/04/16 2:22 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	05/04/16 2:32 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	05/04/16 2:41 PM	Reported

5/12/2016

INJECTION LOG: 160504A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019542-018AMS	MS	1	Hexavalent Chromium	05/04/16 2:56 PM	Reported
51	N019542-019A	SAMP	5	Hexavalent Chromium	05/04/16 3:20 PM	Reported
52	N019542-019AMS	MS	5	Hexavalent Chromium	05/04/16 3:32 PM	Reported
53	MB-R108256	MBLK	1	Hexavalent Chromium	05/04/16 3:42 PM	Reported
54	LCS-R108256	LCS	1	Hexavalent Chromium	05/04/16 3:52 PM	Reported
55	N019543-001A	SAMP	1	Hexavalent Chromium	05/04/16 4:02 PM	Reported
56	N019543-001ADUP	DUP	1	Hexavalent Chromium	05/04/16 4:12 PM	Reported
57	N019543-001AMS	MS	1	Hexavalent Chromium	05/04/16 4:22 PM	Reported
58	N019543-001AMSD	MSD	1	Hexavalent Chromium	05/04/16 4:31 PM	Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/04/16 4:41 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/04/16 4:51 PM	Reported
61	N019543-002A	SAMP	1	Hexavalent Chromium	05/04/16 5:01 PM	Reported
62	N019543-002AMS	MS	1	Hexavalent Chromium	05/04/16 5:11 PM	Reported
63	N019543-003A	SAMP	1	Hexavalent Chromium	05/04/16 5:21 PM	Reported
64	N019543-003AMS	MS	1	Hexavalent Chromium	05/04/16 5:31 PM	Reported
65	N019543-004A	SAMP	1	Hexavalent Chromium	05/04/16 5:41 PM	Reported
66	N019543-004AMS	MS	1	Hexavalent Chromium	05/04/16 5:51 PM	Not Reported
67	N019543-005A	SAMP	1	Hexavalent Chromium	05/04/16 6:01 PM	Reported
68	N019543-005AMS	MS	1	Hexavalent Chromium	05/04/16 6:11 PM	Reported
69	N019543-006A	SAMP	1	Hexavalent Chromium	05/04/16 6:21 PM	Reported
70	N019543-006AMS	MS	1	Hexavalent Chromium	05/04/16 6:31 PM	Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/04/16 6:41 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/04/16 6:51 PM	Reported
73	N019543-007A	SAMP	1	Hexavalent Chromium	05/04/16 7:01 PM	Reported
74	N019543-007AMS	MS	1	Hexavalent Chromium	05/04/16 7:11 PM	Reported
75	N019543-008A	SAMP	1	Hexavalent Chromium	05/04/16 7:21 PM	Reported
76	N019543-008AMS	MS	1	Hexavalent Chromium	05/04/16 7:31 PM	Reported
77	N019543-009A	SAMP	1	Hexavalent Chromium	05/04/16 7:41 PM	Reported
78	N019543-009AMS	MS	1	Hexavalent Chromium	05/04/16 7:51 PM	Reported
79	N019543-010A	SAMP	1	Hexavalent Chromium	05/04/16 8:01 PM	Reported
80	N019543-010AMS	MS	1	Hexavalent Chromium	05/04/16 8:11 PM	Reported
81	N019543-011A	SAMP	1	Hexavalent Chromium	05/04/16 8:21 PM	Not Reported
82	N019543-011AMS	MS	1	Hexavalent Chromium	05/04/16 8:31 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/04/16 8:41 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/04/16 8:51 PM	Reported
85	N019543-012A	SAMP	1	Hexavalent Chromium	05/04/16 9:00 PM	Reported
86	N019543-012AMS	MS	1	Hexavalent Chromium	05/04/16 9:10 PM	Reported
87	N019543-013A	SAMP	1	Hexavalent Chromium	05/04/16 9:20 PM	Reported
88	N019543-013AMS	MS	1	Hexavalent Chromium	05/04/16 9:30 PM	Reported
89	N019543-014A	SAMP	1	Hexavalent Chromium	05/04/16 9:40 PM	Reported
90	N019543-014AMS	MS	1	Hexavalent Chromium	05/04/16 9:50 PM	Reported
91	N019544-001A	SAMP	1	Hexavalent Chromium	05/04/16 10:00 PM	Reported
92	N019544-001AMS	MS	1	Hexavalent Chromium	05/04/16 10:10 PM	Reported
93	N019543-004AMS	MS	1	Hexavalent Chromium	05/04/16 10:20 PM	Reported
94	CCV-8	CCV1	1	Hexavalent Chromium	05/04/16 10:30 PM	Reported
95	CCB-8	CCB	1	Hexavalent Chromium	05/04/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160504A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/May/16 06:08:14**
No. of Injections:	**98**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/04/2016 08:07	Finished	CCV @ 5ppb, IWST-160401A
11	CCV-1,CCV,1	2	1000	Unknown		05/04/2016 08:21	Finished	CCV @ 5ppb, IWST-160401A
12	STD-0.2ppb,CCV2,1	3	1000	Unknown		05/04/2016 08:33	Finished	PQL @ 0.2 ppb
13	CCB-1,CCB,1	4	1000	Unknown		05/04/2016 08:43	Finished	CCB R160501A
14	MB-H2O,MBLK,1	5	1000	Unknown		05/04/2016 08:53	Finished	MB R160426A
15	LCS-H2O,LCS,1	6	1000	Unknown		05/04/2016 09:03	Finished	LCS(5ppb), IWST-160401B
16	N019608-001I,SAMP,1	7	1000	Unknown		05/04/2016 09:13	Finished	SAMP, 10mL
17	N019608-001IREP,DUP,1	8	1000	Unknown		05/04/2016 09:23	Finished	DUP, 10mL
18	N019597-001A,SAMP,1	9	1000	Unknown		05/04/2016 09:33	Finished	SAMP, 10mL
19	N019597-001ADUP,DUP,1	10	1000	Unknown		05/04/2016 09:43	Finished	DUP, 10mL
20	N019597-001AMS,MS,1	11	1000	Unknown		05/04/2016 09:53	Finished	MS (5ppb), IWST-160401B, 10 ml
21	N019597-001AMSD,MSD,1	12	1000	Unknown		05/04/2016 10:03	Finished	MSD (5ppb), IWST-160401B, 10 r
22	N019597-002A,SAMP,1	13	1000	Unknown		05/04/2016 10:12	Finished	SAMP, 10mL
23	N019593-001A,SAMP,1	14	1000	Unknown		05/04/2016 10:22	Finished	SAMP, 10mL
24	CCV-2,CCV1,1	15	1000	Unknown		05/04/2016 10:32	Finished	CCV @ 10ppb, IWST-160401A
25	CCB-2,CCB,1	16	1000	Unknown		05/04/2016 10:42	Finished	CCB
26	N019593-002A,SAMP,1	17	1000	Unknown		05/04/2016 10:52	Finished	SAMP, 10mL
27	N019593-003A,SAMP,1	18	1000	Unknown		05/04/2016 11:02	Finished	SAMP, 10mL
28	N019593-004A,SAMP,1	19	1000	Unknown		05/04/2016 11:12	Finished	SAMP, 10mL
29	N019542-009A,SAMP,5	20	1000	Unknown		05/04/2016 11:22	Finished	SAMP, 2.0>10mL
30	N019542-009AMS,MS,5	21	1000	Unknown		05/04/2016 11:32	Finished	MS (5ppb), IWST-160401B, 2.0>1
31	N019542-016A,SAMP,1000	22	1000	Unknown		05/04/2016 11:42	Finished	SAMP, 10uL> 10mL
32	N019542-016AMS,MS,1000	23	1000	Unknown		05/04/2016 11:52	Finished	MS (5ppb), IWST-160401B, 10uL>
33	N019542-017A,SAMP,1	24	1000	Unknown		05/04/2016 12:02	Finished	SAMP, 10mL
34	N019542-017AMS,MS,1	25	1000	Unknown		05/04/2016 12:12	Finished	MS (1ppb), IWST-160401B, 10 ml
35	N019542-018A,SAMP,1	26	1000	Unknown		05/04/2016 12:22	Finished	SAMP, 10mL
36	CCV-3,CCV,1	27	1000	Unknown		05/04/2016 12:32	Finished	CCV @ 5ppb, IWST-160401A
37	CCB-3,CCB,1	28	1000	Unknown		05/04/2016 12:42	Finished	CCB
38	N019542-018AMS,MS,1	29	1000	Unknown		05/04/2016 12:52	Finished	MS (1ppb), IWST-160401B, 10 ml
39	N019542-019A,SAMP,1	30	1000	Unknown		05/04/2016 13:02	Finished	SAMP, 10mL
40	N019542-019AMS,MS,1	31	1000	Unknown		05/04/2016 13:12	Finished	MS (1ppb), IWST-160401B, 10 ml
41	N019542-020A,SAMP,1	32	1000	Unknown		05/04/2016 13:22	Finished	SAMP, 10mL
42	N019542-020AMS,MS,1	33	1000	Unknown		05/04/2016 13:32	Finished	MS (1ppb), IWST-160401B, 10 ml
43	N019614-001B,SAMP,100	34	1000	Unknown		05/04/2016 13:42	Finished	SAMP, 0.10>10mL
44	N019614-001BMS,MS,100	35	1000	Unknown		05/04/2016 13:52	Finished	MS (5ppb), IWST-160401B, 0.10>
45	N019614-002B,SAMP,1	36	1000	Unknown		05/04/2016 14:02	Finished	SAMP, 10mL
46	N019614-002BMS,MS,1	37	1000	Unknown		05/04/2016 14:12	Finished	MS (1ppb), IWST-160401B, 10 ml
47	N019617-001A,SAMP,1	38	1000	Unknown		05/04/2016 14:22	Finished	SAMP, 10mL
48	CCV-4,CCV1,1	39	1000	Unknown		05/04/2016 14:32	Finished	CCV @ 10ppb, IWST-160401A
49	CCB-4,CCB,1	40	1000	Unknown		05/04/2016 14:41	Finished	CCB
50	N019542-018AMS,MS,1	1	1000	Unknown		05/04/2016 14:56	Finished	MS (1ppb), IWST-160401B, 10 ml
51	N019542-019A,SAMP,5	2	1000	Unknown		05/04/2016 15:20	Finished	SAMP, 2.0> 10mL
52	N019542-019AMS,MS,5	3	1000	Unknown		05/04/2016 15:32	Finished	MS (5ppb), IWST-160401B, 2.0>1
53	MB-H2O,MBLK,1	4	1000	Unknown		05/04/2016 15:42	Finished	MB R160426A
54	LCS-H2O,LCS,1	5	1000	Unknown		05/04/2016 15:52	Finished	LCS(5ppb), IWST-160401B
55	N019543-001A,SAMP,1	6	1000	Unknown		05/04/2016 16:02	Finished	SAMP, 10mL
56	N019543-001ADUP,DUP,1	7	1000	Unknown		05/04/2016 16:12	Finished	DUP, 10mL
57	N019543-001AMS,MS,1	8	1000	Unknown		05/04/2016 16:22	Finished	MS (1ppb), IWST-160401B, 10 ml
58	N019543-001AMSD,MSD,1	9	1000	Unknown		05/04/2016 16:31	Finished	MSD (1ppb), IWST-160401B, 10 r
59	CCV-5,CCV,1	11	1000	Unknown		05/04/2016 16:41	Finished	CCV @ 5ppb, IWST-160401A
60	CCB-5,CCB,1	12	1000	Unknown		05/04/2016 16:51	Finished	CCB
61	N019543-002A,SAMP,1	13	1000	Unknown		05/04/2016 17:01	Finished	SAMP, 10mL
62	N019543-002AMS,MS,1	14	1000	Unknown		05/04/2016 17:11	Finished	MS (1ppb), IWST-160401B, 10 ml
63	N019543-003A,SAMP,1	15	1000	Unknown		05/04/2016 17:21	Finished	SAMP, 10mL
64	N019543-003AMS,MS,1	16	1000	Unknown		05/04/2016 17:31	Finished	MS (1ppb), IWST-160401B, 10 ml
65	N019543-004A,SAMP,1	17	1000	Unknown		05/04/2016 17:41	Finished	SAMP, 10mL
66	N019543-004AMS,MS,1	18	1000	Unknown		05/04/2016 17:51	Finished	MS (1ppb), IWST-160401B, 10 ml
67	N019543-005A,SAMP,1	19	1000	Unknown		05/04/2016 18:01	Finished	SAMP, 10mL
68	N019543-005AMS,MS,1	20	1000	Unknown		05/04/2016 18:11	Finished	MS (1ppb), IWST-160401B, 10 ml
69	N019543-006A,SAMP,1	21	1000	Unknown		05/04/2016 18:21	Finished	SAMP, 10mL
70	N019543-006AMS,MS,1	22	1000	Unknown		05/04/2016 18:31	Finished	MS (1ppb), IWST-160401B, 10 ml

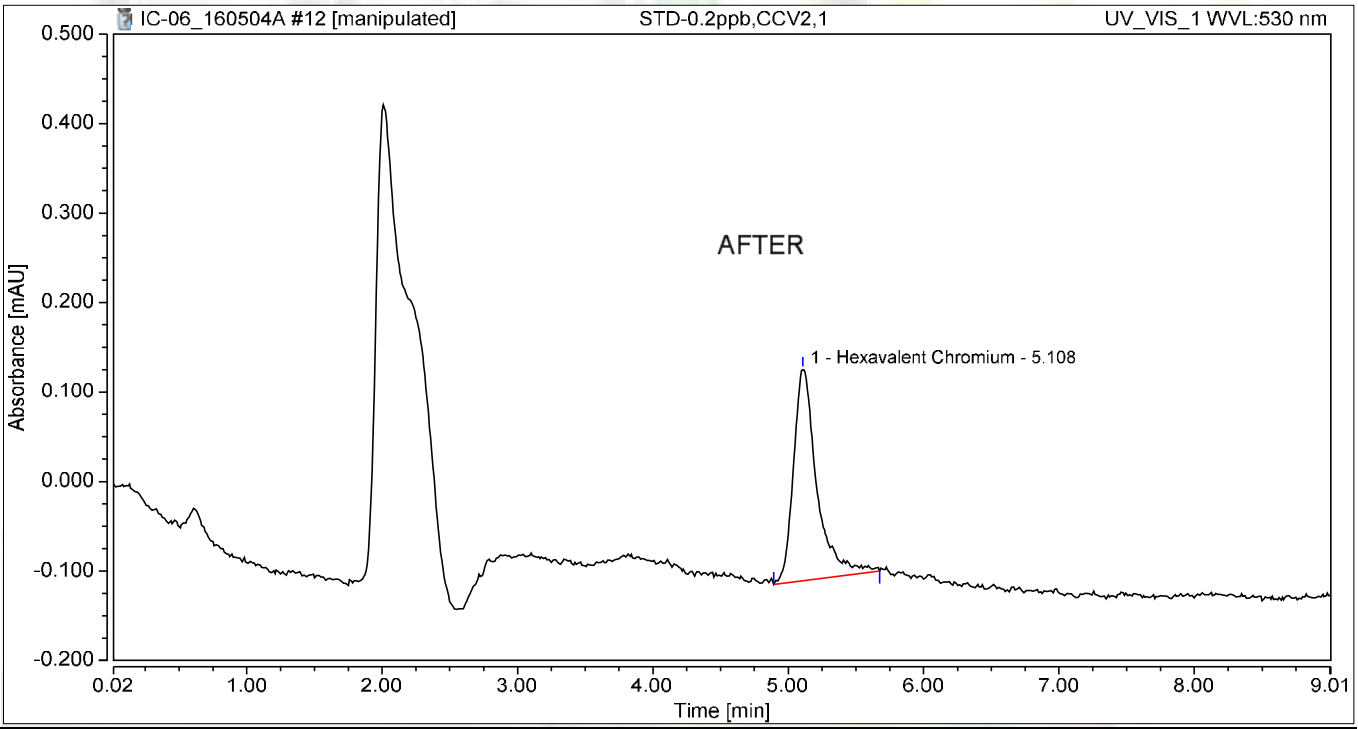
71	CCV-6,CCV1,1	23	1000	Unknown		05/04/2016 18:41	Finished	CCV @ 10ppb, IWST-160401A
72	CCB-6,CCB,1	24	1000	Unknown		05/04/2016 18:51	Finished	CCB
73	N019543-007A,SAMP,1	25	1000	Unknown		05/04/2016 19:01	Finished	SAMP, 10mL
74	N019543-007AMS,MS,1	26	1000	Unknown		05/04/2016 19:11	Finished	MS (1ppb), IWST-160401B, 10 ml
75	N019543-008A,SAMP,1	27	1000	Unknown		05/04/2016 19:21	Finished	SAMP, 10mL
76	N019543-008AMS,MS,1	28	1000	Unknown		05/04/2016 19:31	Finished	MS (1ppb), IWST-160401B, 10 ml
77	N019543-009A,SAMP,1	29	1000	Unknown		05/04/2016 19:41	Finished	SAMP, 10mL
78	N019543-009AMS,MS,1	30	1000	Unknown		05/04/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 ml
79	N019543-010A,SAMP,1	31	1000	Unknown		05/04/2016 20:01	Finished	SAMP, 10mL
80	N019543-010AMS,MS,1	32	1000	Unknown		05/04/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 ml
81	N019543-011A,SAMP,1	33	1000	Unknown		05/04/2016 20:21	Finished	SAMP, 10mL
82	N019543-011AMS,MS,1	34	1000	Unknown		05/04/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 ml
83	CCV-7,CCV,1	35	1000	Unknown		05/04/2016 20:41	Finished	CCV @ 5ppb, IWST-160401A
84	CCB-7,CCB,1	36	1000	Unknown		05/04/2016 20:51	Finished	CCB
85	N019543-012A,SAMP,1	37	1000	Unknown		05/04/2016 21:00	Finished	SAMP, 10mL
86	N019543-012AMS,MS,1	38	1000	Unknown		05/04/2016 21:10	Finished	MS (1ppb), IWST-160401B, 10 ml
87	N019543-013A,SAMP,1	39	1000	Unknown		05/04/2016 21:20	Finished	SAMP, 10mL
88	N019543-013AMS,MS,1	40	1000	Unknown		05/04/2016 21:30	Finished	MS (1ppb), IWST-160401B, 10 ml
89	N019543-014A,SAMP,1	41	1000	Unknown		05/04/2016 21:40	Finished	SAMP, 10mL
90	N019543-014AMS,MS,1	42	1000	Unknown		05/04/2016 21:50	Finished	MS (1ppb), IWST-160401B, 10 ml
91	N019544-001A,SAMP,1	43	1000	Unknown		05/04/2016 22:00	Finished	SAMP, 10mL
92	N019544-001AMS,MS,1	44	1000	Unknown		05/04/2016 22:10	Finished	MS (1ppb), IWST-160401B, 10 ml
93	N019543-004AMS,MS,1	45	1000	Unknown		05/04/2016 22:20	Finished	MS (1ppb), IWST-160401B, 10 ml
94	CCV-8-CCV1,1	46	1000	Unknown		05/04/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
95	CCB-8-CCB,1	47	1000	Unknown		05/04/2016 22:40	Finished	CCB R160331B
96	SHUTDOWN	48	1000	Unknown		05/04/2016 22:50	Finished	
97	Eluent: R160503A	49	1000	Unknown		n.a.	Finished	Eluent
98	PCR: R160504A	50	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 08:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.048	0.237	100.00	100.00	0.1868
Total:			**0.048**	**0.237**	**100.00**	**100.00**	

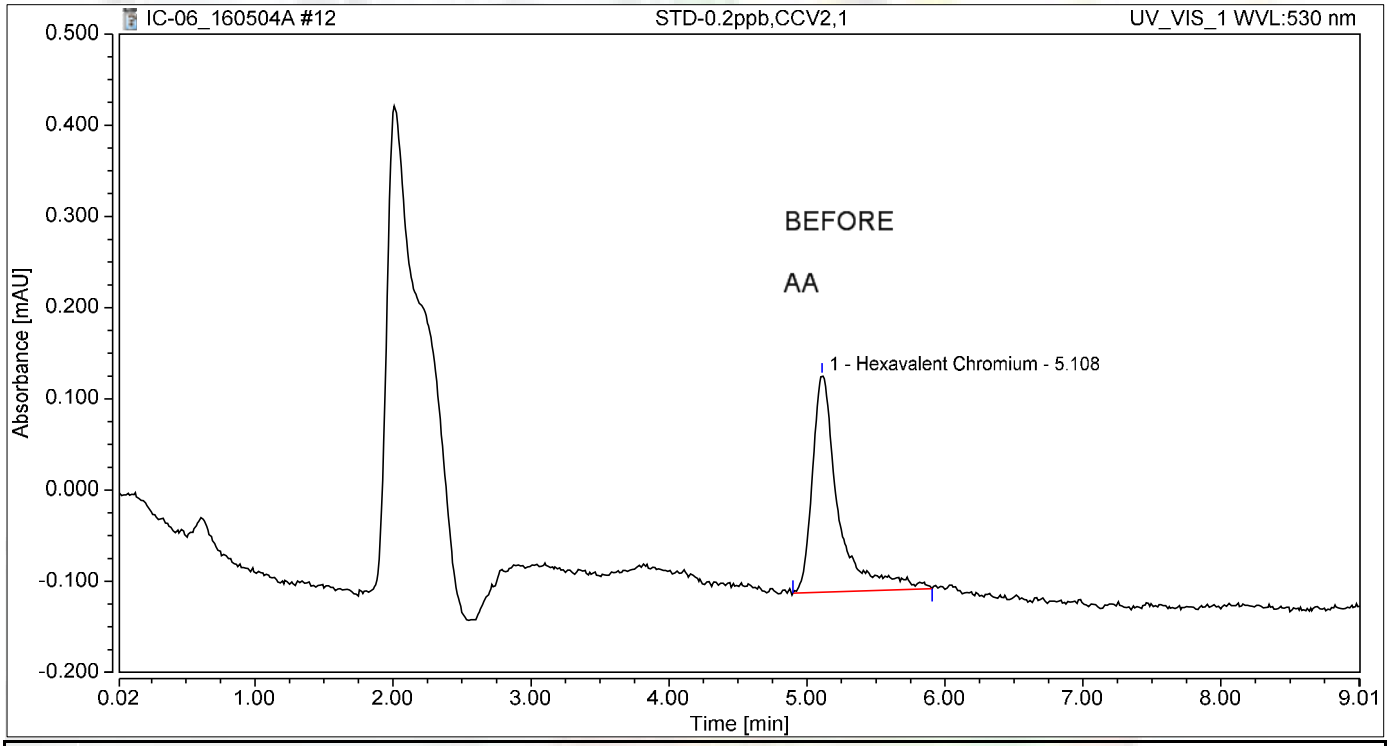
5/6/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 08:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

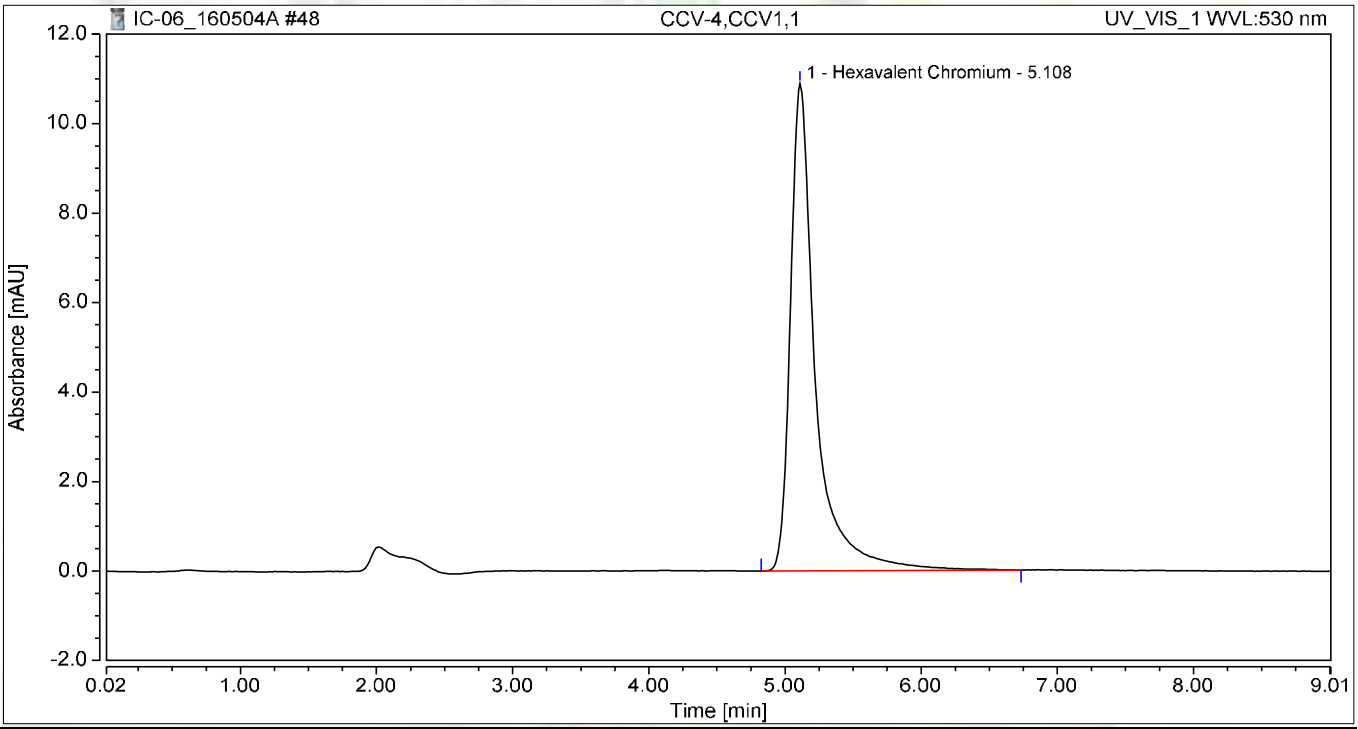
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.052	0.238	100.00	100.00	0.2051
Total:			**0.052**	**0.238**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

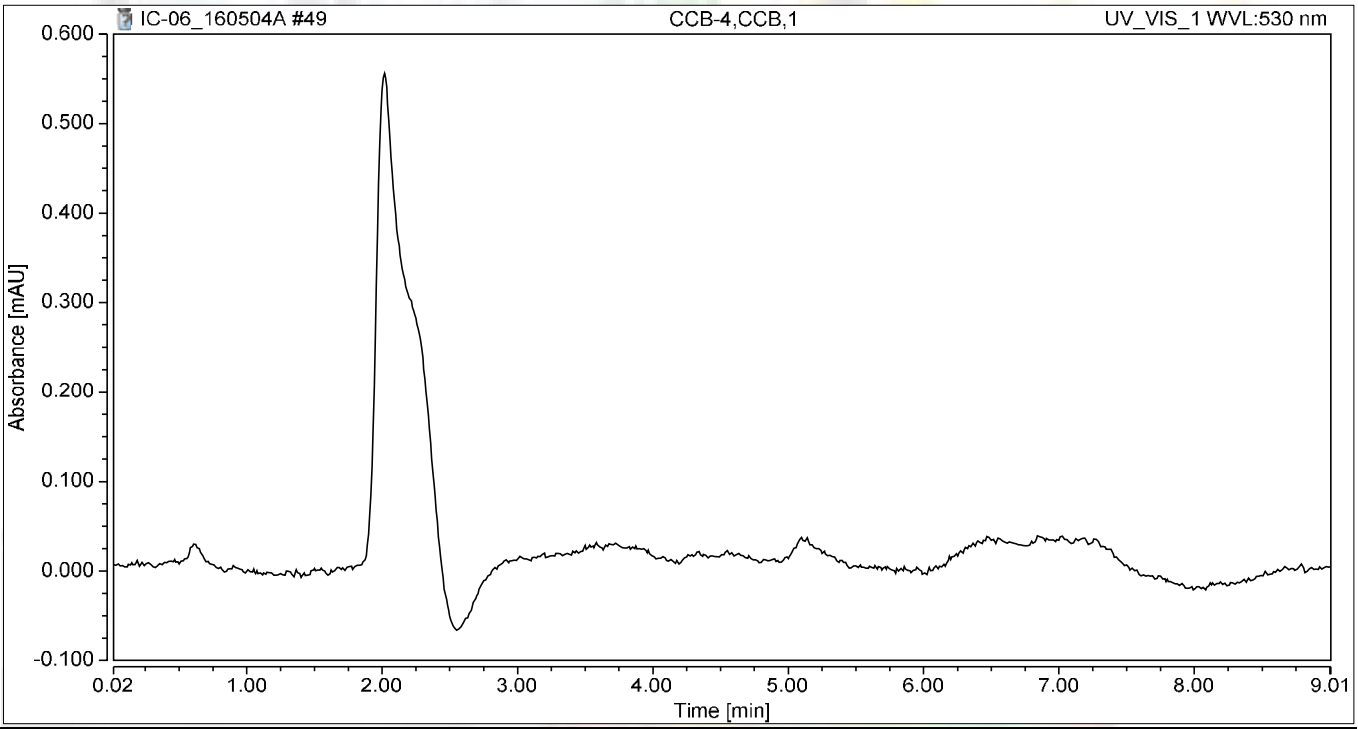
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.324	10.895	100.00	100.00	9.9337
Total:			**2.324**	**10.895**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

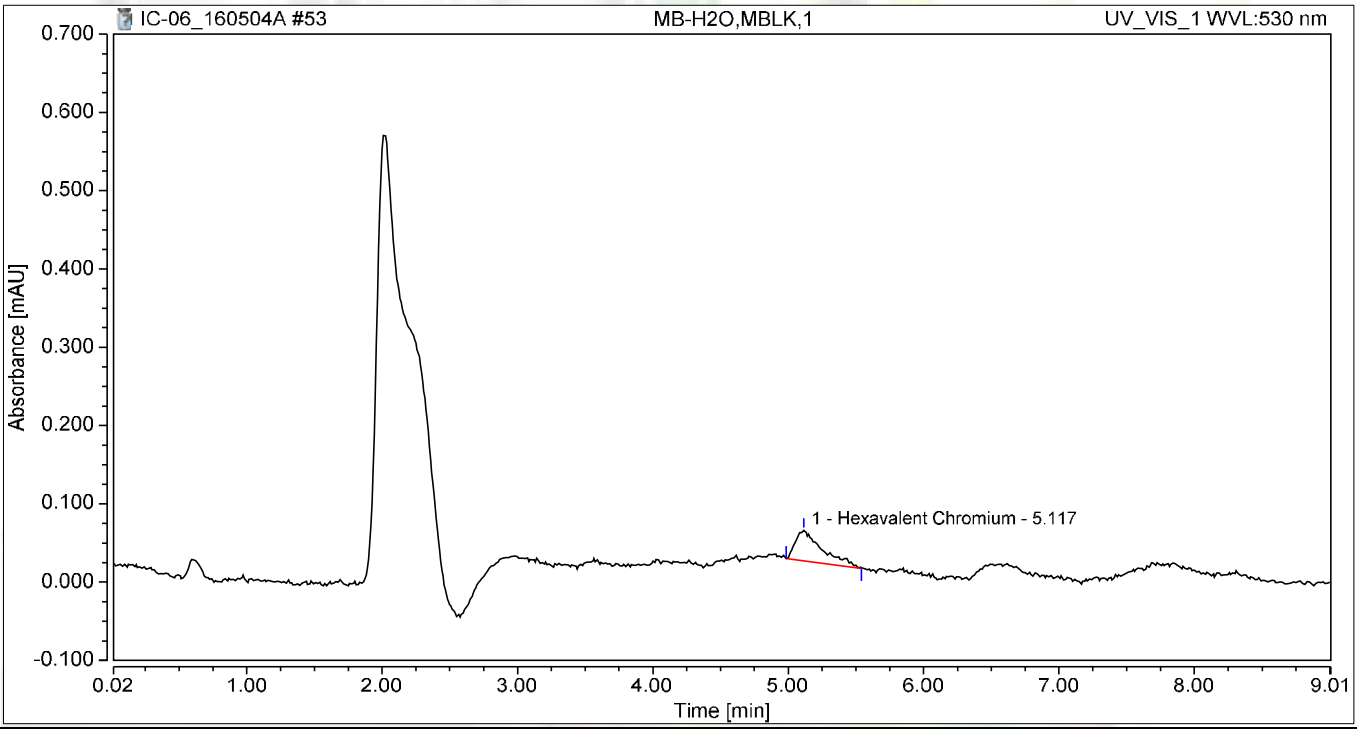
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 15:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

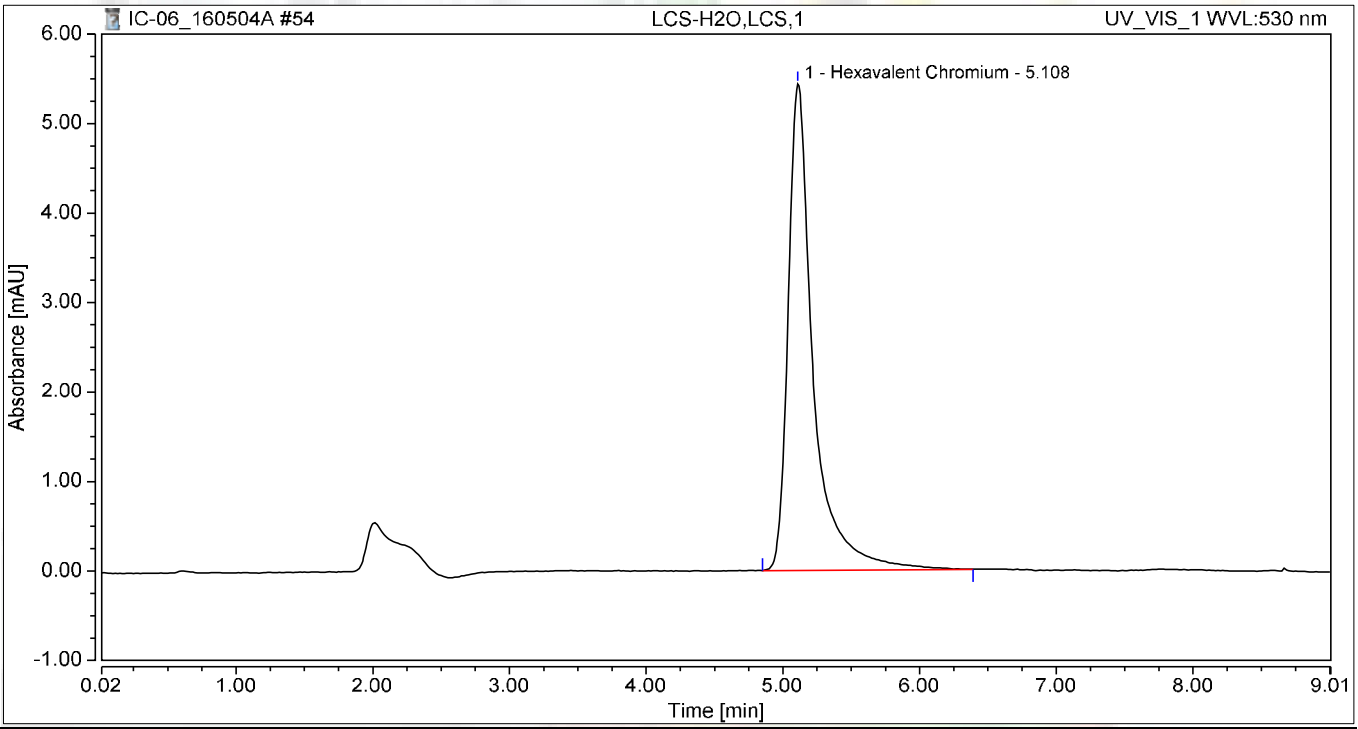
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.009	0.039	100.00	100.00	0.0203
Total:			**0.009**	**0.039**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 15:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

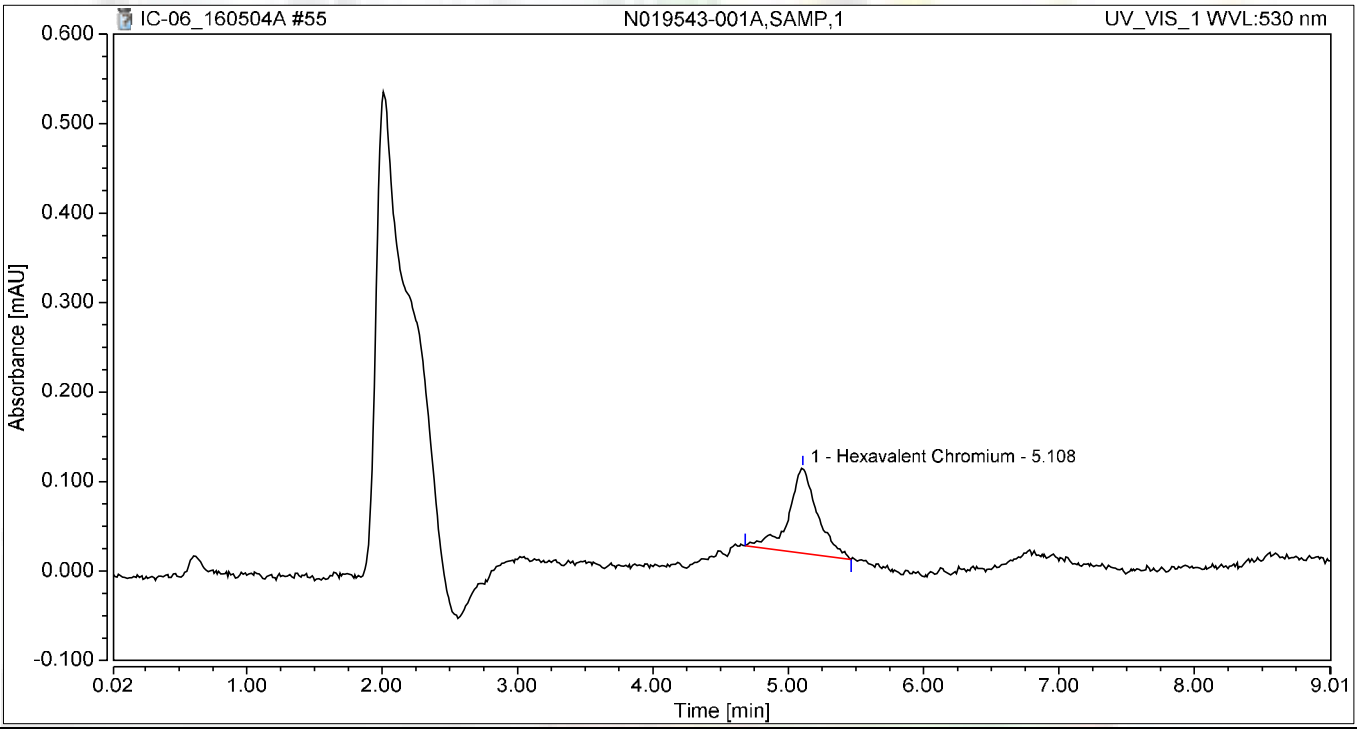
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.158	5.436	100.00	100.00	4.9402
Total:			**1.158**	**5.436**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

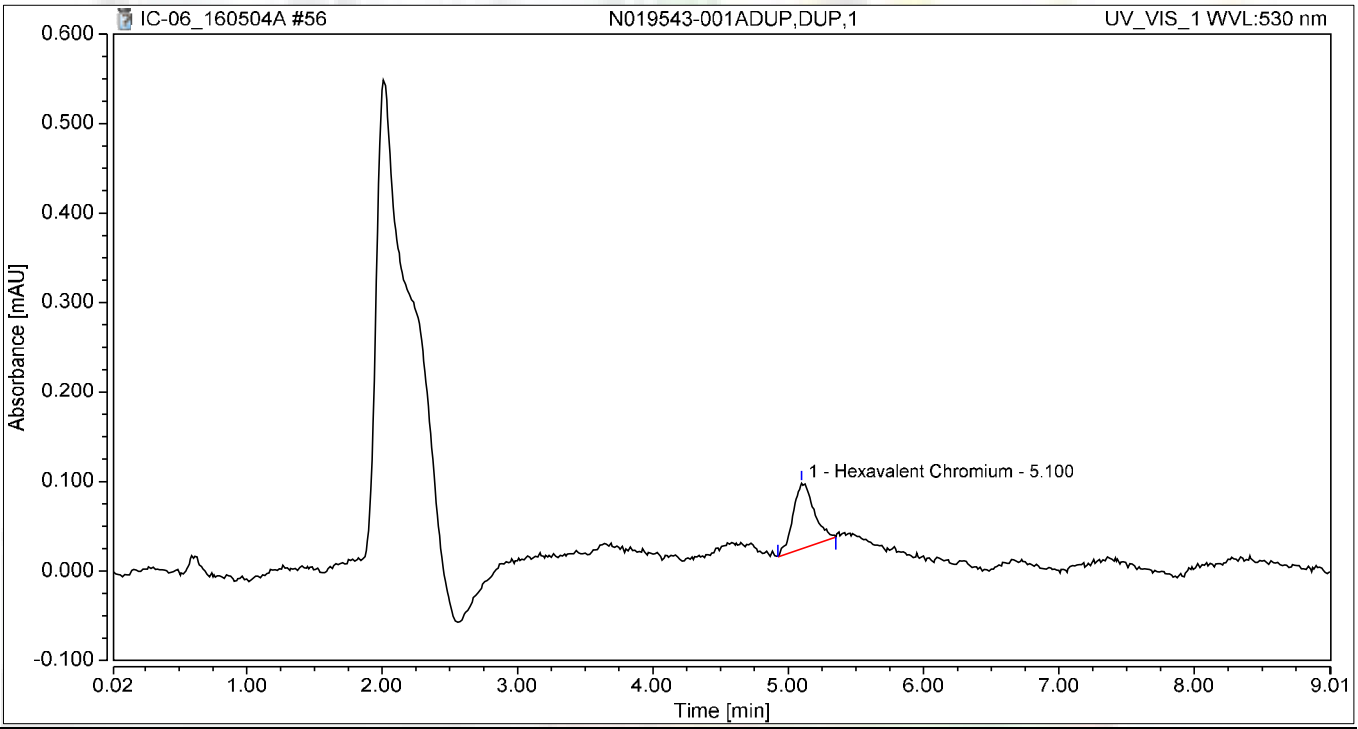
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.024	0.095	100.00	100.00	0.0841
Total:			**0.024**	**0.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-001ADUP,DUP,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

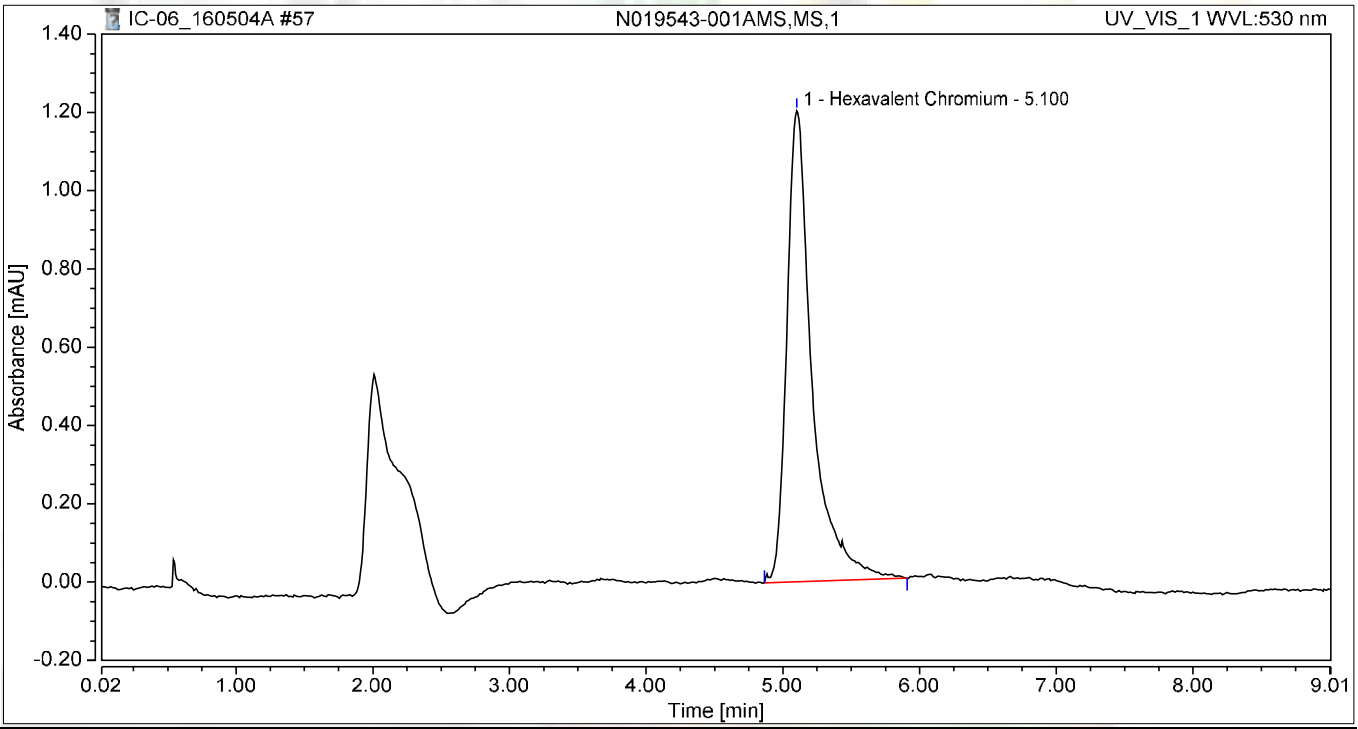
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.013	0.074	100.00	100.00	0.0389
Total:			**0.013**	**0.074**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

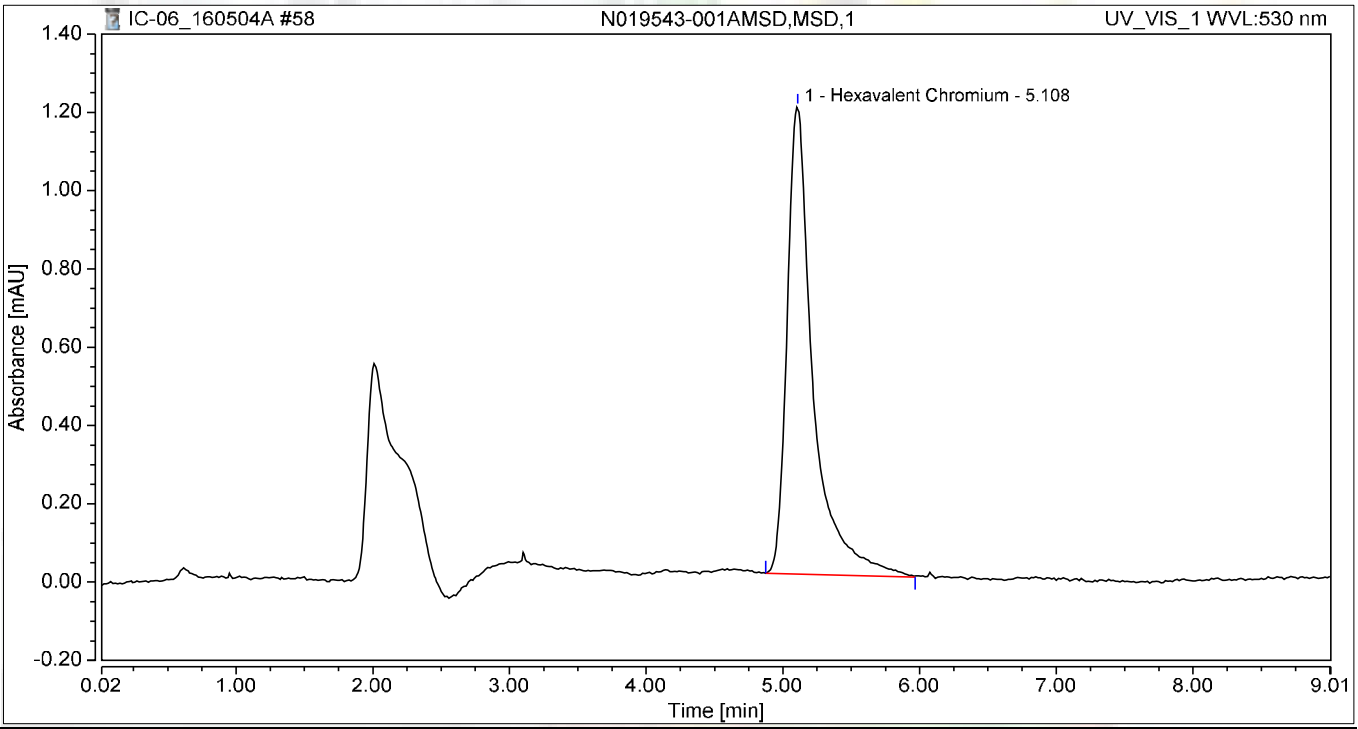
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.259	1.203	100.00	100.00	1.0894
Total:			**0.259**	**1.203**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-001AMSD,MSD,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

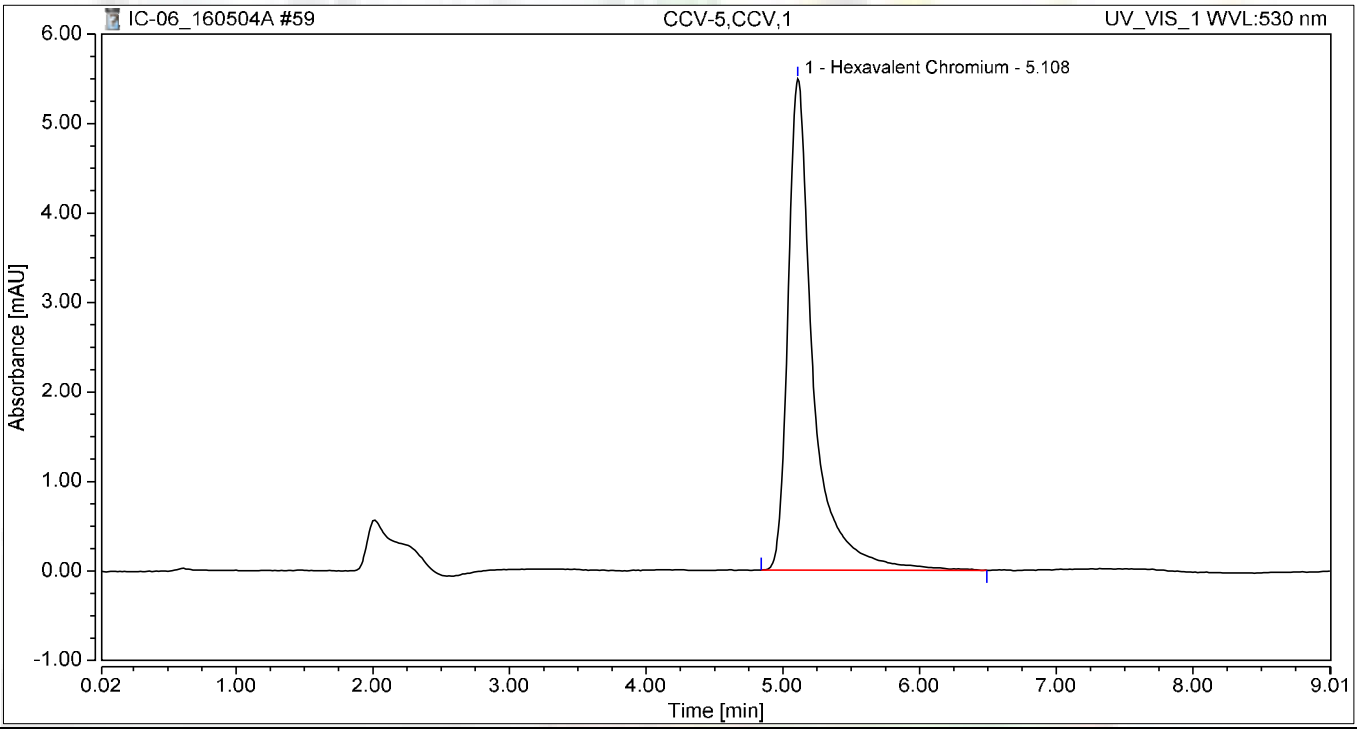
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.263	1.195	100.00	100.00	1.1084
Total:			**0.263**	**1.195**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

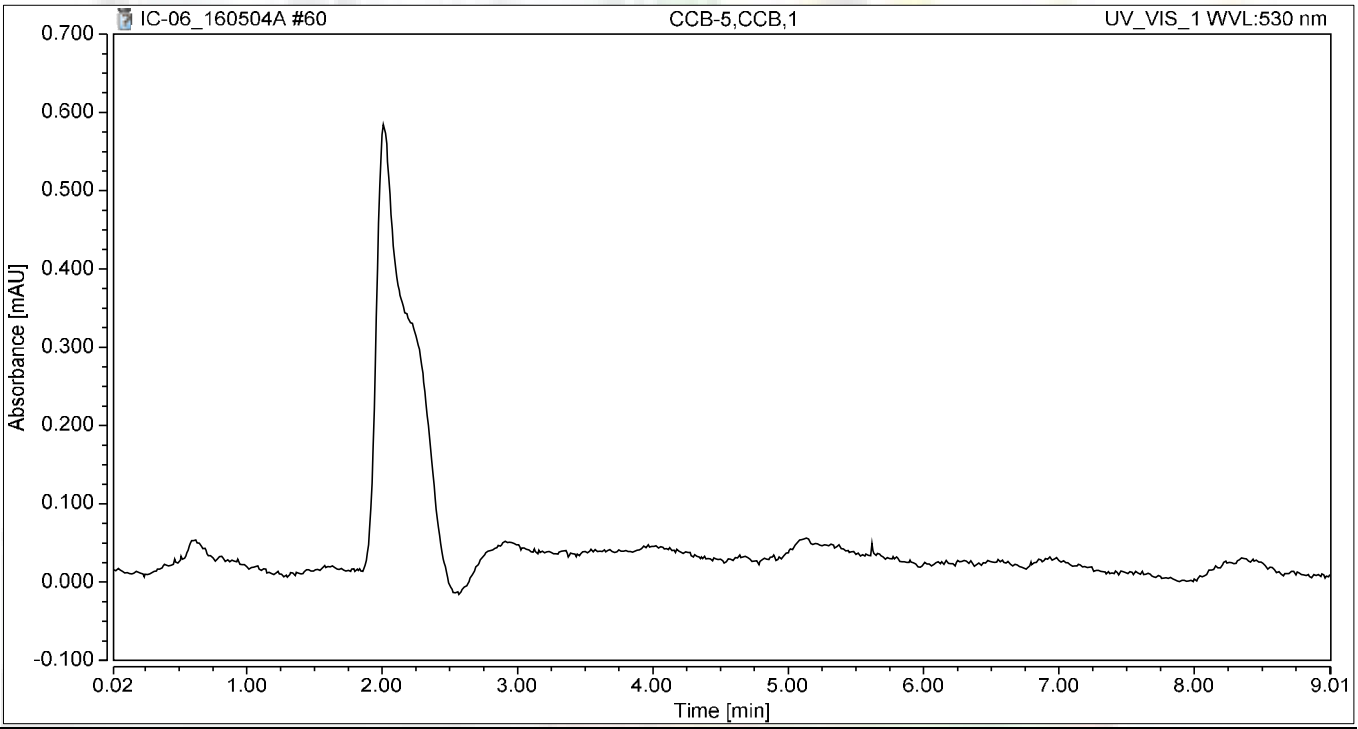
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.173	5.490	100.00	100.00	5.0039
Total:			**1.173**	**5.490**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

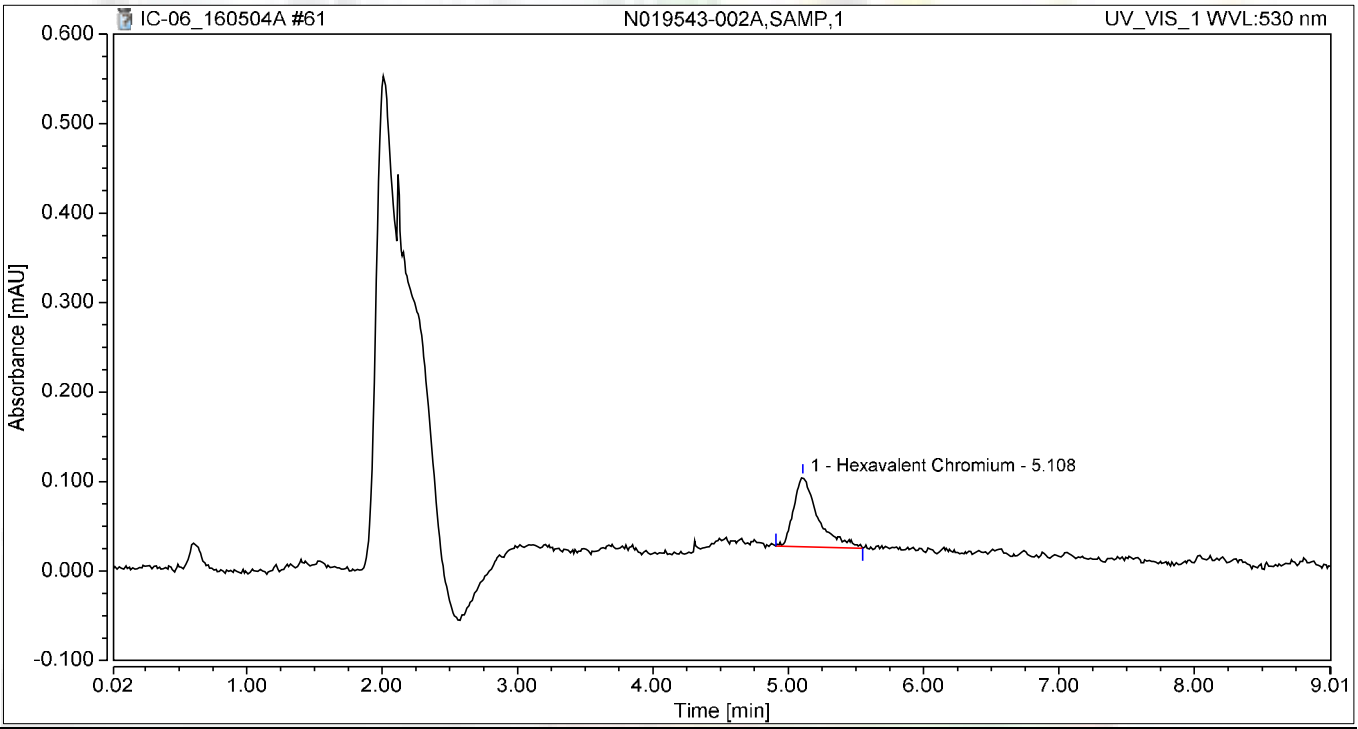
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-002A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

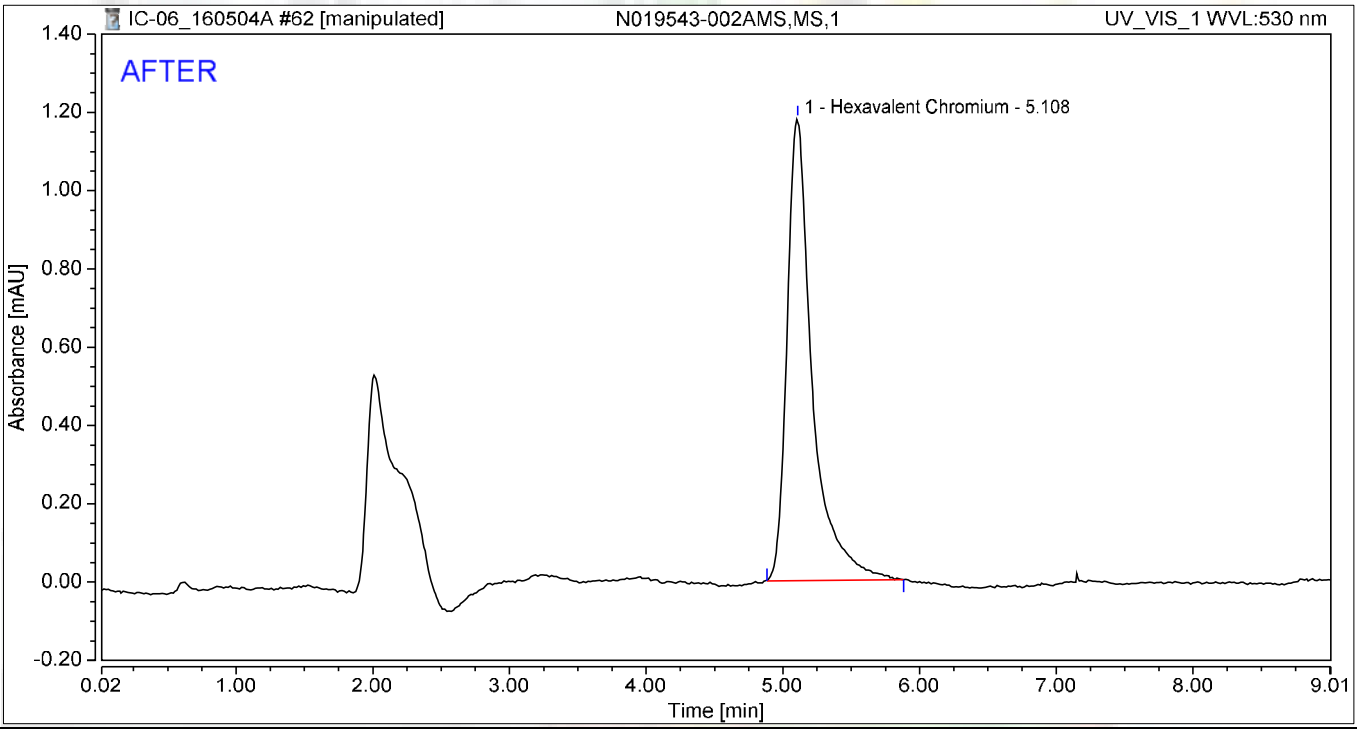
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.016	0.079	100.00	100.00	0.0523
Total:			**0.016**	**0.079**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-002AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.252	1.180	100.00	100.00	1.0612
Total:			**0.252**	**1.180**	**100.00**	**100.00**	

5/10/2016

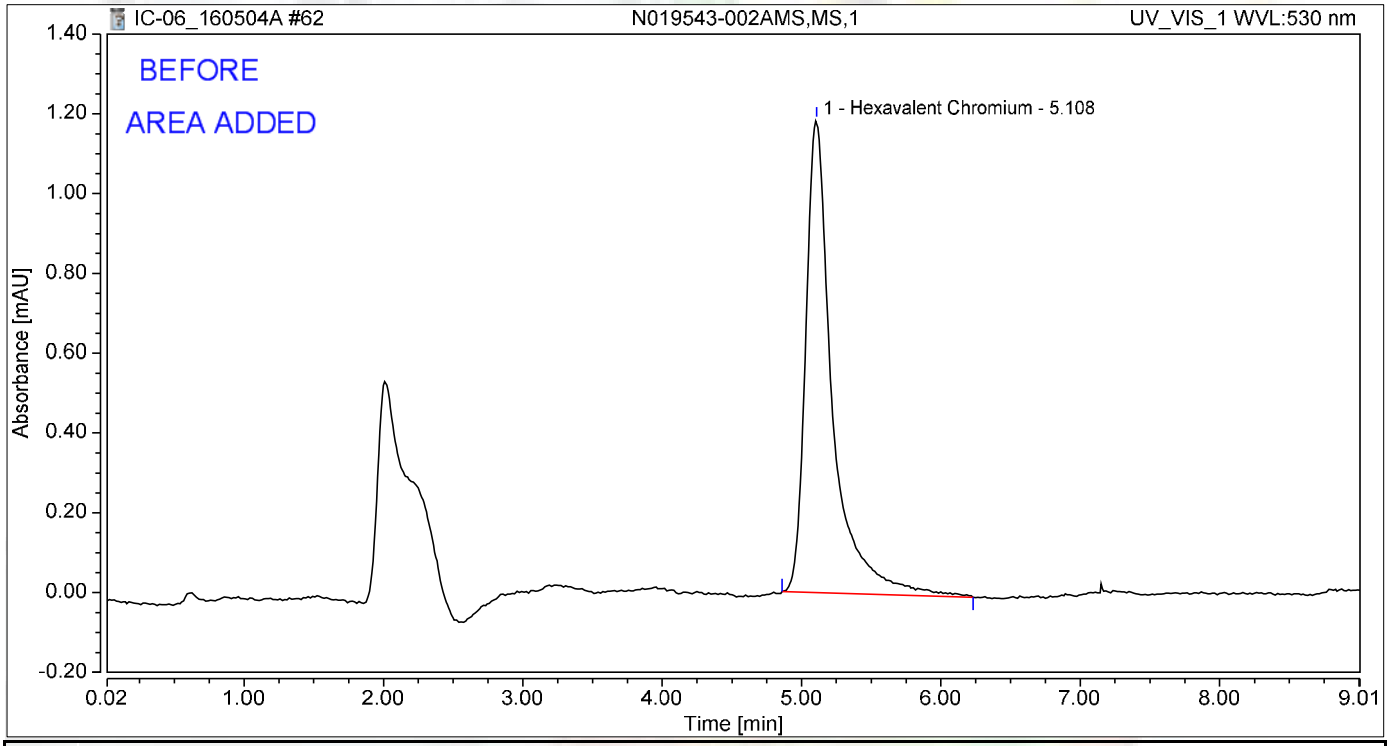
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-002AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.263	1.185	100.00	100.00	1.1080
Total:			**0.263**	**1.185**	**100.00**	**100.00**	

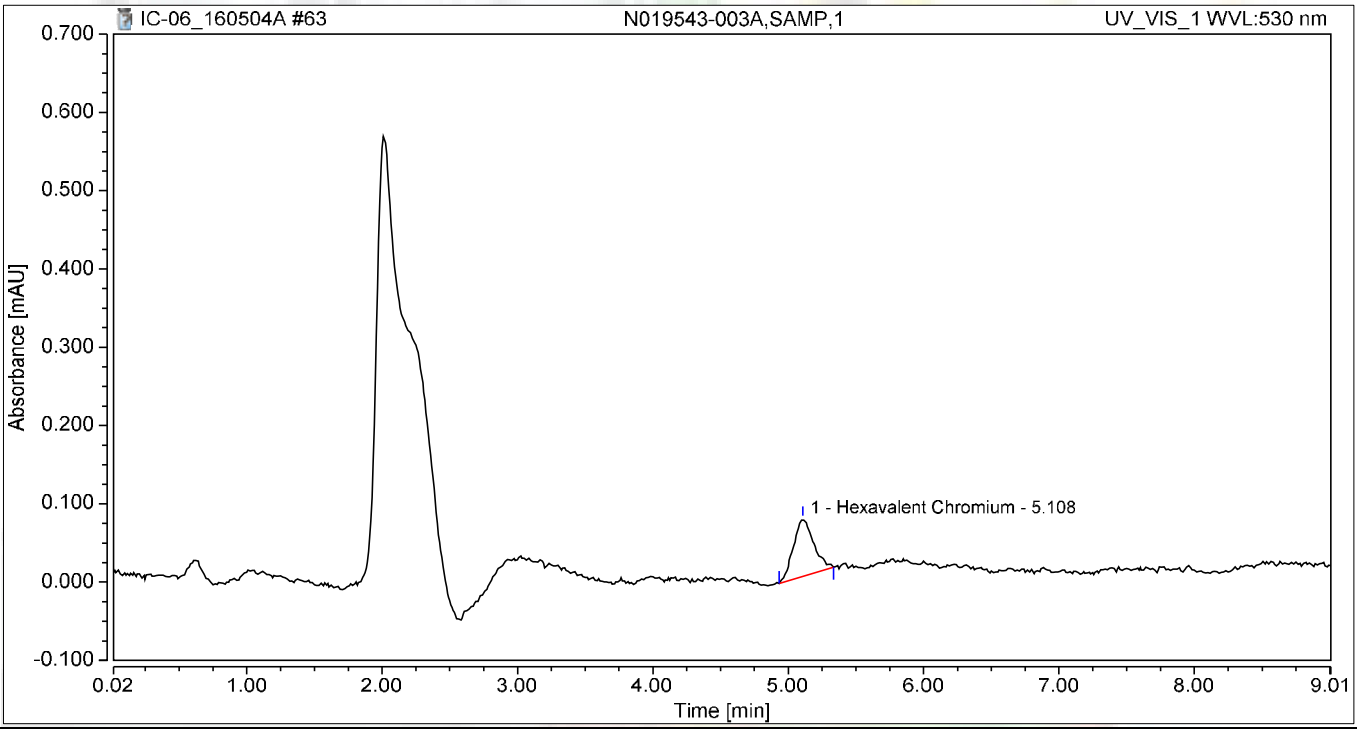
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

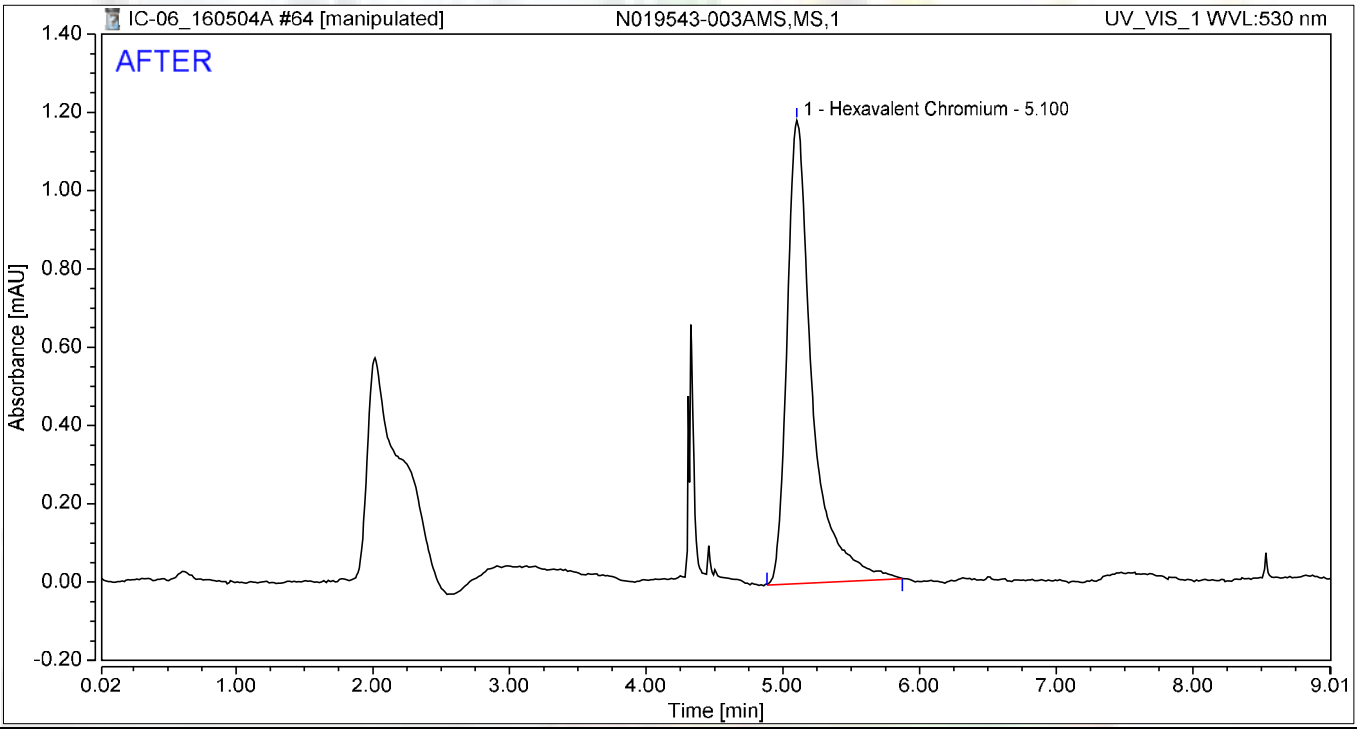
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.013	0.074	100.00	100.00	0.0365
Total:			**0.013**	**0.074**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-003AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.253	1.183	100.00	100.00	1.0636
Total:			**0.253**	**1.183**	**100.00**	**100.00**	

5/10/2016

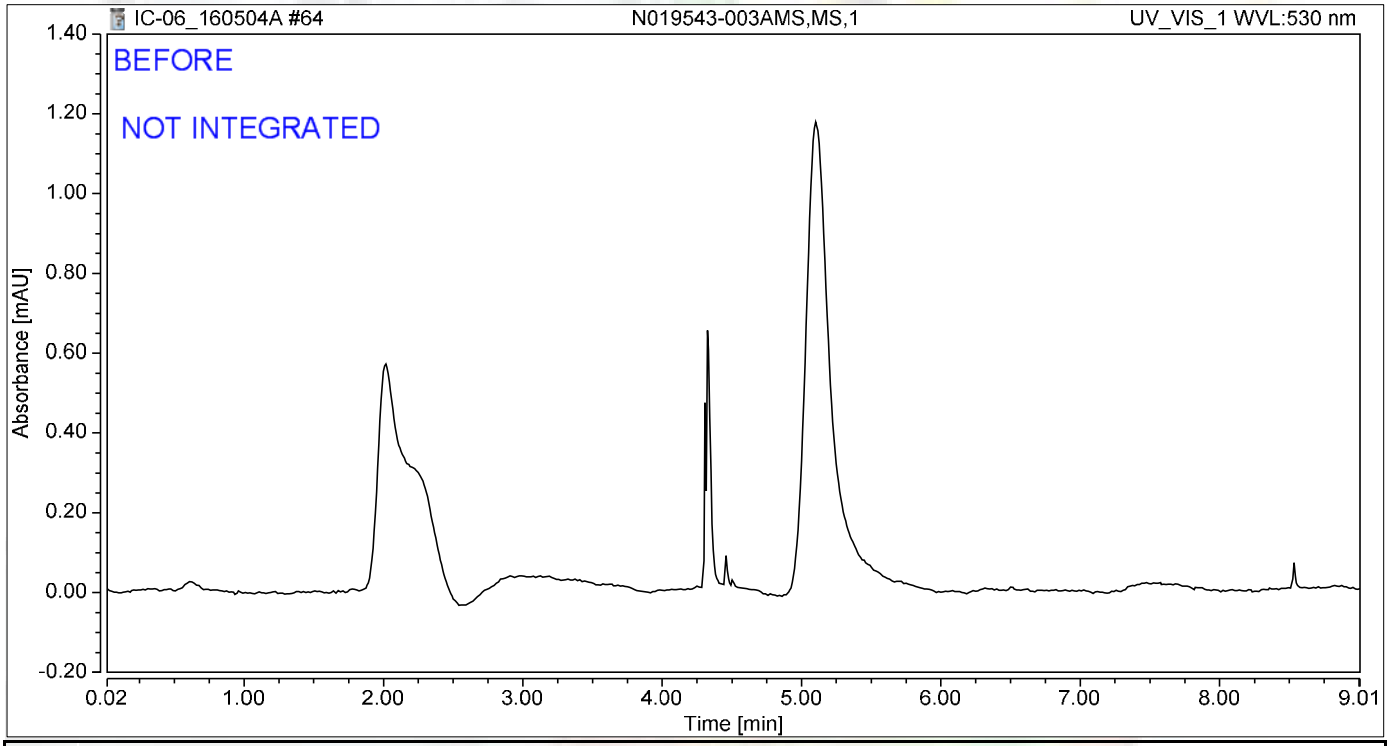
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-003AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

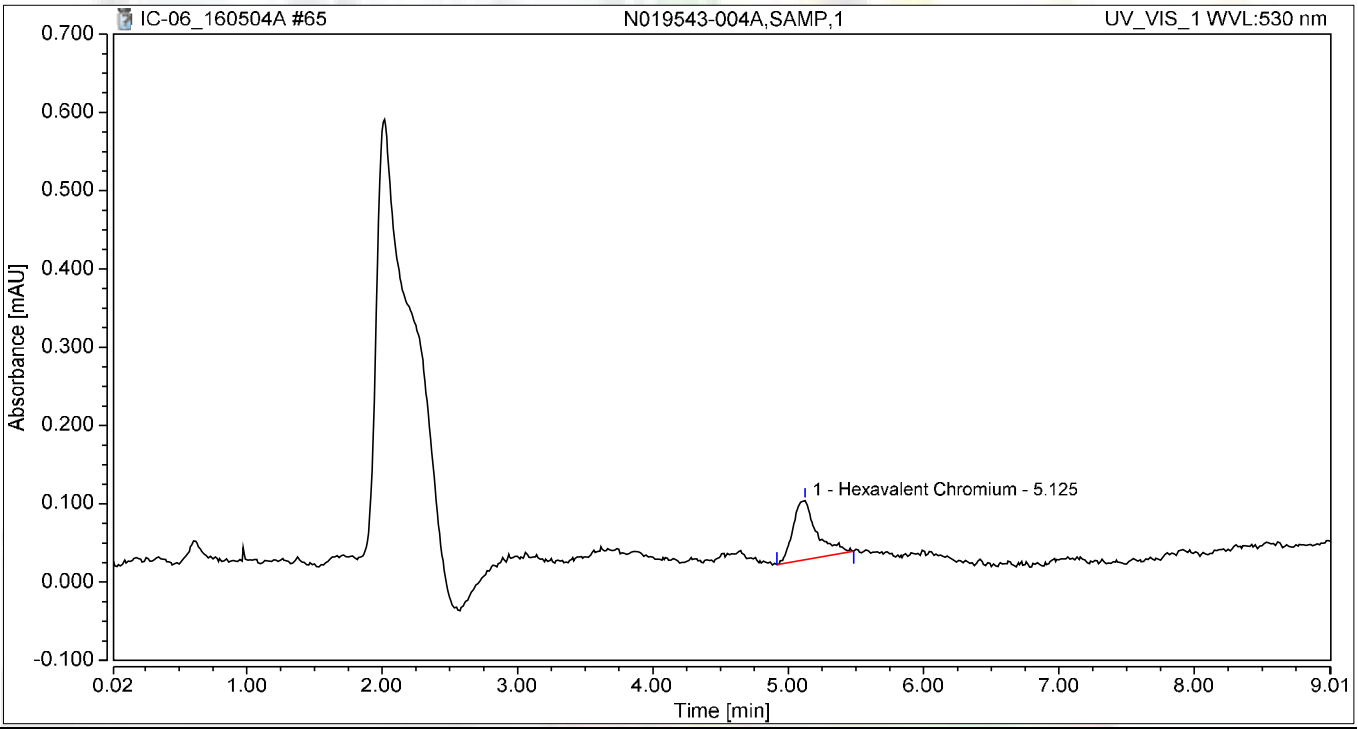
jas 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-004A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

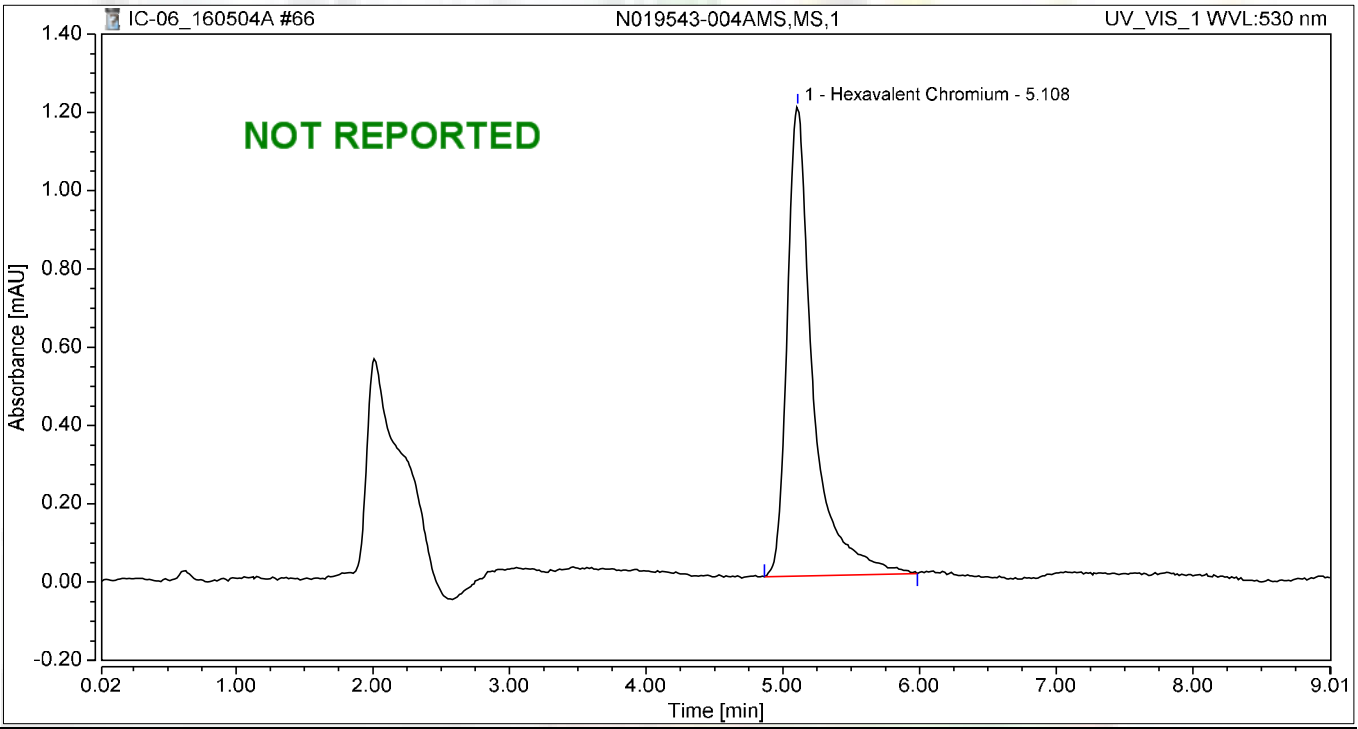
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.125	0.015	0.076	100.00	100.00	0.0482
Total:			**0.015**	**0.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-004AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 17:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

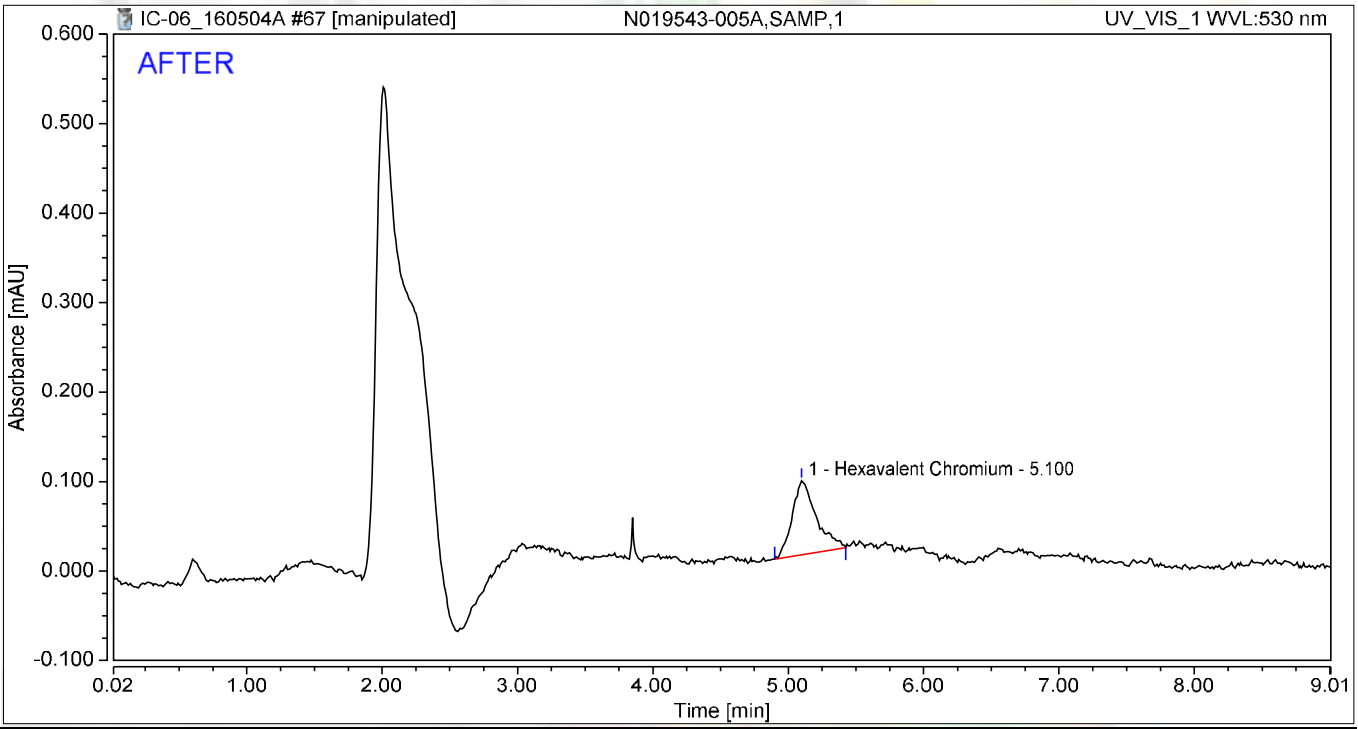
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.263	1.200	100.00	100.00	1.1074
Total:			**0.263**	**1.200**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-005A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.017	0.083	100.00	100.00	0.0555
Total:			**0.017**	**0.083**	**100.00**	**100.00**	

5/10/2016

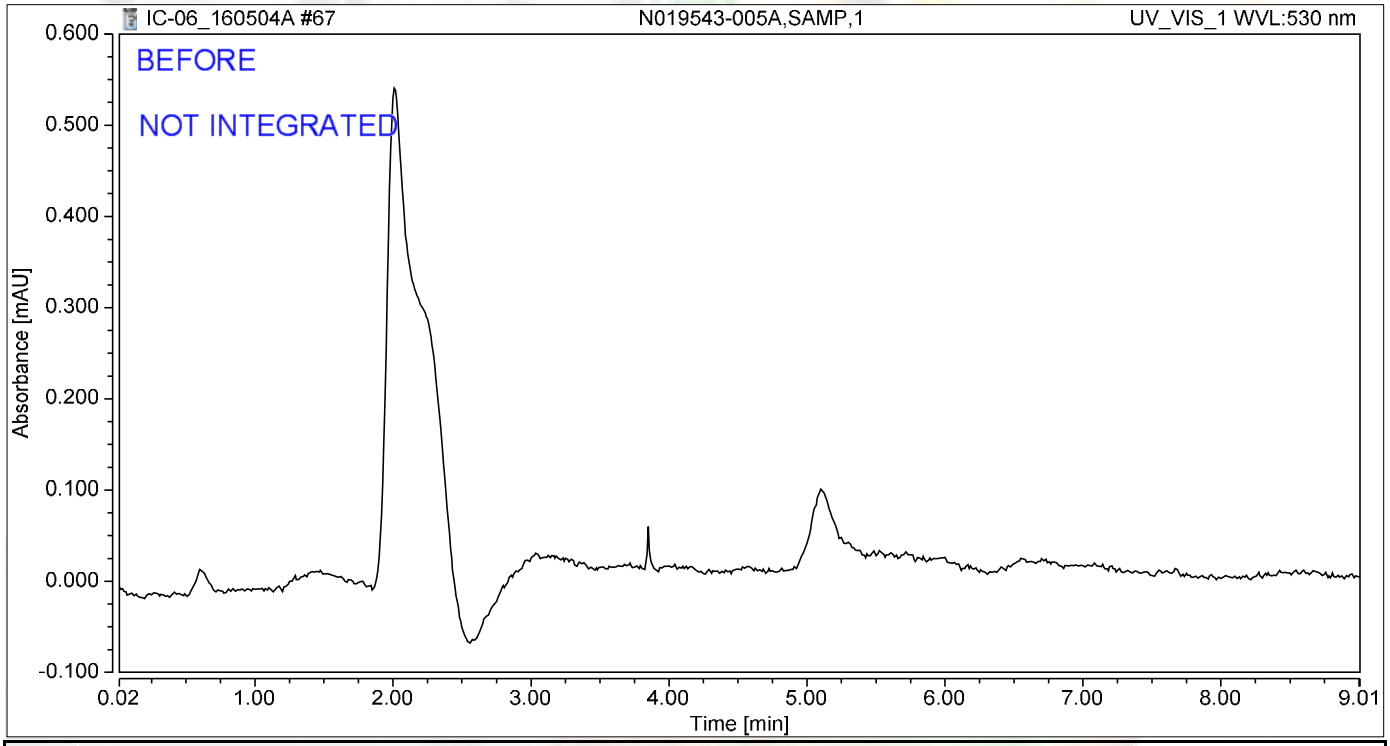
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-005A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

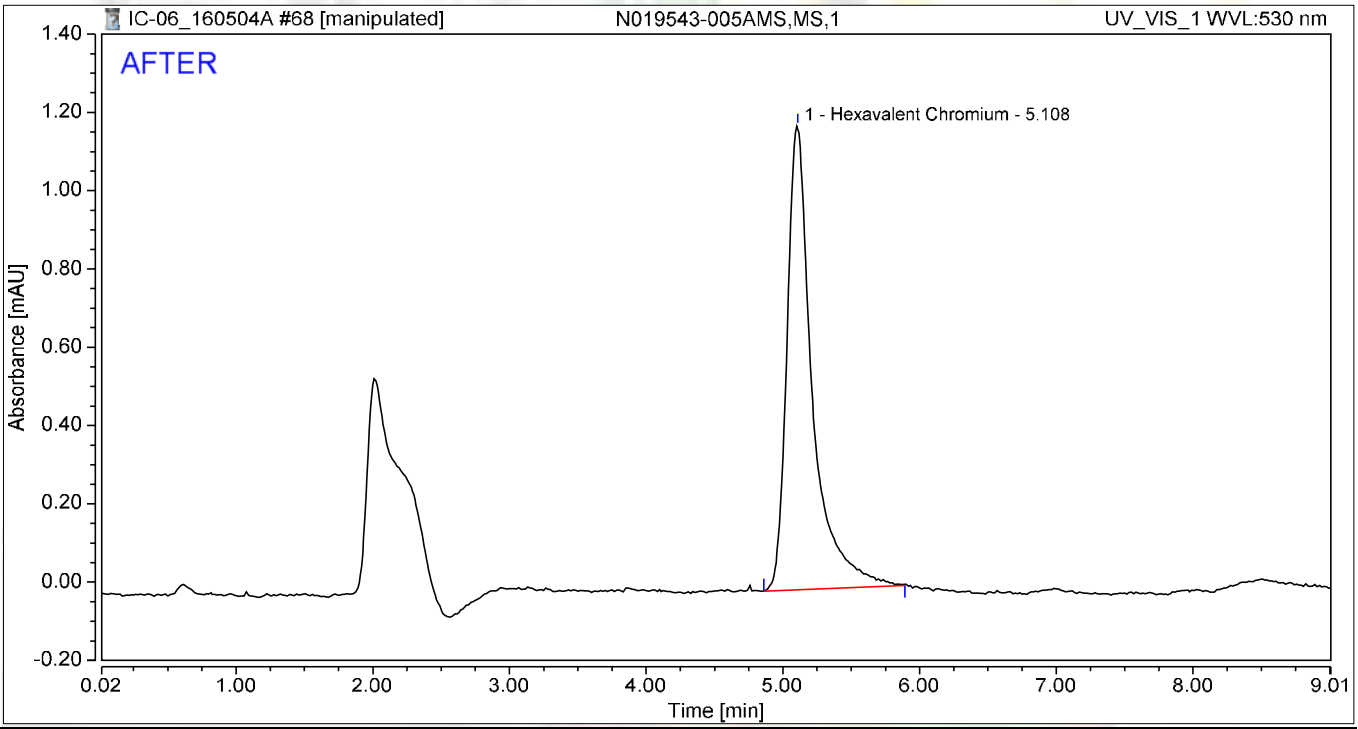
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-005AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.255	1.185	100.00	100.00	1.0743
Total:			**0.255**	**1.185**	**100.00**	**100.00**	

5/10/2016

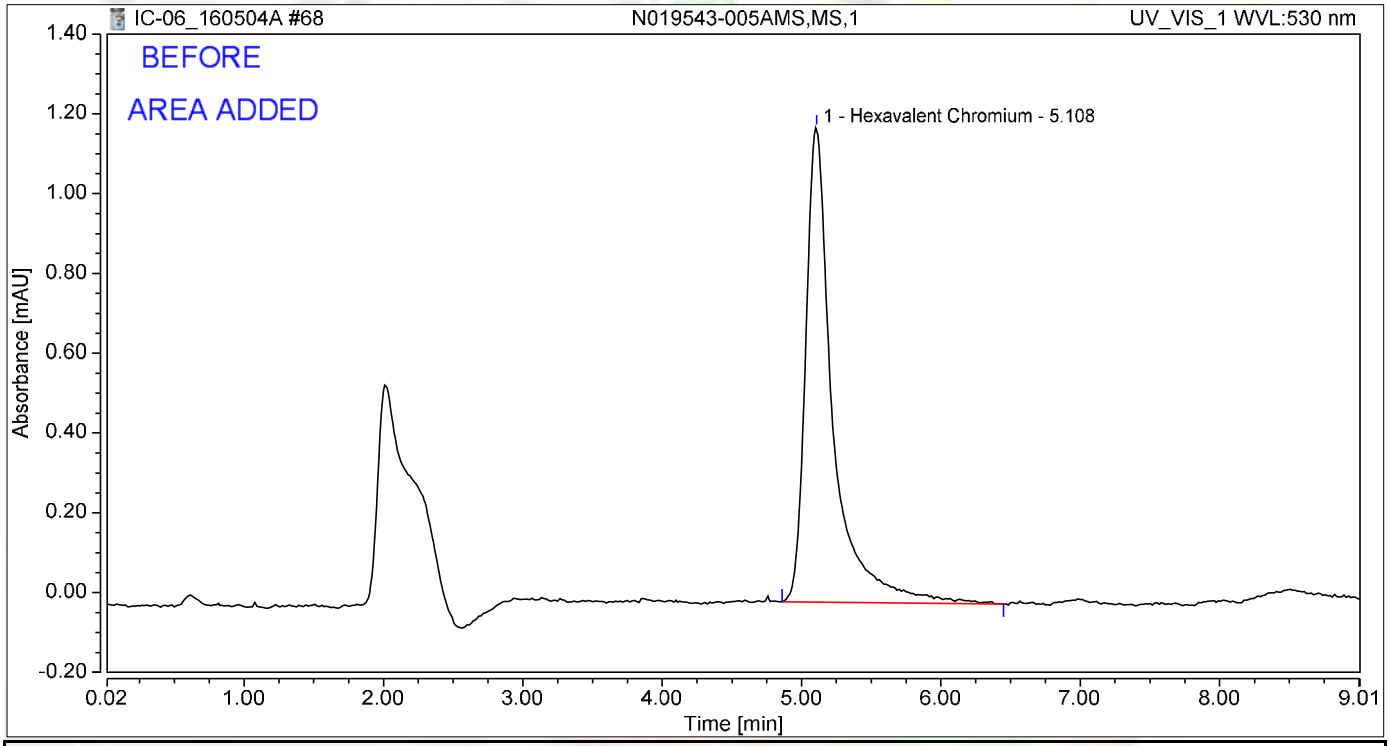
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-005AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.269	1.189	100.00	100.00	1.1356
Total:			**0.269**	**1.189**	**100.00**	**100.00**	

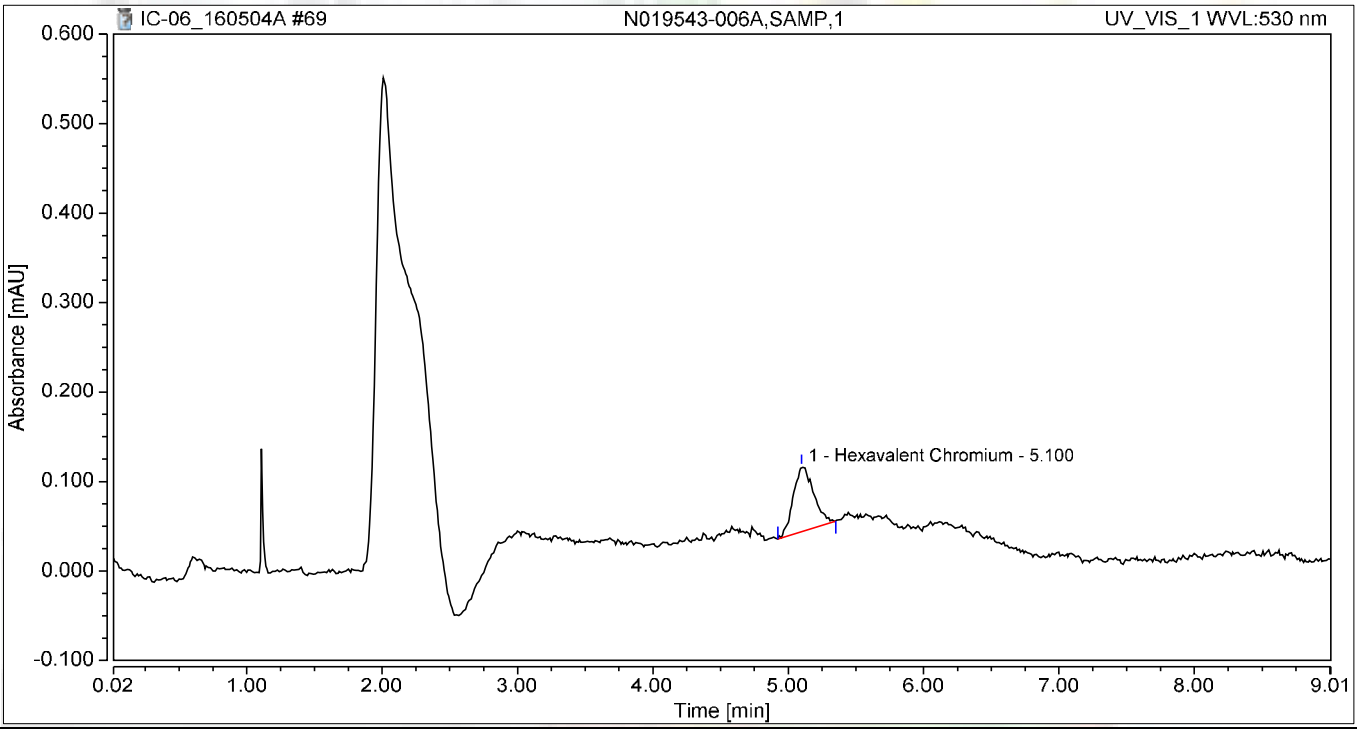
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-006A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

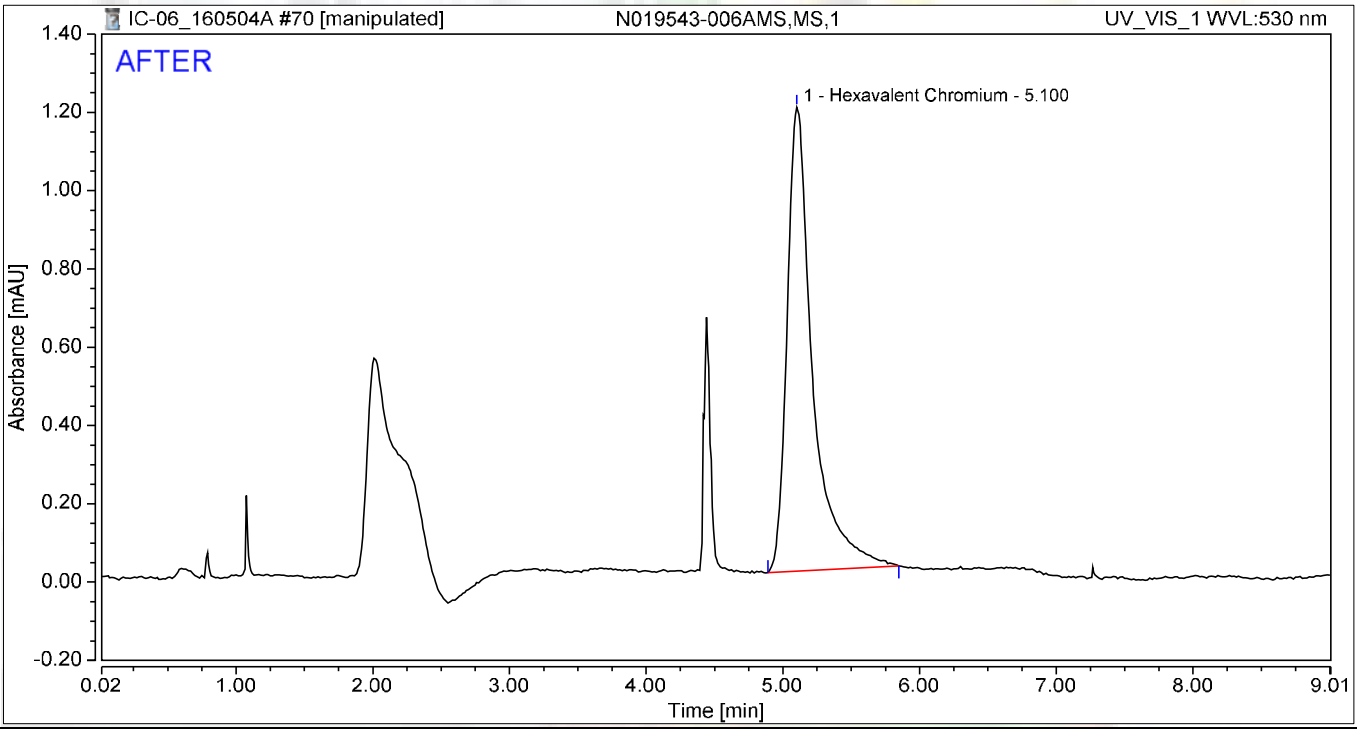
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.013	0.072	100.00	100.00	0.0365
Total:			**0.013**	**0.072**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-006AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.257	1.185	100.00	100.00	1.0820
Total:			**0.257**	**1.185**	**100.00**	**100.00**	

jas 5/10/2016

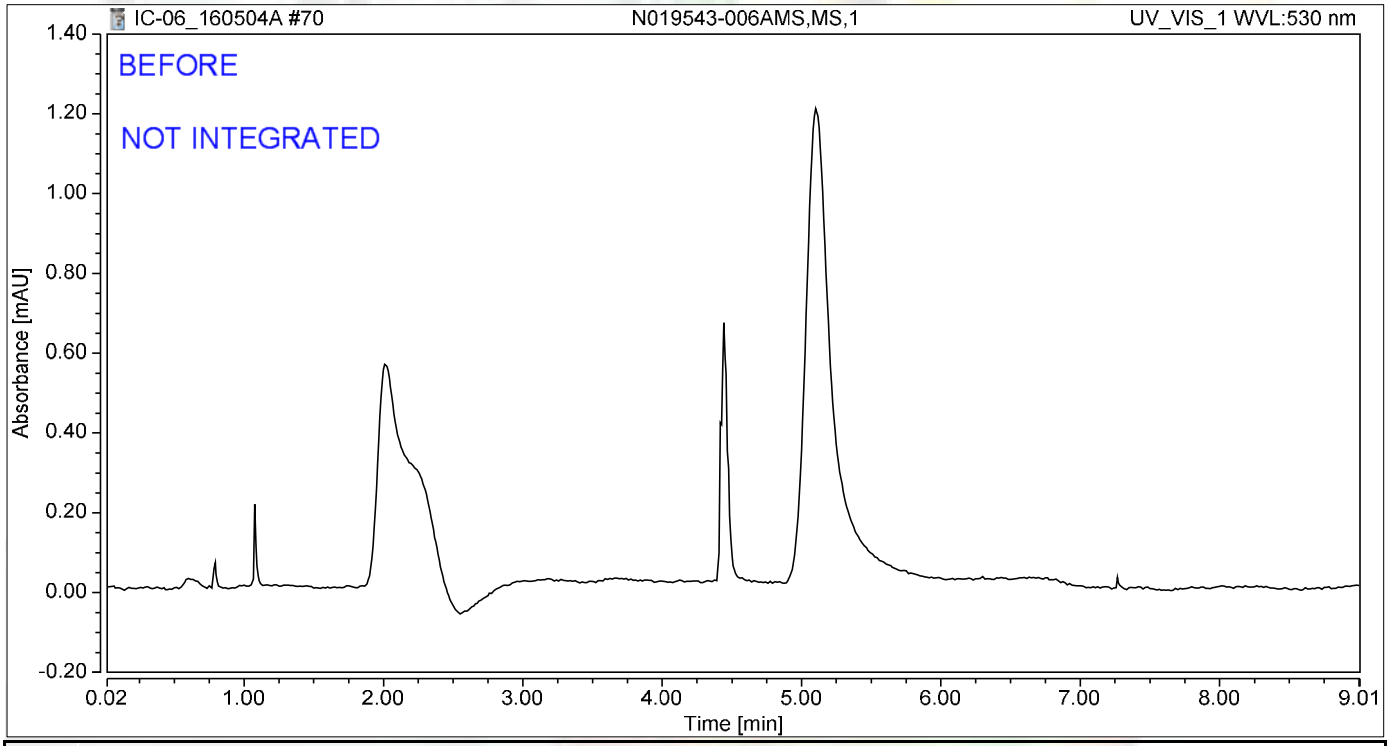
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-006AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

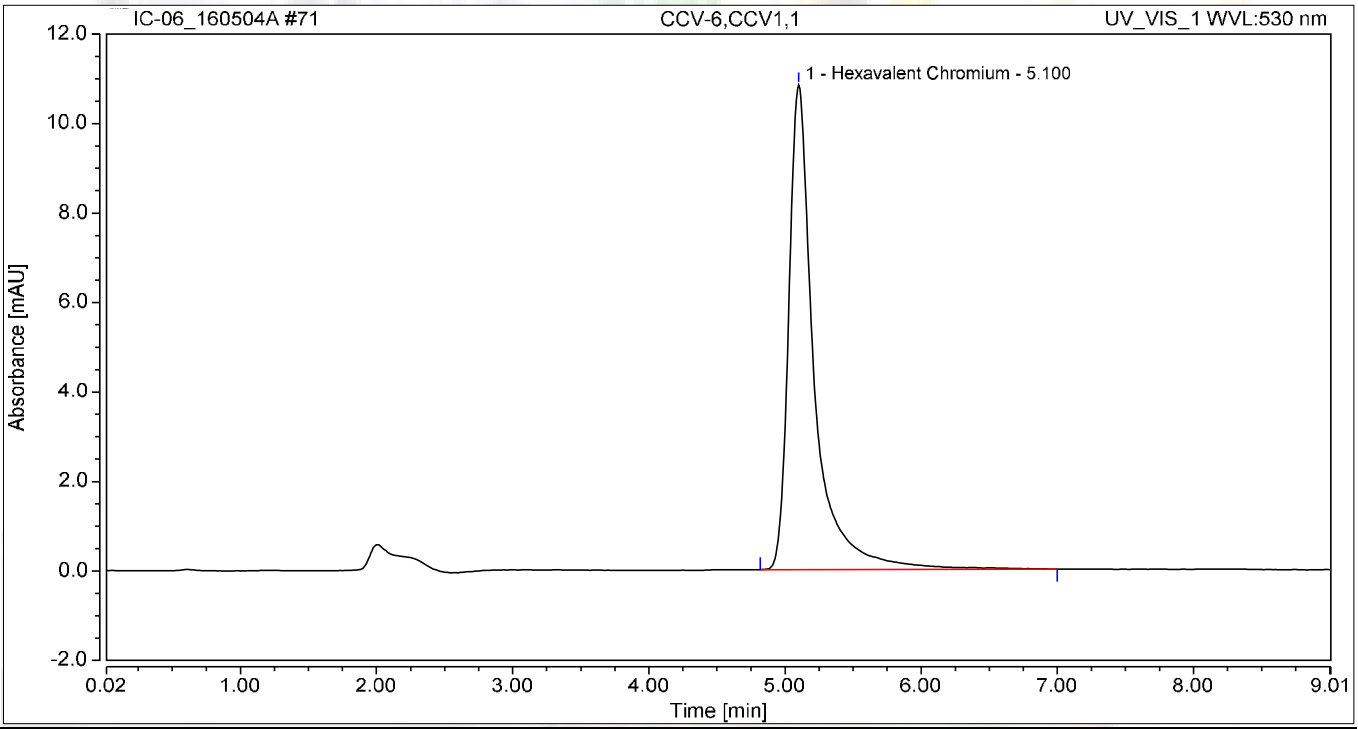
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

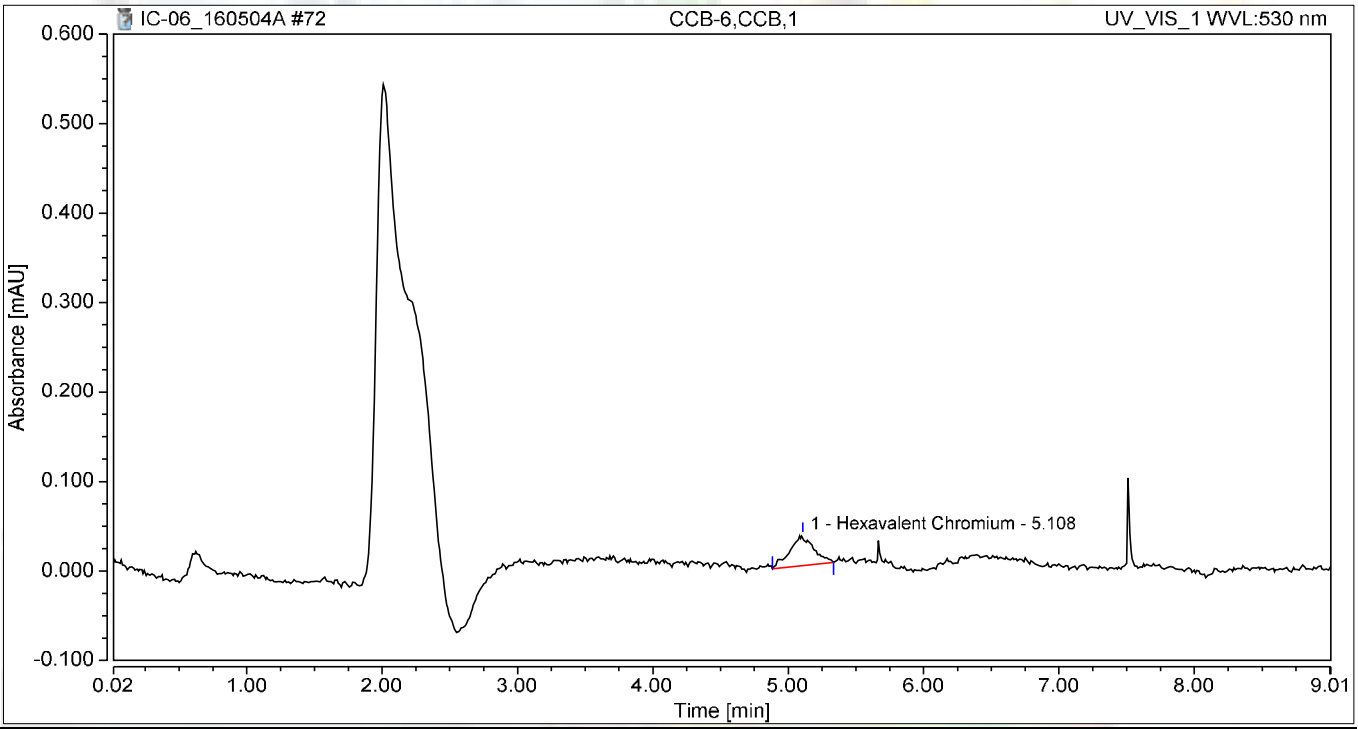
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.366	10.839	100.00	100.00	10.1099
Total:			**2.366**	**10.839**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 18:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

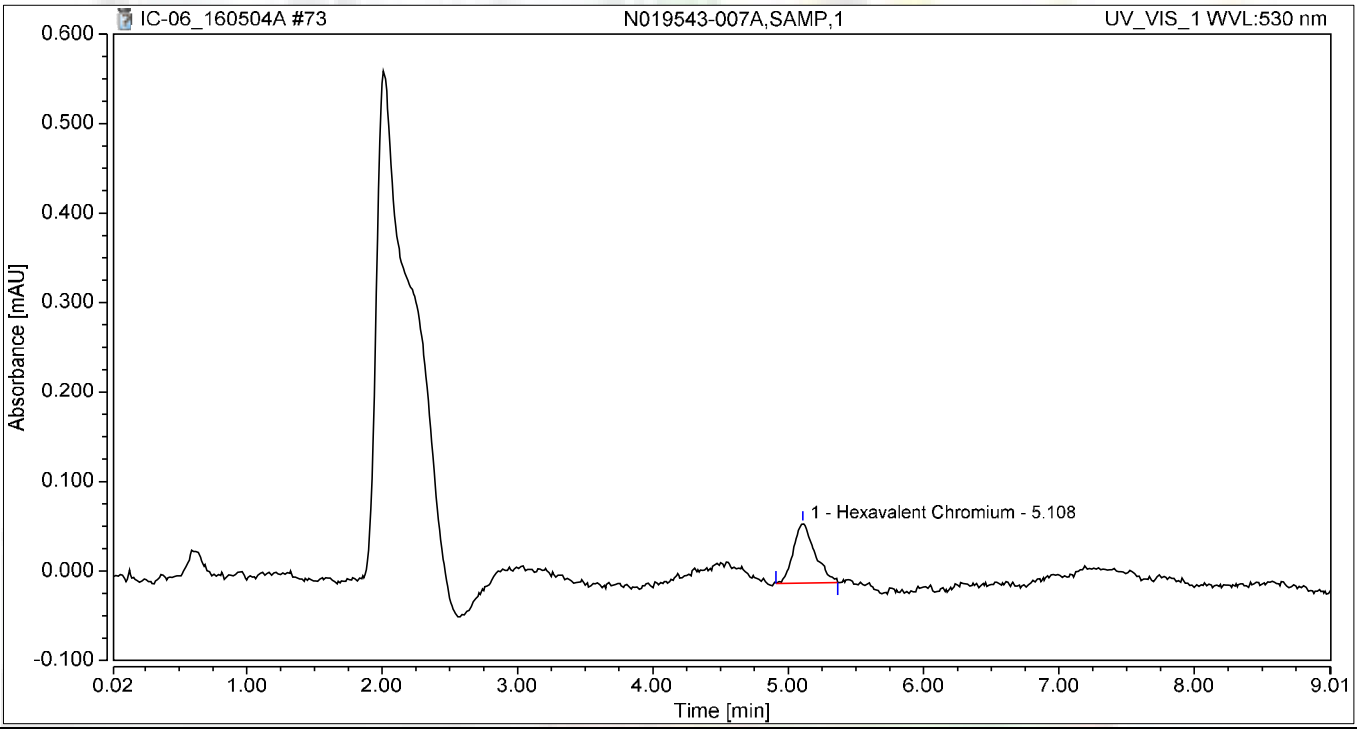
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.007	0.034	100.00	100.00	0.0111
Total:			**0.007**	**0.034**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-007A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

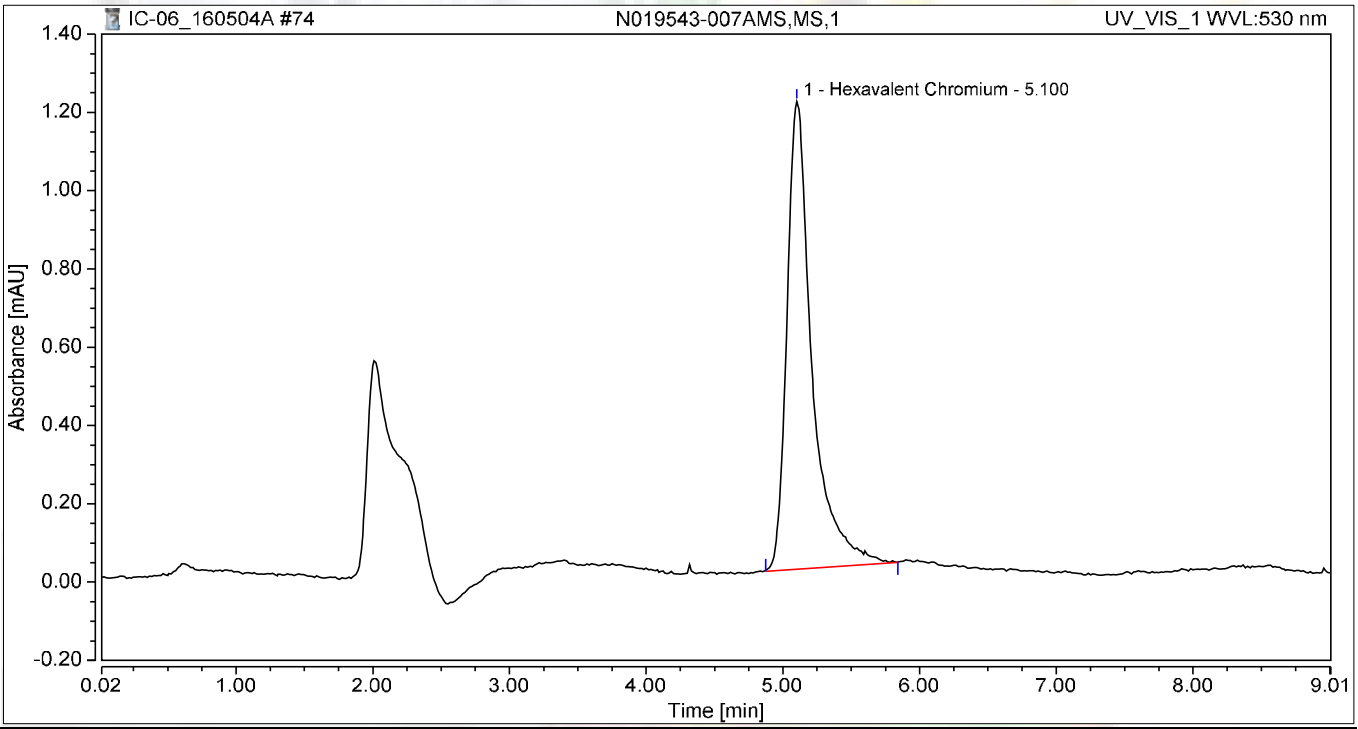
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.012	0.067	100.00	100.00	0.0354
Total:			**0.012**	**0.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-007AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

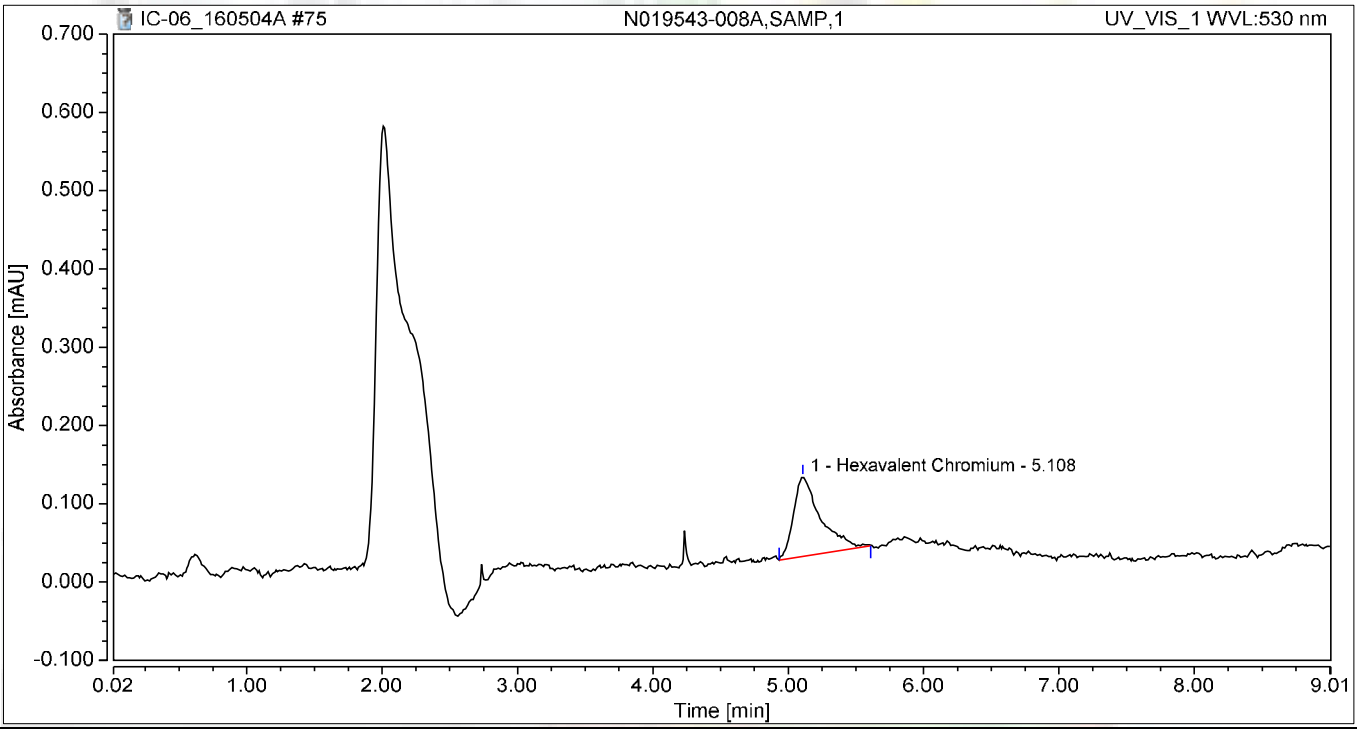
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.254	1.195	100.00	100.00	1.0701
Total:			**0.254**	**1.195**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-008A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

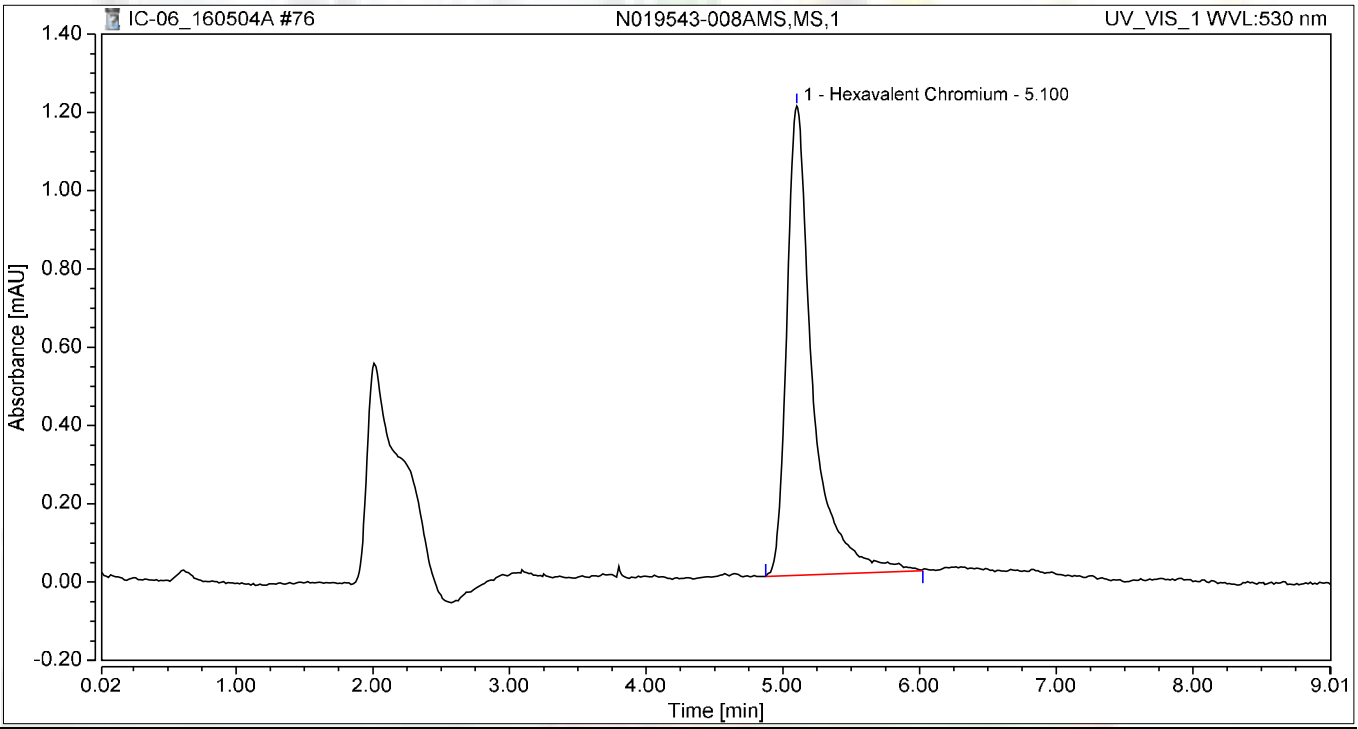
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.024	0.101	100.00	100.00	0.0835
Total:			**0.024**	**0.101**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-008AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

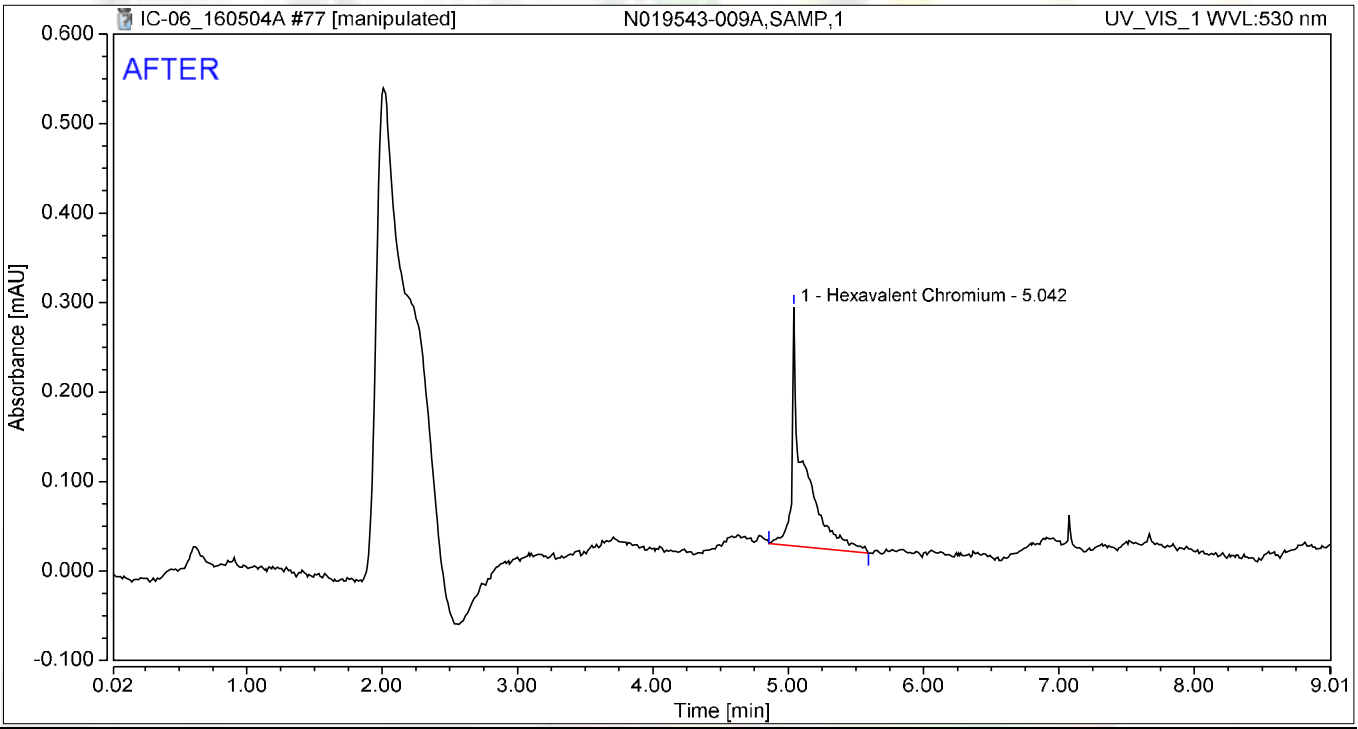
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.264	1.198	100.00	100.00	1.1125
Total:			**0.264**	**1.198**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-009A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.042	0.026	0.267	100.00	100.00	0.0942
Total:			**0.026**	**0.267**	**100.00**	**100.00**	

5/10/2016

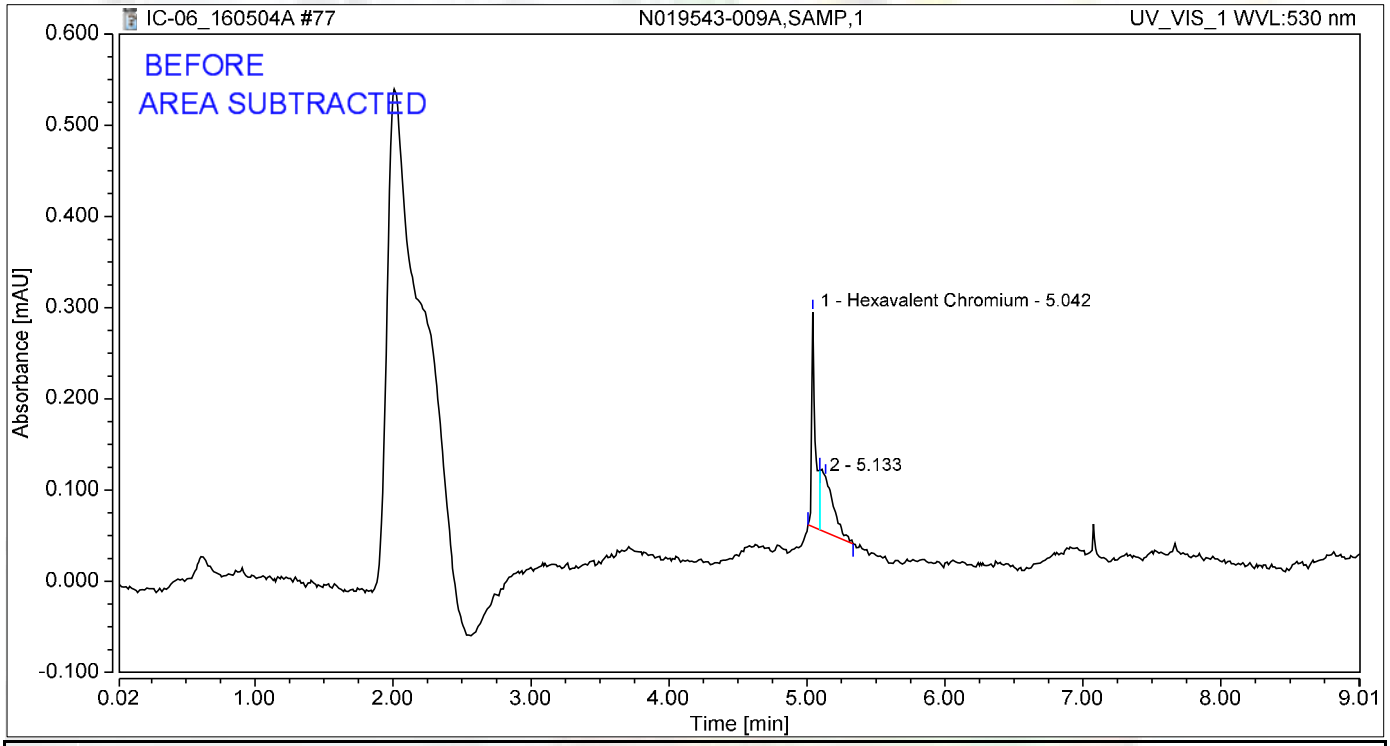
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-009A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.042	0.007	0.235	49.47	79.45	0.0120
2		5.133	0.007	0.061	50.53	20.55	n.a.
Total:			**0.014**	**0.296**	**100.00**	**100.00**	

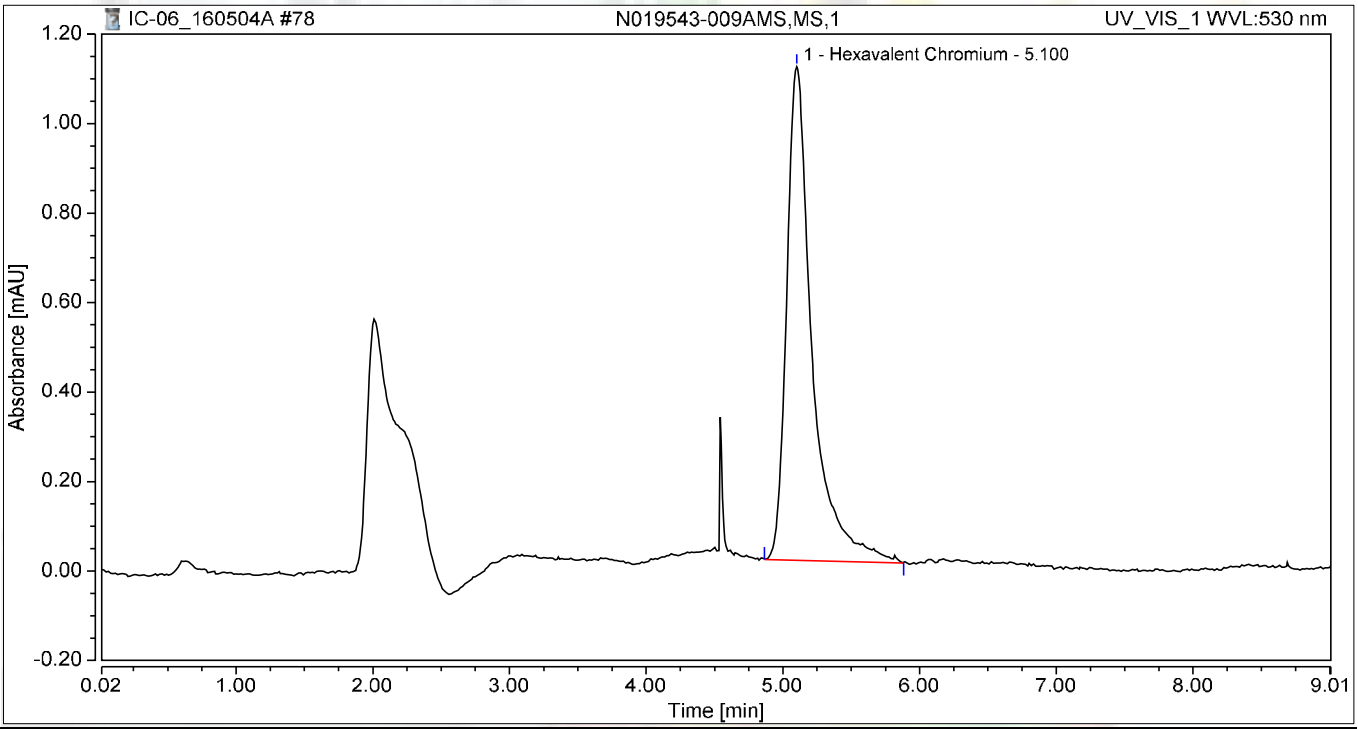
jas 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-009AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 19:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

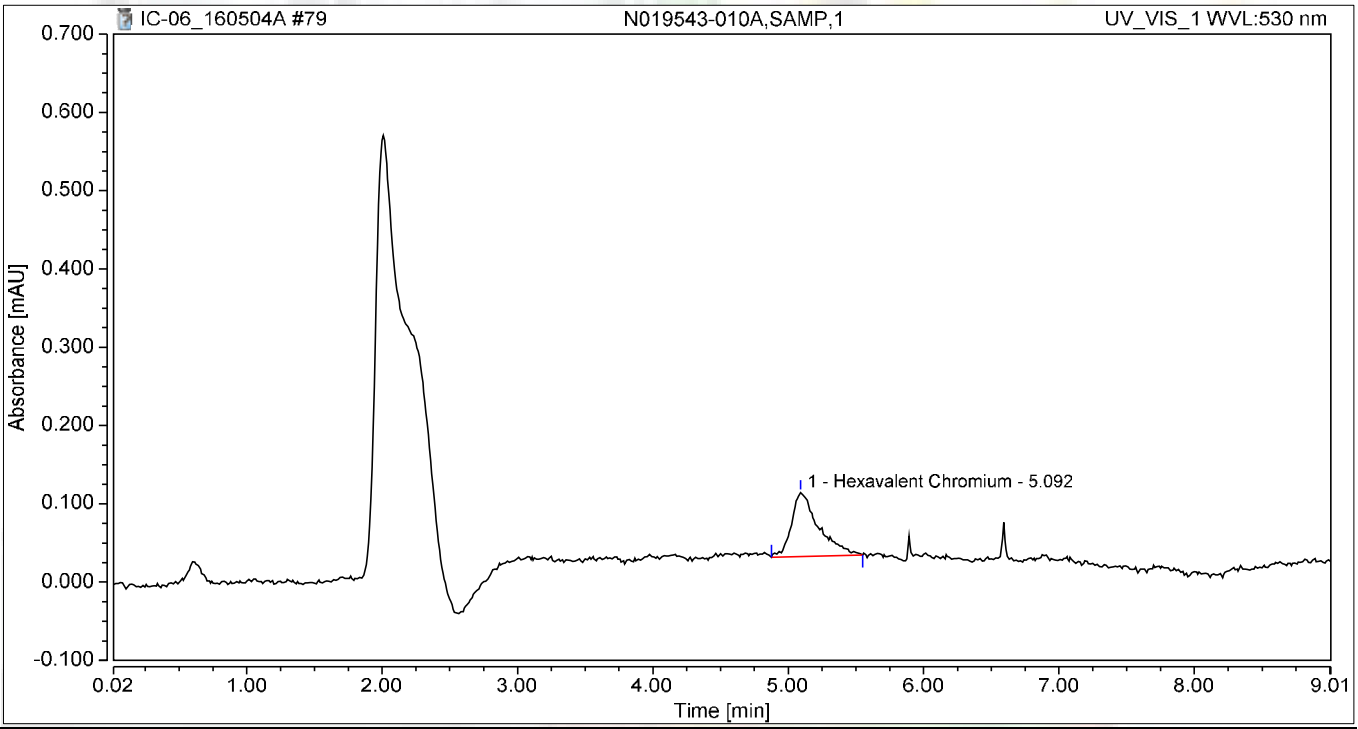
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.238	1.104	100.00	100.00	1.0013
Total:			**0.238**	**1.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-010A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

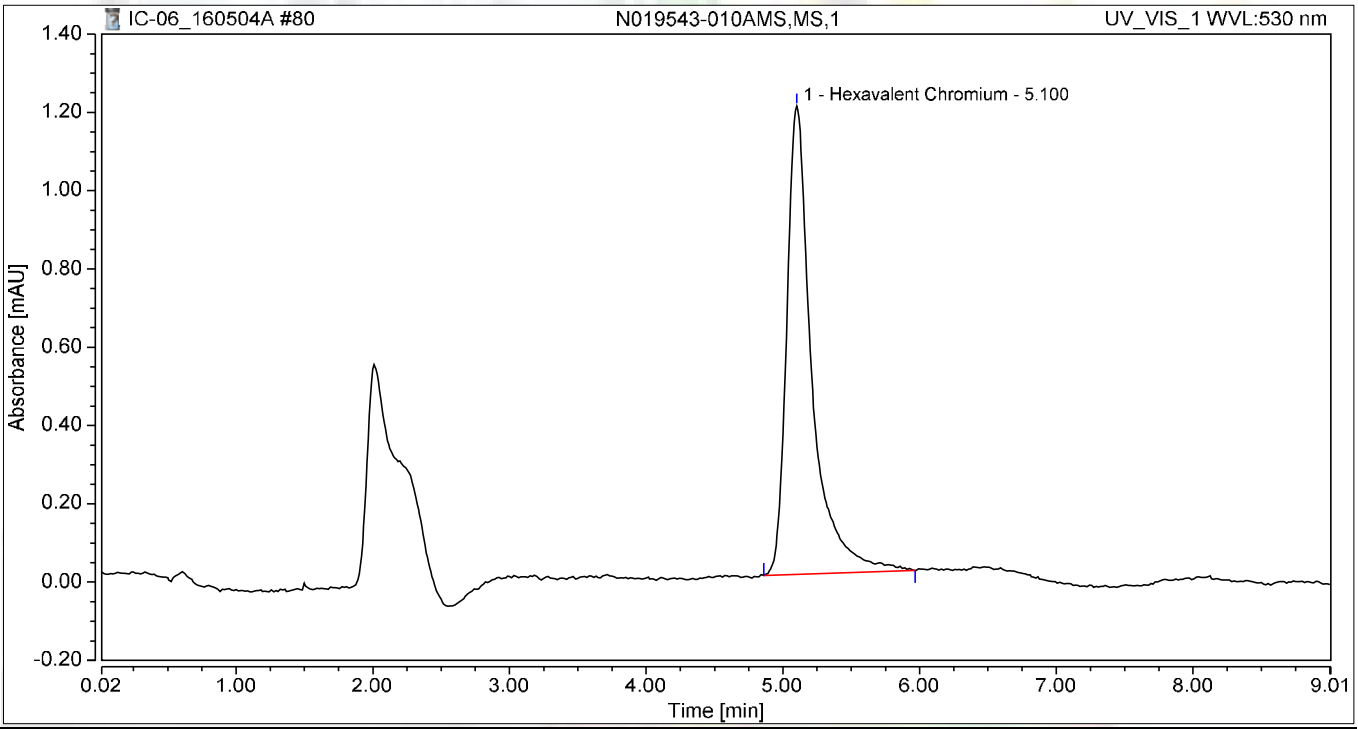
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.019	0.082	100.00	100.00	0.0635
Total:			**0.019**	**0.082**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-010AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

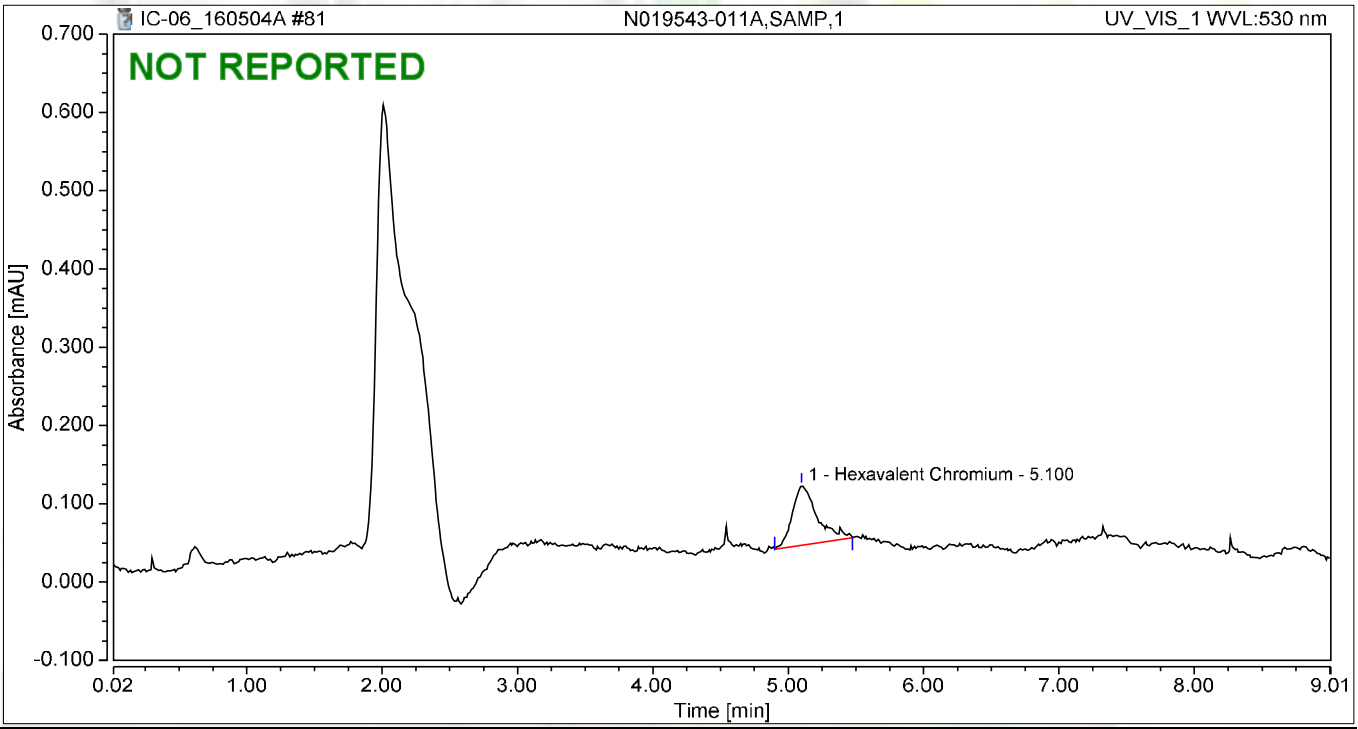
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.256	1.197	100.00	100.00	1.0797
Total:			**0.256**	**1.197**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-011A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

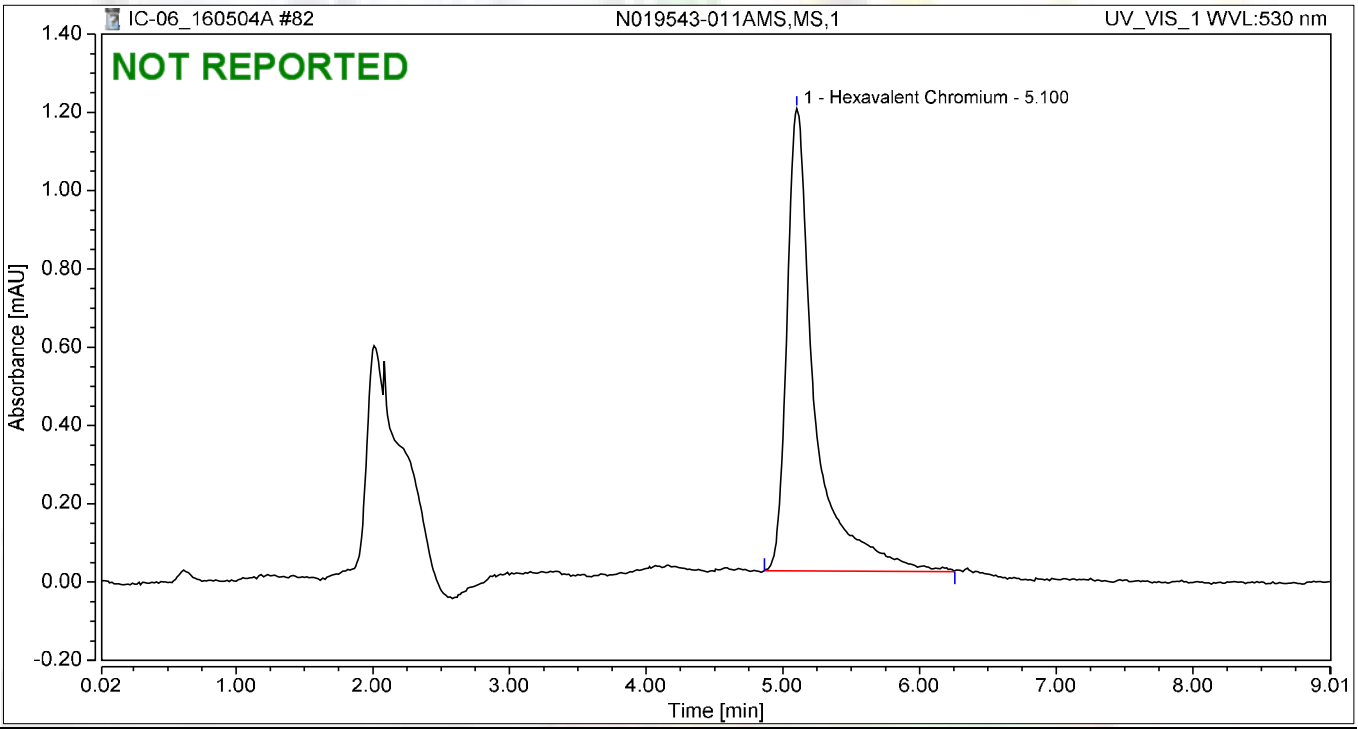
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.016	0.076	100.00	100.00	0.0517
Total:			**0.016**	**0.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-011AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

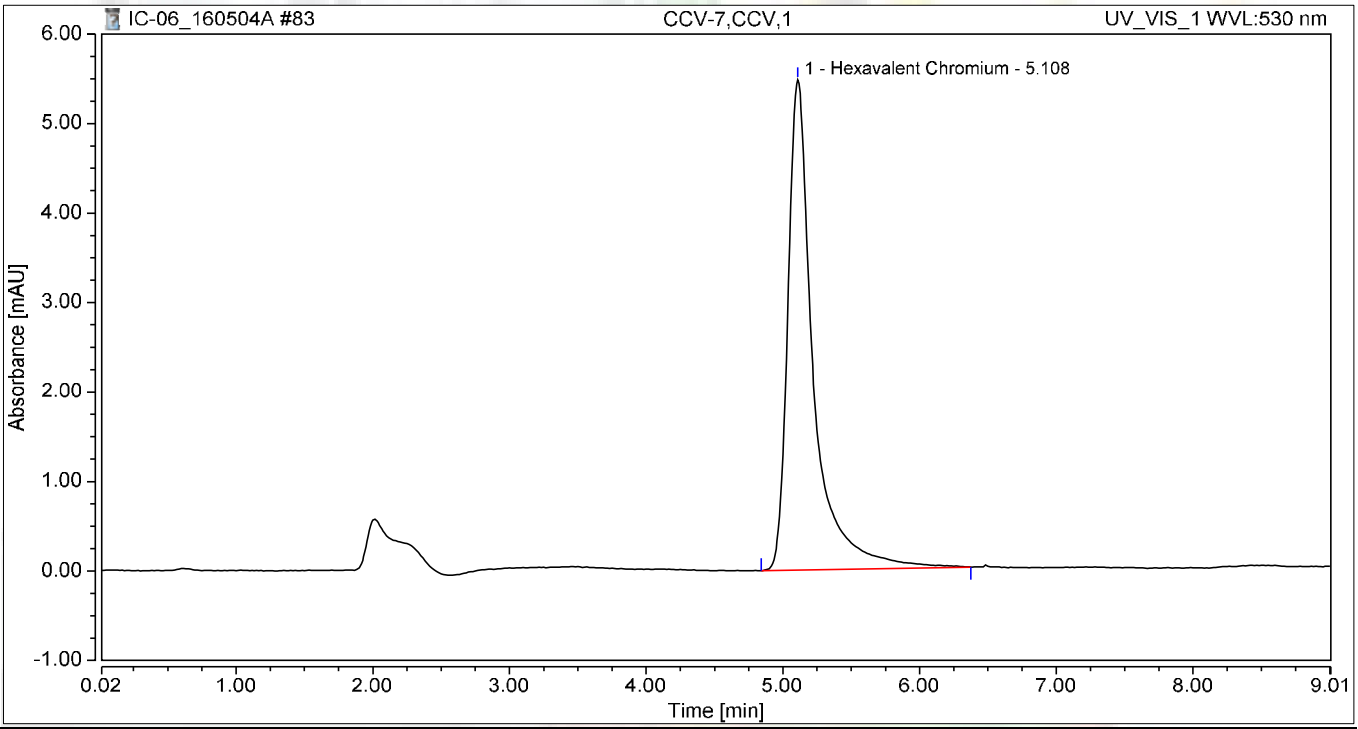
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.278	1.181	100.00	100.00	1.1715
Total:			**0.278**	**1.181**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

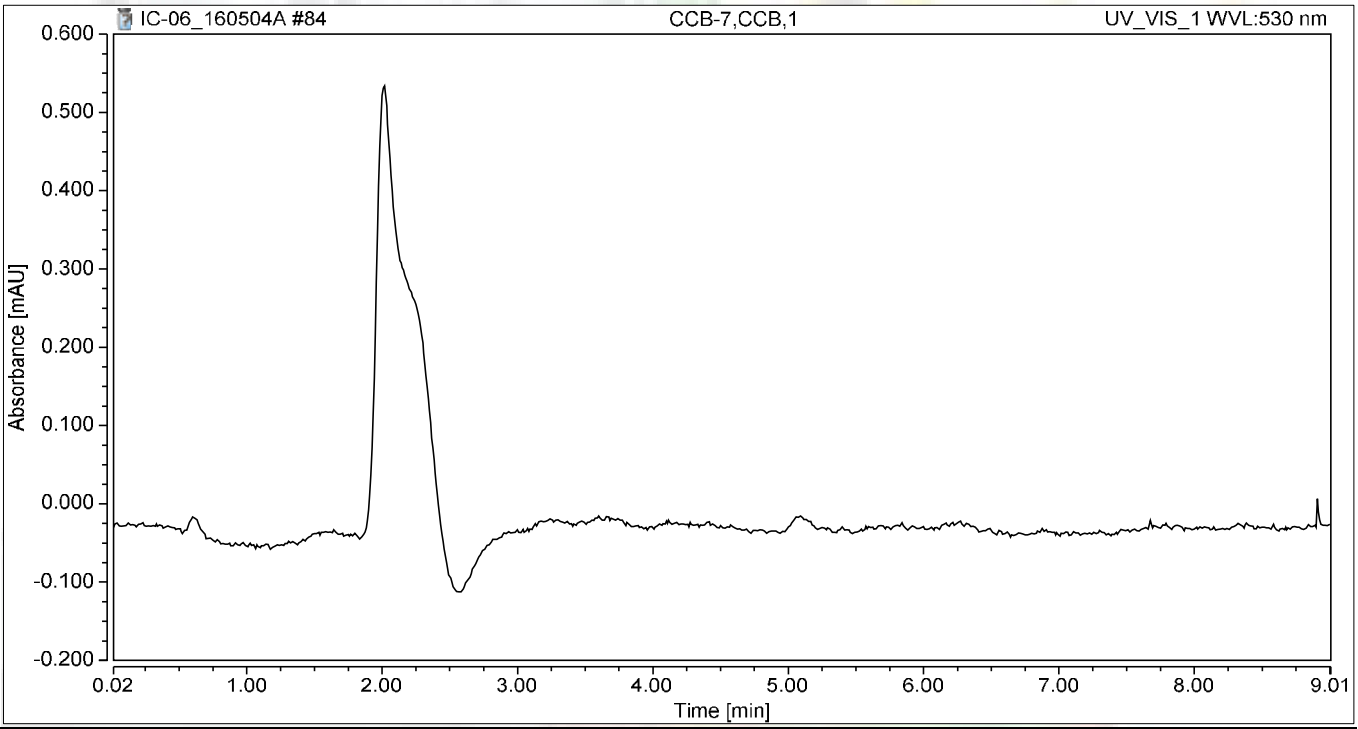
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.189	5.481	100.00	100.00	5.0707
Total:			**1.189**	**5.481**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 20:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

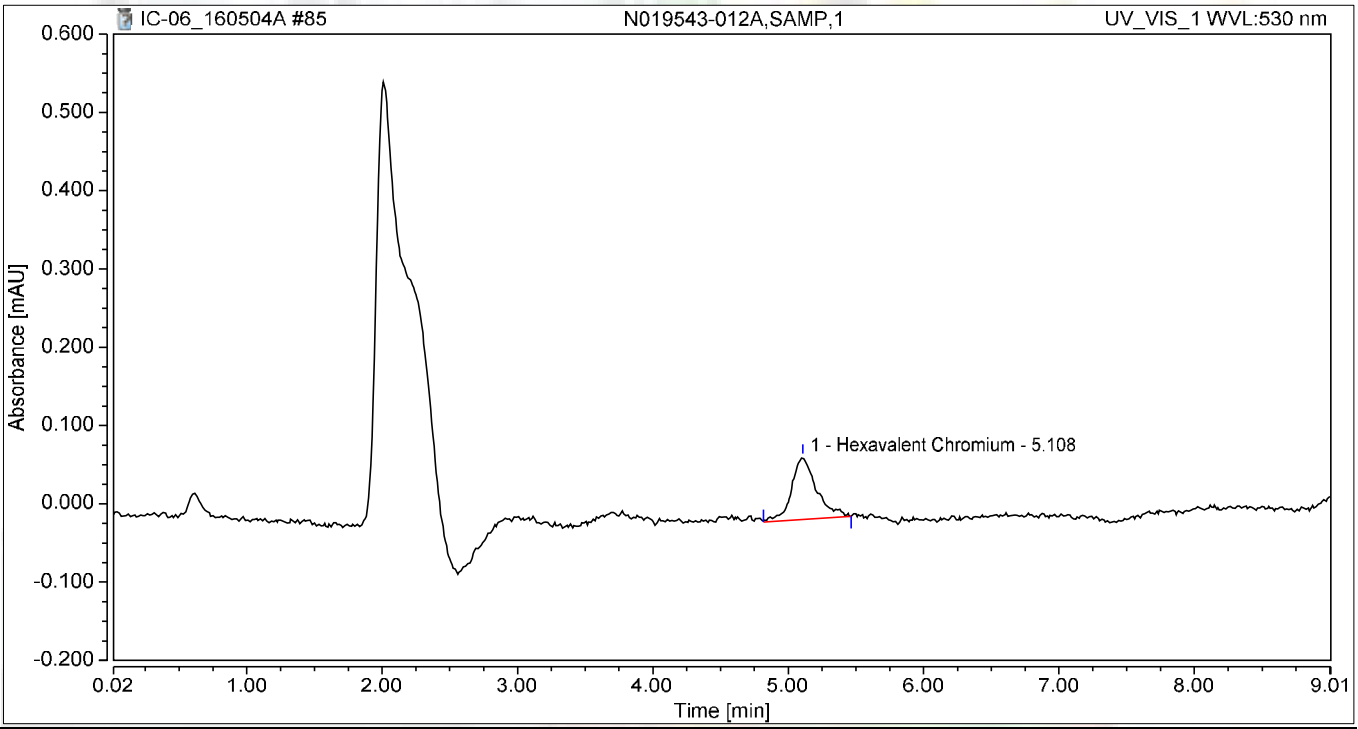
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-012A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

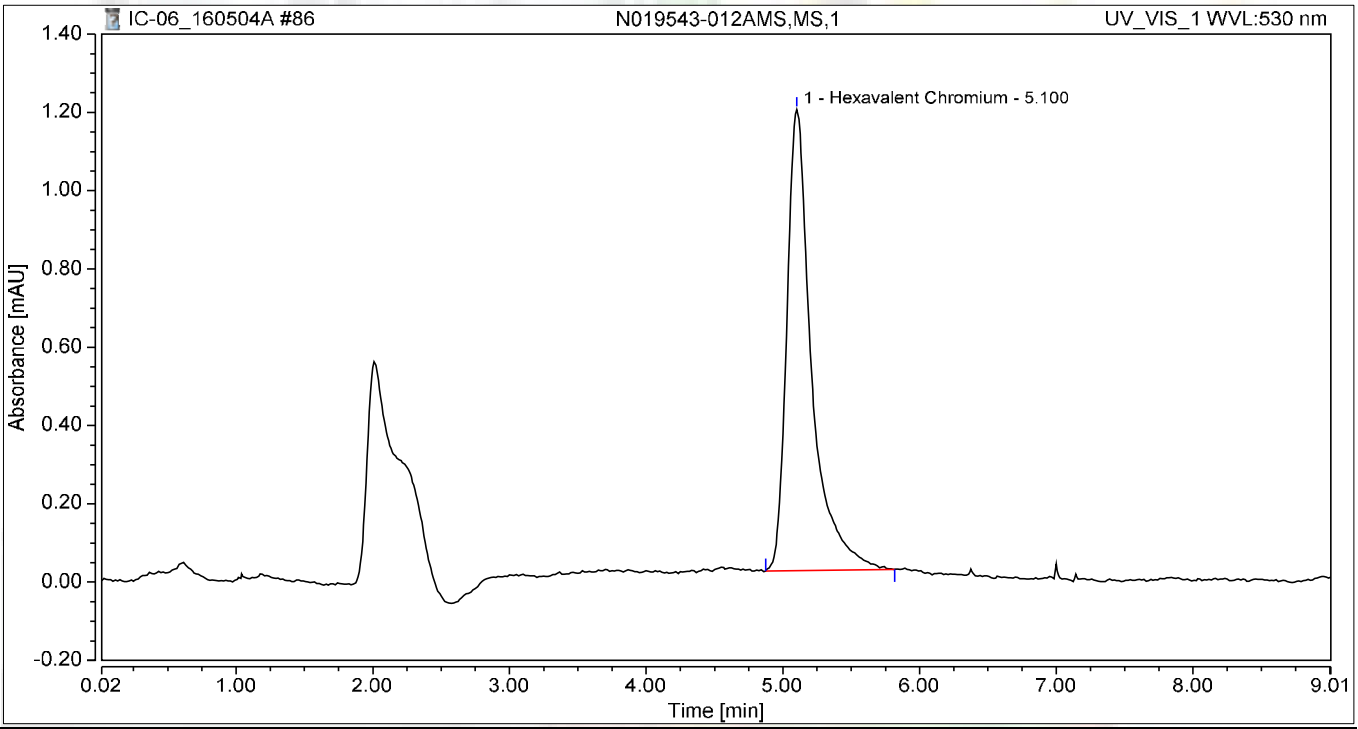
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.017	0.080	100.00	100.00	0.0548
Total:			**0.017**	**0.080**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-012AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

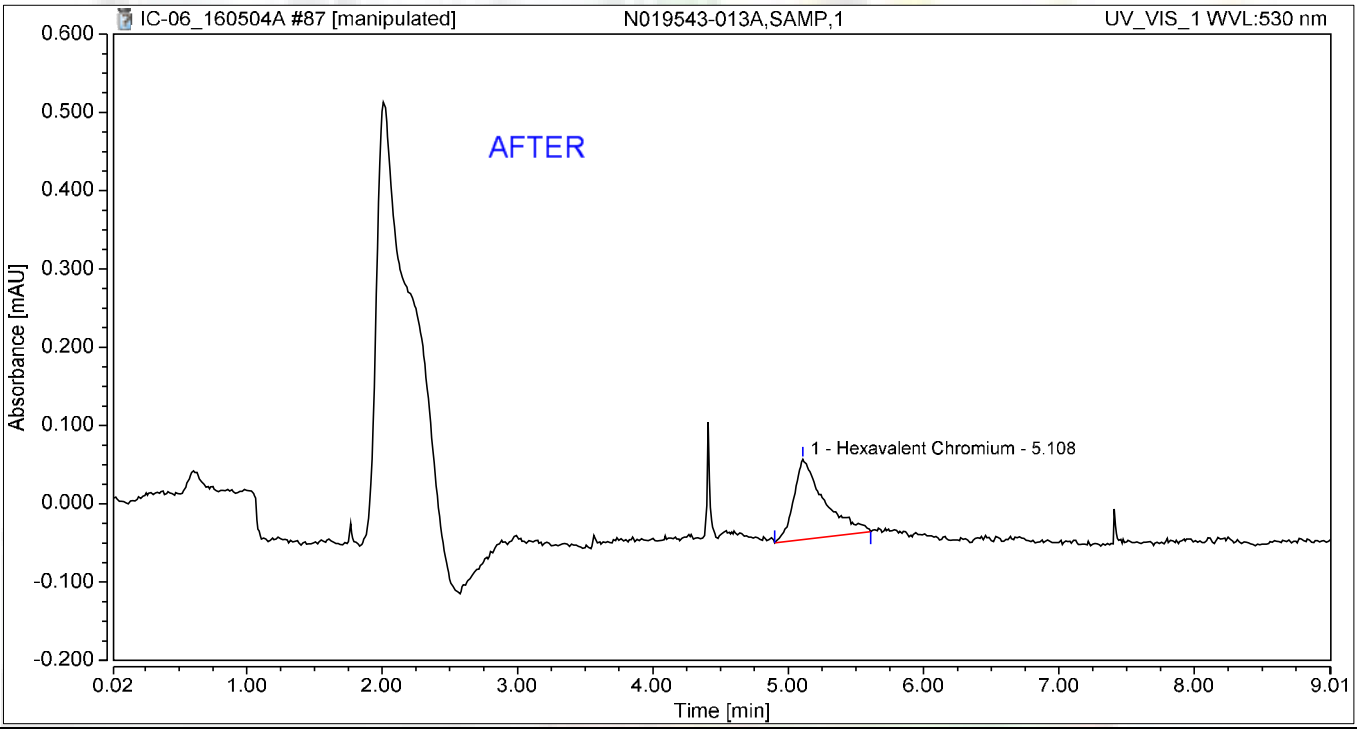
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.248	1.178	100.00	100.00	1.0436
Total:			**0.248**	**1.178**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-013A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.027	0.102	100.00	100.00	0.0957
Total:			**0.027**	**0.102**	**100.00**	**100.00**	

5/10/2016

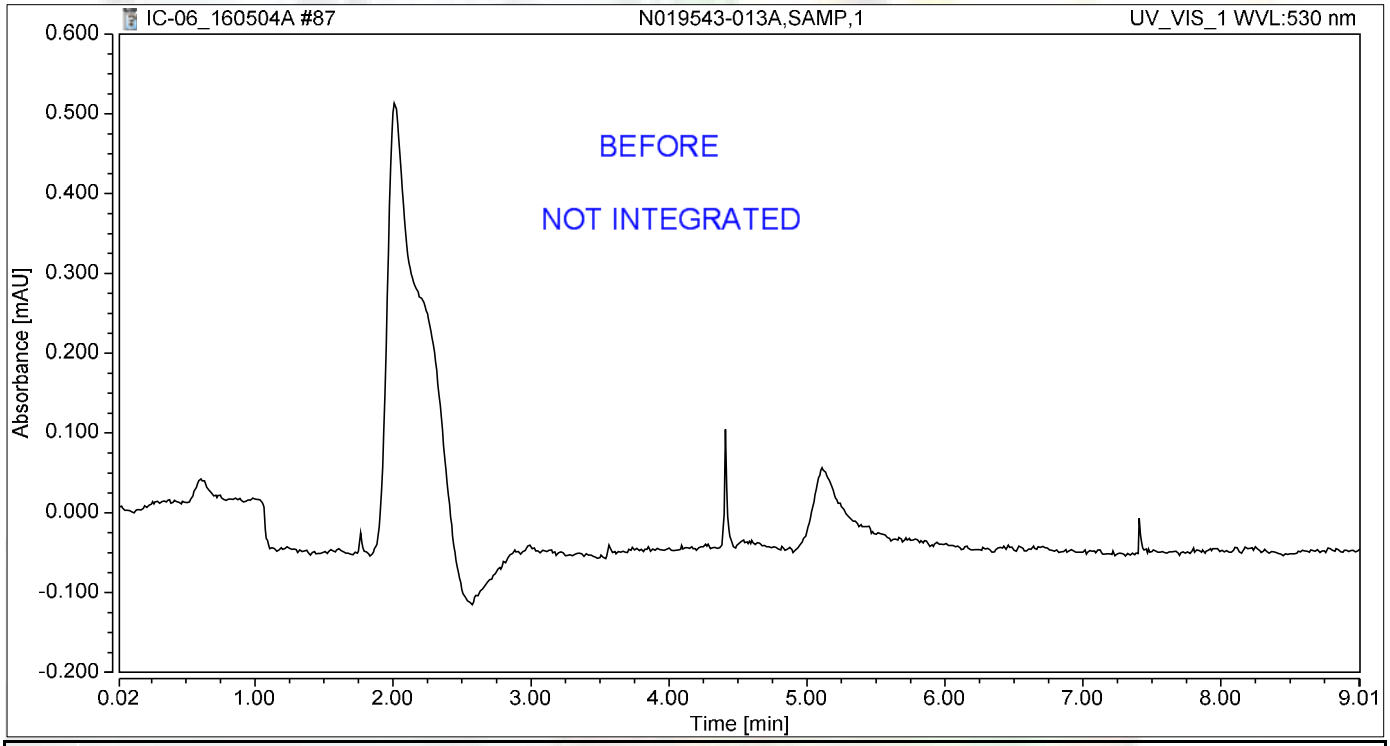
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-013A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

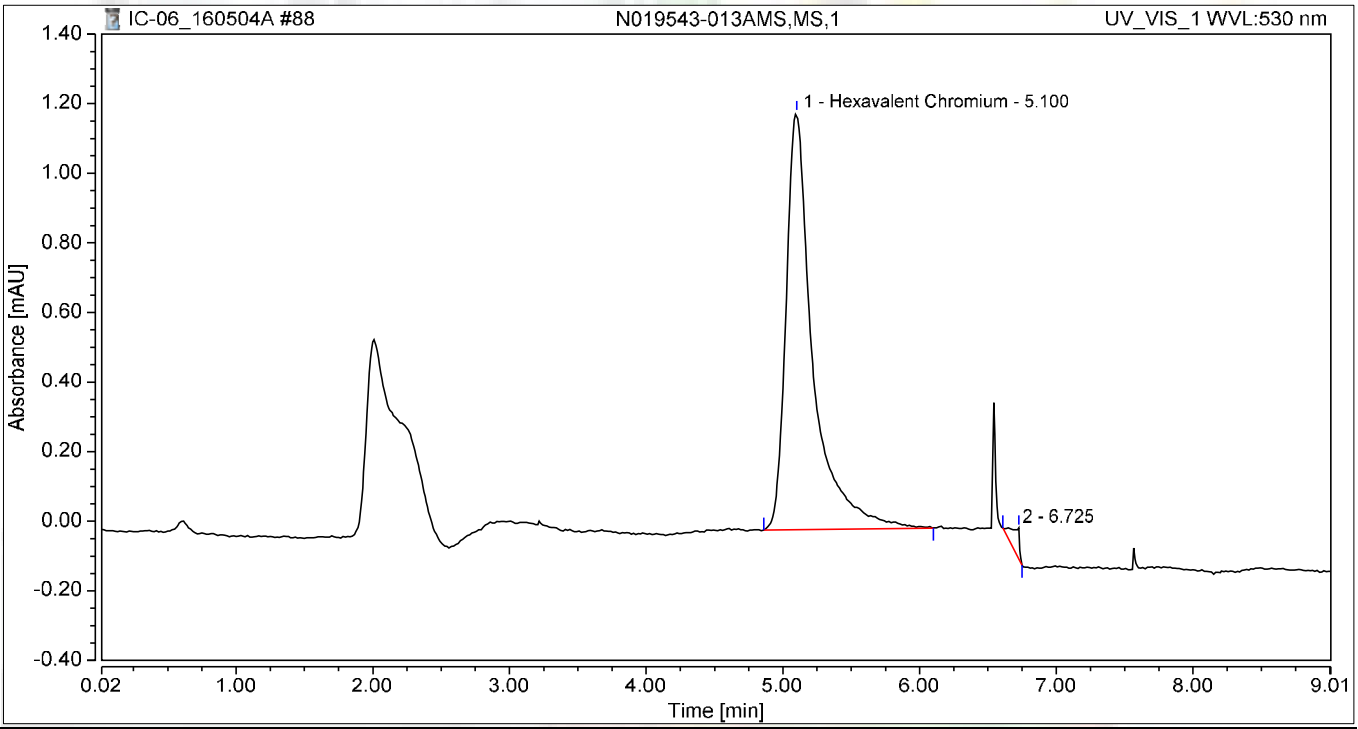
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019543-013AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

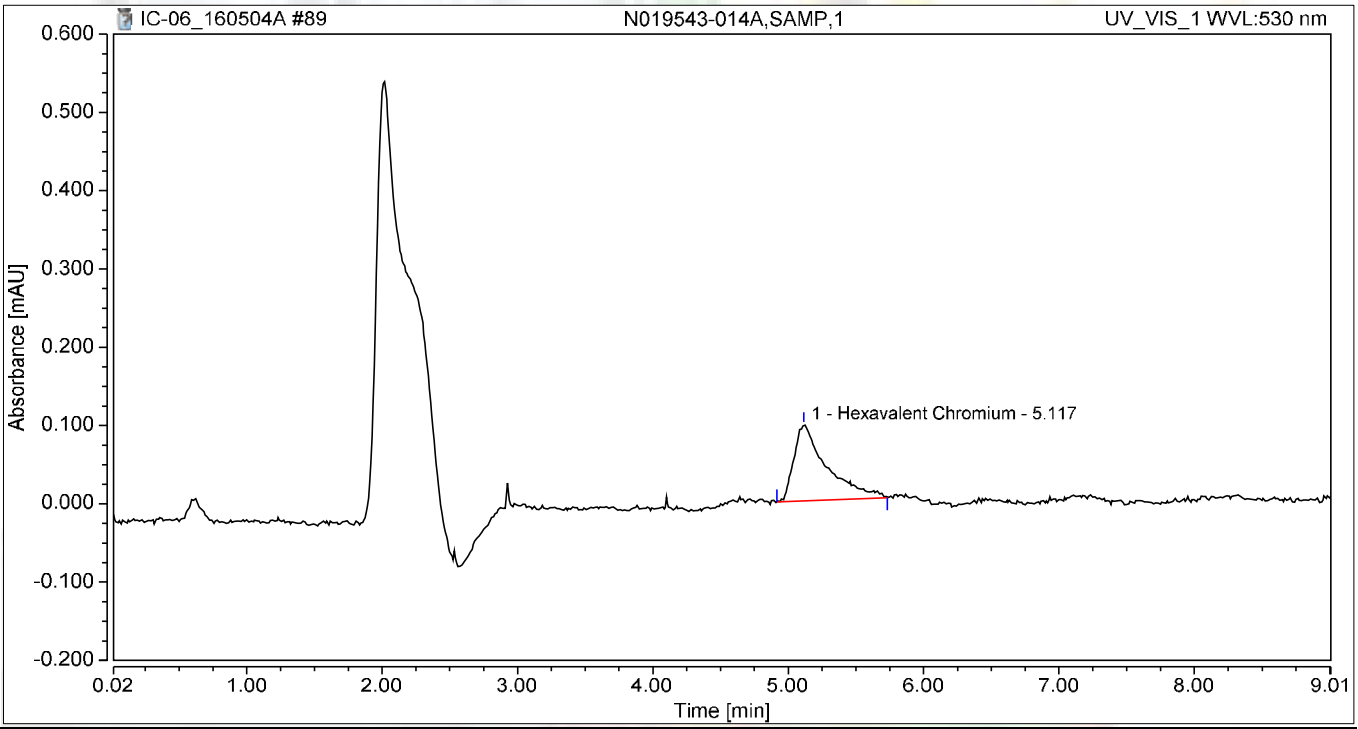
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.272	1.197	98.01	93.16	1.1482
2		6.725	0.006	0.088	1.99	6.84	n.a.
Total:			**0.278**	**1.285**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-014A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

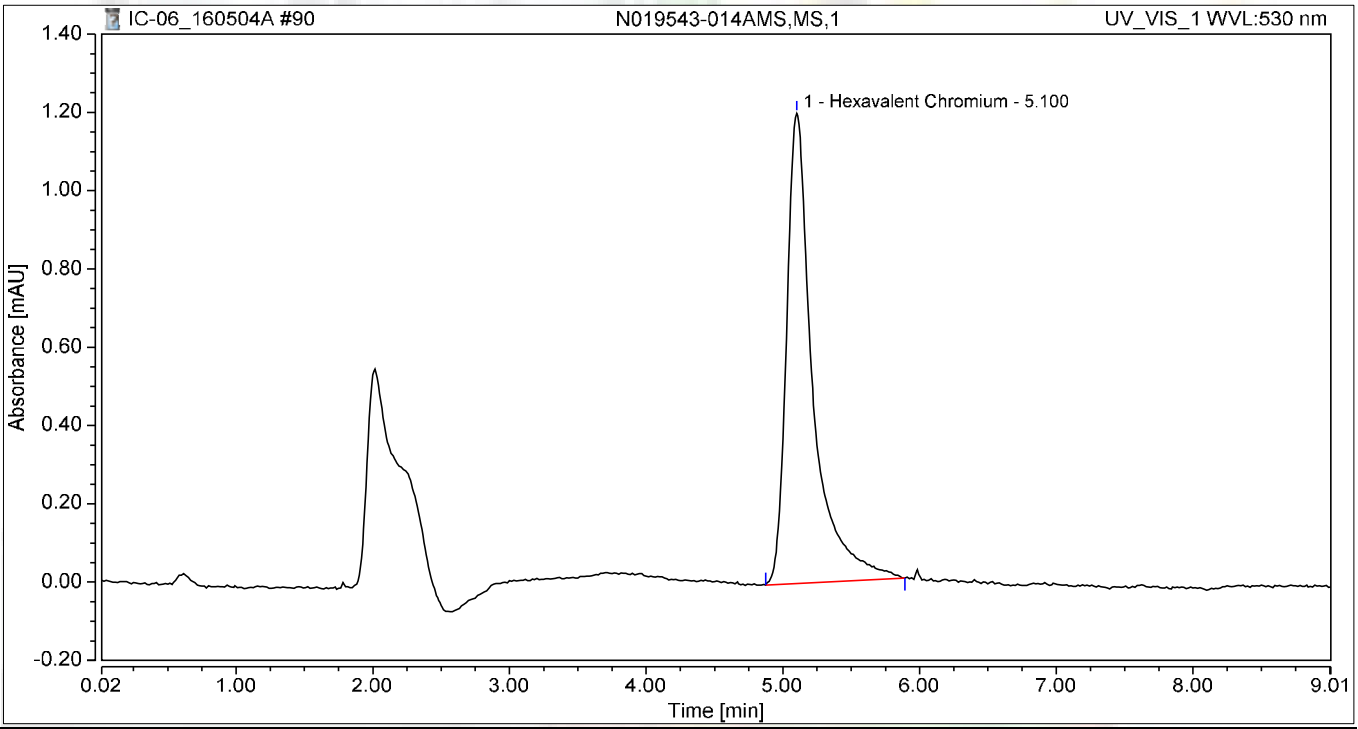
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.028	0.097	100.00	100.00	0.0998
Total:			**0.028**	**0.097**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-014AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 21:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

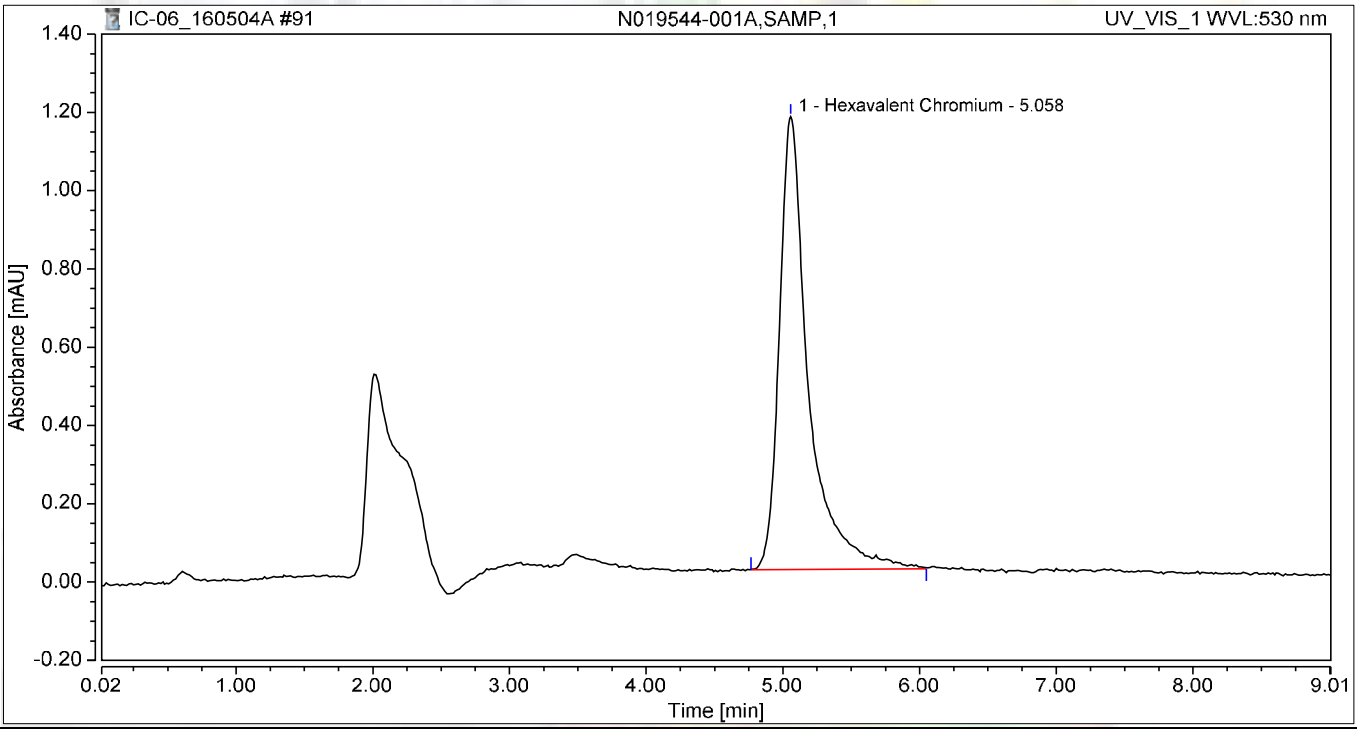
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.269	1.201	100.00	100.00	1.1321
Total:			**0.269**	**1.201**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019544-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

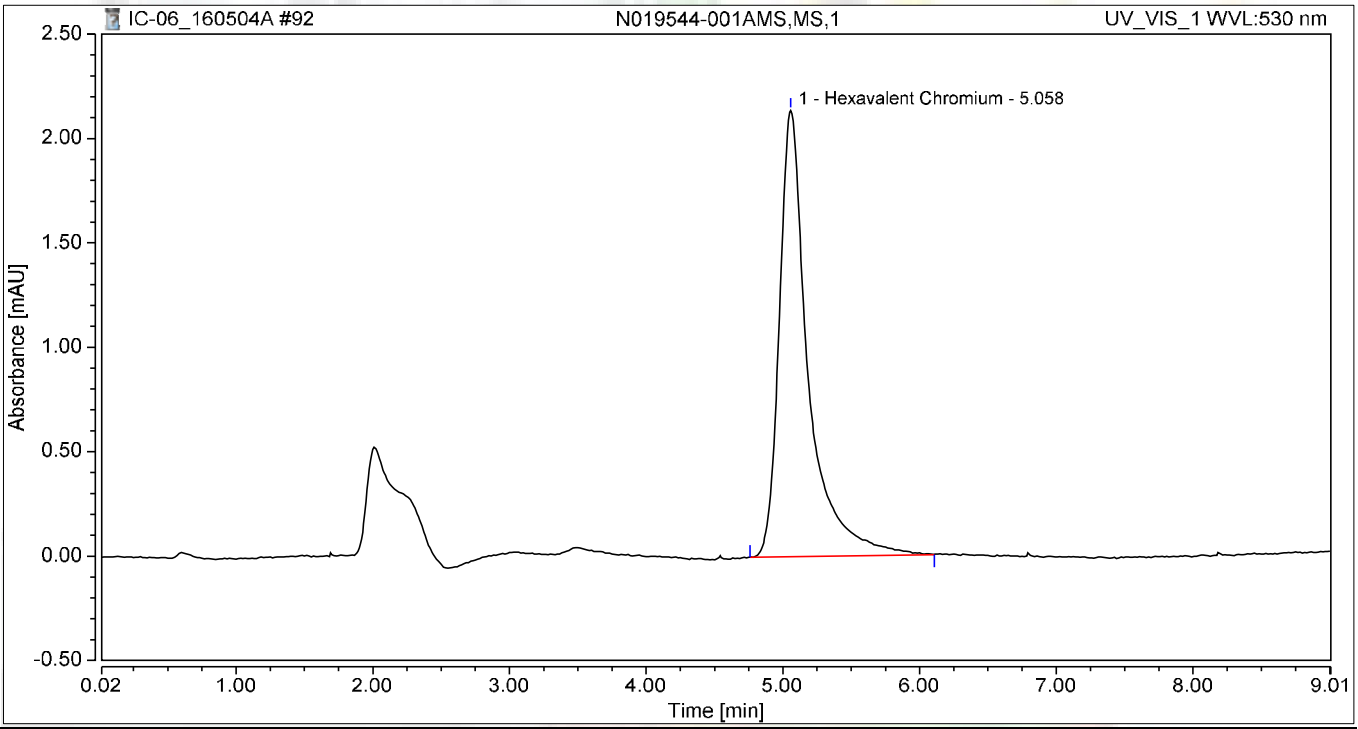
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.058	0.285	1.157	100.00	100.00	1.2010
Total:			**0.285**	**1.157**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019544-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

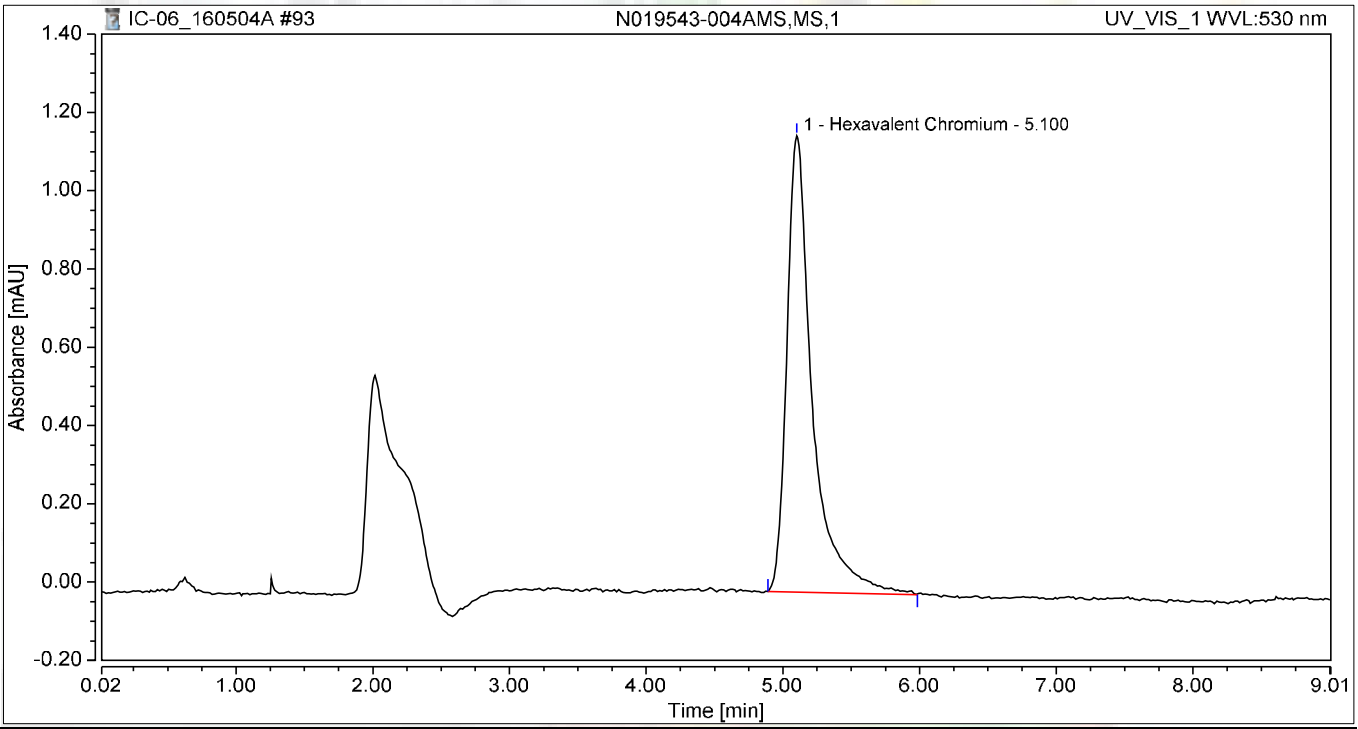
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.058	0.525	2.138	100.00	100.00	2.2313
Total:			**0.525**	**2.138**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-004AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

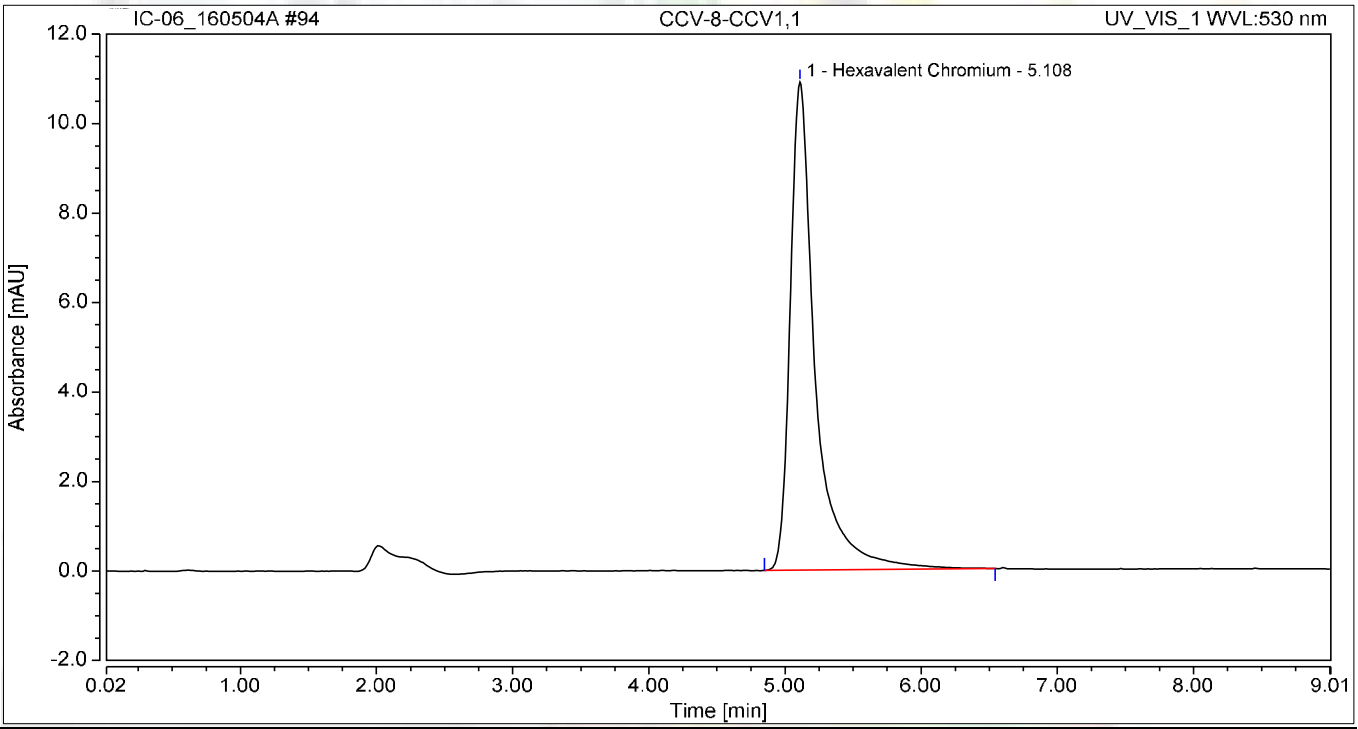
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.252	1.165	100.00	100.00	1.0616
Total:			**0.252**	**1.165**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8-CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

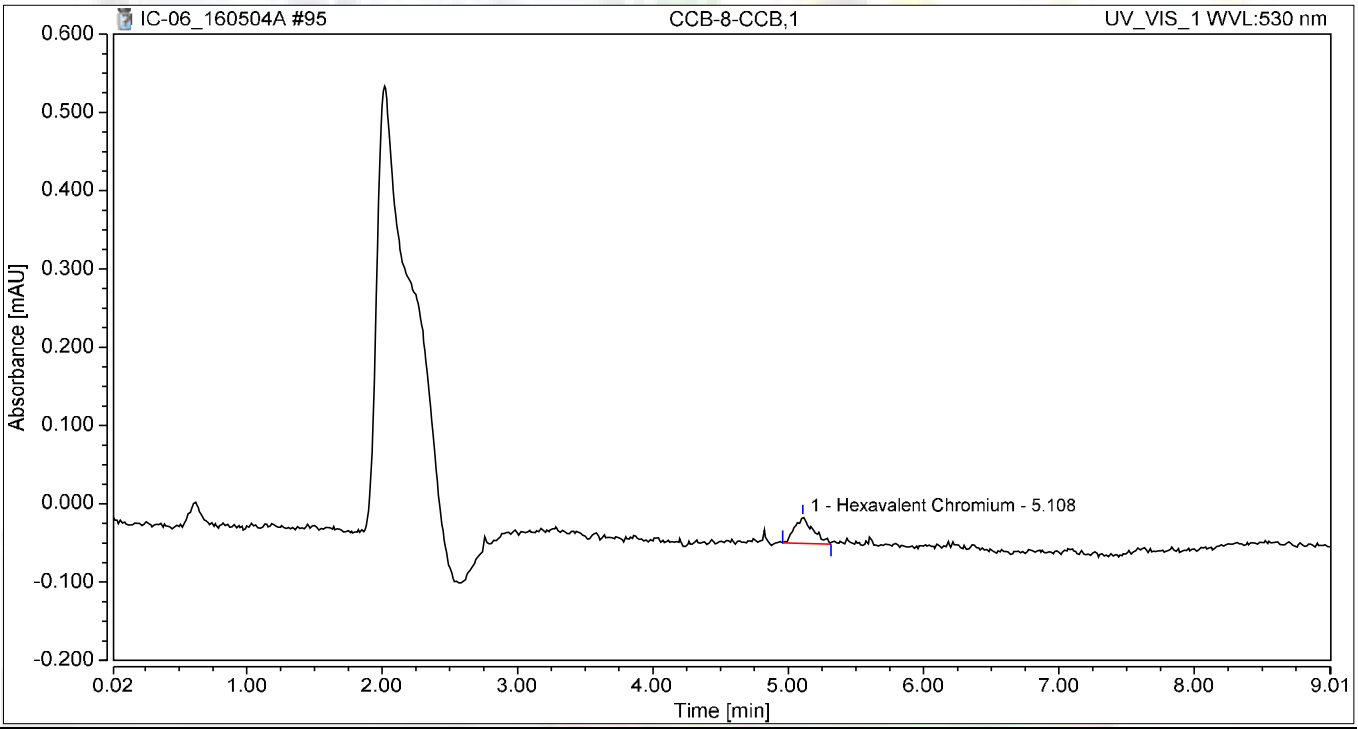
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.335	10.912	100.00	100.00	9.9795
Total:			**2.335**	**10.912**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8-CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/16 22:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.005	0.033	100.00	100.00	0.0045
Total:			**0.005**	**0.033**	**100.00**	**100.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108282 **Analyst:** QBM

ASSET #: N019544/N019606/N019607 **Date Analyzed:** 5/4/2016

Method: SM2320

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/13/2016

2nd Level Reviewer 5/16/2016 Date: _____

SAMPLE CALCULATION

Sample ID: **N019544-001C @ pH 7.68**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.875mL)

= **0.02105 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (9.85) (0.02105 N) (1) * 1000

=207.3425 **mg/L**

Reporting results in two significant figures,

= 210 **mg/L** as CaCO3

5/13/2016

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02105 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (9.85 mL) (0.02105) (1) * 1000

= 207.3425 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 207.3425 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 210 **mg/L**

5/13/2016

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Alkalinity Preparation and Runlog

Book #5

Matrix: H_2O

Date Extracted: 5/11/16
Time Extracted:
Extracted By:

Date Analyzed: 5/11/16
Time Analyzed: 5:15 PM
Analyzed By:

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-160125B
Hydrochloric Acid: —
Sulfuric Acid: H160308A
$NaHCO_3$: CINV-150601A

pH meter calibration: slope: 98.4%
pH 4 - 4.00 CINV-150825B
7 - 7.01 CINV-160309A
10 - 10.00 CINV-160111D

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.65	IWST160504A	5 mL	0.05 N	—	—	11.90	50/50	$N_{H_2SO_4} = \frac{(2.65\,g/L)(5\,mL)}{53\,(V_t titrant)}$	0.02105363 N
	#2	1	10.66	1	1	1	—	—	11.85	1		
1)	MBLK	50 mL	5.42	—	—	—	0.02105	0	0.05	50/50		
2)	LCS	1	8.32	IWST160504B	1mL	0.05 N	1	0	4.80	1		
3)	N0196544-001C		7.68	—	—	—		0	9.85			
4)	1 2C		7.45	—	—	—		0	7.10			
5)	N0196606-001D		7.54	—	—	—		0	6.20			
6)	1 2D		7.58	—	—	—		0	4.30			
7)	1 3D		7.53	—	—	—		0	4.30			
8)	N0196607-001D		7.56	—	—	—		0	5.65			
9)	N0196613-001A		7.64	—	—	—		0	9.80			
10)	1 2A		7.32	—	—	—		0	6.95			
11)	N0196606-001DMF		7.52	—	—	—		0	4.30			
12)	N0196606-001DMS		7.82	IWST160504B	1mL	0.05N		0	10.75			
13)	1 MSD	1	7.84	1	1	1	1	0	10.80	1		
14)												
15)												
16)				P							$\frac{(V_{pH\,8.3})(N_{H_2SO_4})(50{,}000)}{V_{Sx}}$	
17)												
18)												
19)												
20)				T							$\frac{(V_{pH\,4.5})(N_{H_2SO_4})(50{,}000)}{V_{Sx}}$	
	MS											
	MSD											
	LCS											

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.42	50	0.00	0.05	MBLK
LCS-1	8.32	50	0.00	4.80	LCS
N019544-001C	7.68	50	0.00	9.85	SAMP
N019544-002C	7.45	50	0.00	7.10	SAMP
N019606-001D	7.54	50	0.00	6.20	SAMP
N019606-002D	7.58	50	0.00	4.30	SAMP
N019606-003D	7.53	50	0.00	4.30	SAMP
N019607-003D	7.56	50	0.00	5.85	SAMP
N019613-001A	7.64	50	0.00	9.80	SAMP
N019613-002A	7.32	50	0.00	6.95	SAMP
N019606-002DDUP	7.52	50	0.00	4.30	DUP
N019606-001DMS	7.82	50	0.00	10.75	MS
N019606-001DMSD	7.84	50	0.00	10.80	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.875**	ml
N H2SO4	**0.02105**	Normal
Date Analyzed:	**5/4/16**	
Time:	**4:50 PM**	
Analyzed By:	**QBM**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R160308A**	

Date Analyzed:	5/4/16		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	4:50 PM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**QBM**			Hydrochloric Acid:		0			Titrant used:	11.875	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R160308A							**P > 1/2 T**
									N H2SO4	0.02105	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.42				0.02105	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.32				0.02105	0.00	4.80	4.80	1	0.00	101.05	
N019544-001C	50	7.68				0.02105	0.00	9.85	9.85	1	0.00	207.37	
N019544-002C	50	7.45				0.02105	0.00	7.10	7.10	1	0.00	149.47	
N019606-001D	50	7.54				0.02105	0.00	6.20	6.20	1	0.00	130.53	
N019606-002D	50	7.58				0.02105	0.00	4.30	4.30	1	0.00	90.53	
N019606-003D	50	7.53				0.02105	0.00	4.30	4.30	1	0.00	90.53	
N019607-003D	50	7.56				0.02105	0.00	5.85	5.85	1	0.00	123.16	
N019613-001A	50	7.64				0.02105	0.00	9.80	9.80	1	0.00	206.32	
N019613-002A	50	7.32				0.02105	0.00	6.95	6.95	1	0.00	146.32	
N019606-002DDU	50	7.52				0.02105	0.00	4.30	4.30	1	0.00	90.53	
N019606-001DMS	50	7.82				0.02105	0.00	10.75	10.75	1	0.00	226.32	
N019606-001DMS	50	7.84				0.02105	0.00	10.80	10.80	1	0.00	227.37	

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	5/4/16
Time:	4:50 PM
Analyzed By:	QBM

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	0.00	101.05	101.05	101.05		P = 0
N019544-001C	0.00	0.00	207.37	207.37	207.37		P = 0
N019544-002C	0.00	0.00	149.47	149.47	149.47		P = 0
N019606-001D	0.00	0.00	130.53	130.53	130.53		P = 0
N019606-002D	0.00	0.00	90.53	90.53	90.53		P = 0
N019606-003D	0.00	0.00	90.53	90.53	90.53		P = 0
N019607-003D	0.00	0.00	123.16	123.16	123.16		P = 0
N019613-001A	0.00	0.00	206.32	206.32	206.32		P = 0
N019613-002A	0.00	0.00	146.32	146.32	146.32		P = 0
N019606-002DDUP	0.00	0.00	90.53	90.53	90.53		P = 0
N019606-001DMS	0.00	0.00	226.32	226.32	226.32		P = 0
N019606-001DMSD	0.00	0.00	227.37	227.37	227.37		P = 0

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R107198
ASSET #: N019544

Instrument ID: IC2
Analyst: QBM
Date Analyzed: 4/29/2016

Method:

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

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/10/2016

2nd Level Reviewer 5/16/2016 Date: _____

226

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

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

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N019544-001C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 6.704 * 50

= 335.2

Reporting result in two significant values,

Sulfate, mg/L = 340

ANALYSIS RUN LOG

DIONEX SCHEDULE - C:\DX\SCHEDULE\160418.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160418.M	..\16041801.D01	1	1	1
2	,BLANK,	..\160418.M	..\16041801.D02	1	1	1
3	AUTOCAL1R	..\160418.M	..\16041801.D03	1	1	1
4	AUTOCAL2R	..\160418.M	..\16041801.D04	1	1	1
5	AUTOCAL3R	..\160418.M	..\16041801.D05	1	1	1
6	AUTOCAL4R	..\160418.M	..\16041801.D06	1	1	1
7	AUTOCAL5R	..\160418.M	..\16041801.D07	1	1	1
8	AUTOCAL6R	..\160418.M	..\16041801.D08	1	1	1
9	,ICV,ICV,1,	..\160418.M	..\16041801.D09	1	1	1
10	,ICB,ICB,1,	..\160418.M	..\16041801.D10	1	1	1
11	,MB-H2O,MBLK,1,	..\160418.M	..\16041801.D11	1	1	1
12	,LCS-H2O,LCS,1,	..\160418.M	..\16041801.D12	1	1	1
13	,N019419-020C,SAMP,	..\160418.M	..\16041801.D13	1	1	1
14	,N019431-006C,SAMP,	..\160418.M	..\16041801.D14	1	1	1
15	,N019431-006CDUP,DU	..\160418.M	..\16041801.D15	1	1	1
16	,N019431-015C,SAMP,	..\160418.M	..\16041801.D16	1	1	1
17	,N019431-015CMS,MS,	..\160418.M	..\16041801.D17	1	1	1
18	,N019431-015CMSD,MS	..\160418.M	..\16041801.D18	1	1	1
19	,N019432-002C,SAMP,	..\160418.M	..\16041801.D19	1	1	1
20	,N019432-003C,SAMP,	..\160418.M	..\16041801.D20	1	1	1
21	,CCV-1,CCV,1,	..\160418.M	..\16041801.D21	1	1	1
22	,CCB-1,CCB,1,	..\160418.M	..\16041801.D22	1	1	1
23	,N019419-020C,SAMP,	..\160418.M	..\16041801.D23	1	1	1
24	,N019432-004C,SAMP,	..\160418.M	..\16041801.D24	1	1	1
25	,N019432-004CMS,MS,	..\160418.M	..\16041801.D25	1	1	1
26	,N019432-005C,SAMP,	..\160418.M	..\16041801.D26	1	1	1
27	,N019432-006C,SAMP,	..\160418.M	..\16041801.D27	1	1	1
28	,N019432-007C,SAMP,	..\160418.M	..\16041801.D28	1	1	1
29	,N019432-008C,SAMP,	..\160418.M	..\16041801.D29	1	1	1
30	,N019432-009C,SAMP,	..\160418.M	..\16041801.D30	1	1	1
31	,N019432-015C,SAMP,	..\160418.M	..\16041801.D31	1	1	1
32	,N019433-001C,SAMP,	..\160418.M	..\16041801.D32	1	1	1
33	,CCV-2,CCV,1,	..\160418.M	..\16041801.D33	1	1	1
34	,CCB-2,CCB,1,	..\160418.M	..\16041801.D34	1	1	1
35	,N019433-007C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
36	,N019433-008C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
37	,N019433-009C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
38	,N019447-007D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
39	,N019447-008D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
40	,N019447-009D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
41	,CCV-3,CCV,1,	..\160418.M	..\16041801.D01	1	1	1
42	,CCB-3,CCB,1,	..\160418.M	..\16041801.D01	1	1	1
43	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

4/21/2016

DIONEX SCHEDULE - C:\DX\SCHEDULE\160429.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160418.M	..\16042901.D01	1	1	1
2	,CCV-1,CCV,1,	..\160418.M	..\16042901.D02	1	1	1
3	,CCB-1,CCB,1,	..\160418.M	..\16042901.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\160418.M	..\16042901.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\160418.M	..\16042901.D05	1	1	1
6	,N019544-001C,SAMP,	..\160418.M	..\16042901.D06	1	1	1
7	,N019544-001CDUP,DU	..\160418.M	..\16042901.D07	1	1	1
8	,N019544-002C,SAMP,	..\160418.M	..\16042901.D08	1	1	1
9	,N019544-002CMS,MS,	..\160418.M	..\16042901.D09	1	1	1
10	,N019544-002CMSD,MS	..\160418.M	..\16042901.D10	1	1	1
11	,N019544-001C,SAMP,	..\160418.M	..\16042901.D11	1	1	1
12	,N019544-001CDUP,DU	..\160418.M	..\16042901.D12	1	1	1
13	,N019544-002C,SAMP,	..\160418.M	..\16042901.D13	1	1	1
14	,CCV-2,CCV,1,	..\160418.M	..\16042901.D14	1	1	1
15	,CCB-2,CCB,1,	..\160418.M	..\16042901.D15	1	1	1
16	,N019544-002CMS,MS,	..\160418.M	..\16042901.D16	1	1	1
17	,N019544-002CMSD,MS	..\160418.M	..\16042901.D17	1	1	1
18	,N019544-001C,SAMP,	..\160418.M	..\16042901.D18	1	1	1
19	,N019544-001CDUP,DU	..\160418.M	..\16042901.D19	1	1	1
20	,CCV-3,CCV,1,	..\160418.M	..\16042901.D20	1	1	1
21	,CCB-3,CCB,1,	..\160418.M	..\16042901.D21	1	1	1
22	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

5/10/2016

INITIAL CALIBRATION DATA SUMMARY

DIONEX METHOD PARAMETERS - 160418.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS

Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\14120201.D02

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

4/21/2016

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

4/21/2016

Component Table -- Last Modified: 11:34 on Mon, 18 Apr 2016

Component # 1 Fluoride Retention Time 2.53
Reference Comp. Fluoride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 1.96604E-002
K1 = 2.75525E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	21804	2420
3	5.00000E-001	176562	18677
4	1.00000E+000	340825	37434
5	2.50000E+000	885332	103067
6	5.00000E+000	1817297	221045

Component # 2 Chloride Retention Time 3.77
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.72865E-002
K1 = 3.73331E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	123564	13717
3	1.00000E+000	255623	26807
4	2.50000E+000	629433	71108
5	5.00000E+000	1294953	149595
6	1.00000E+001	2677600	327188

Component # 3 Nitrite Retention Time 4.59
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.51829E-002
K1 = 2.03122E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	26388	2305
3	5.00000E-001	238401	20080
4	1.00000E+000	464414	39654
5	2.50000E+000	1223706	108966
6	5.00000E+000	2457690	228709

Component # 4 Bromide Retention Time 5.56
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -6.25288E-002
K1 = 8.99369E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	20924	1945
3	5.00000E-001	71851	4996
4	1.00000E+000	121564	9309
5	2.50000E+000	293667	24471
6	5.00000E+000	556648	49106

4/21/2016

Component # 5 Nitrate Retention Time 6.29
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.81800E-002
K1 = 1.49417E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	37518	2737
3	5.00000E-001	326026	23702
4	1.00000E+000	630623	48352
5	2.50000E+000	1641516	132850
6	5.00000E+000	3348176	278990

Component # 6 Phosphate Retention Time 8.30
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = -4.16125E-002
K1 = 4.34400E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	22593	1464
3	5.00000E-001	124124	6708
4	1.00000E+000	268719	13127
5	2.50000E+000	580416	34073
6	5.00000E+000	1156467	69715

Component # 7 Sulfate Retention Time 9.48
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.23779E-001
K1 = 5.14729E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	101897	5288
3	2.00000E+000	369925	20046
4	5.00000E+000	913040	51522
5	1.00000E+001	1859900	108154
6	2.00000E+001	3896340	233845

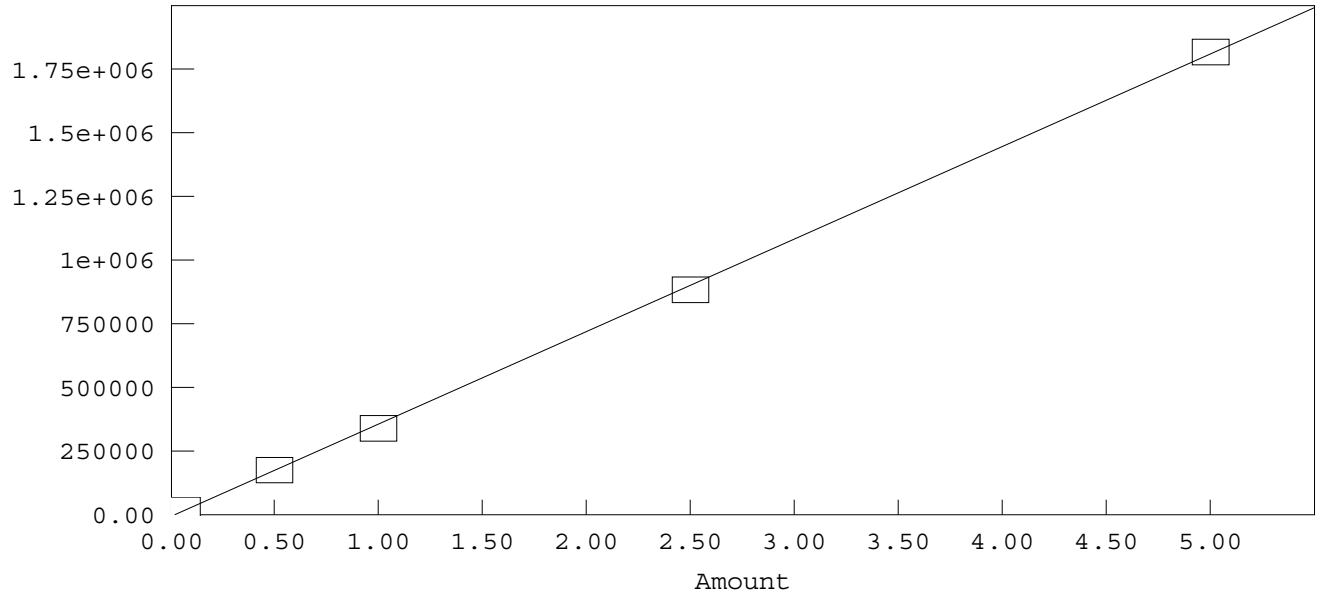
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

4/21/2016

Method: 160418.MET - Last Updated: 11:34 on Mon, 18 Apr 2016

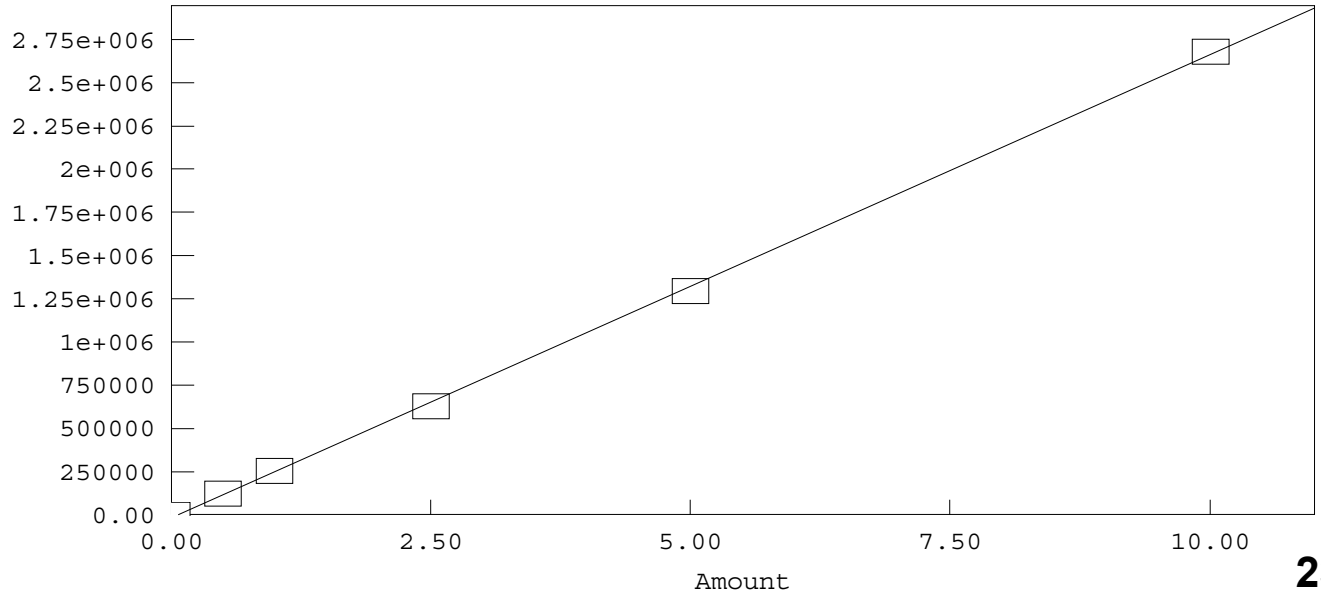
Component: Fluoride
Fit Type: Linear
r^2 = 0.999713
Amt = Resp * 2.755e-006 + 0.01966
Resp = Amt * 3.629e+005 + -7136
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

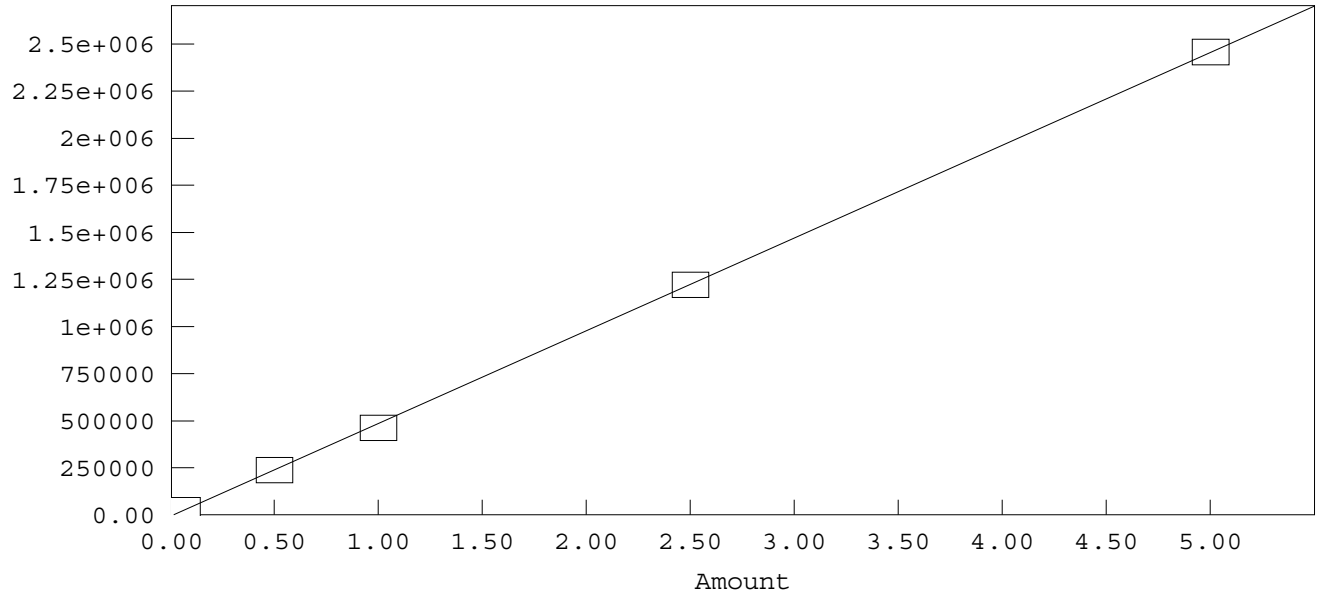
Component: Chloride
Fit Type: Linear
r^2 = 0.999635
Amt = Resp * 3.733e-006 + 0.06729
Resp = Amt * 2.679e+005 + -1.802e+004
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

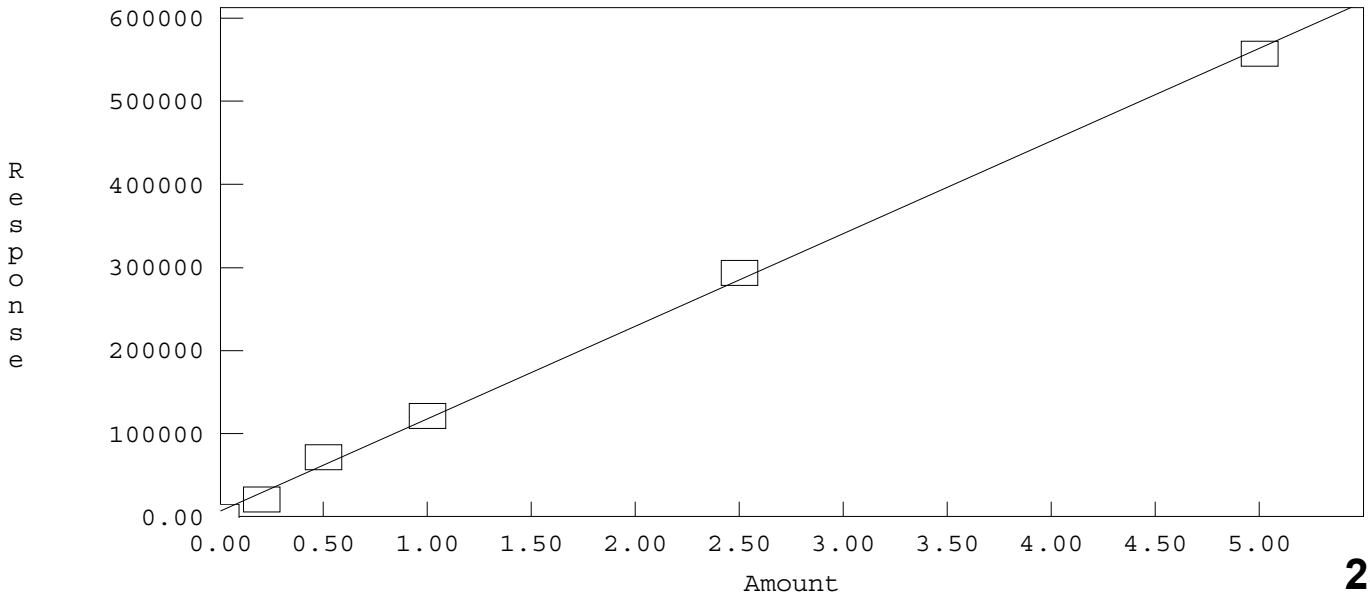
Component: Nitrite
Fit Type: Linear
r² = 0.999875
Amt = Resp * 2.031e-006 + 0.01518
Resp = Amt * 4.923e+005 + -7475
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

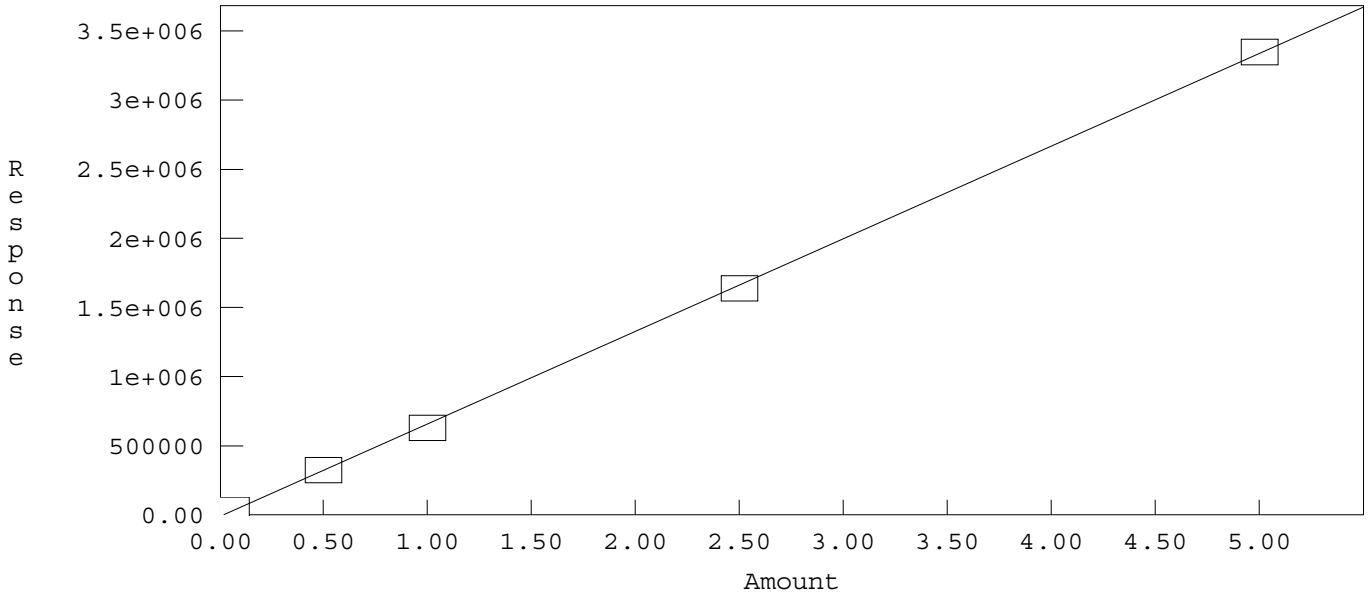
Component: Bromide
Fit Type: Linear
r² = 0.998550
Amt = Resp * 8.994e-006 + -0.06253
Resp = Amt * 1.112e+005 + 6953
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

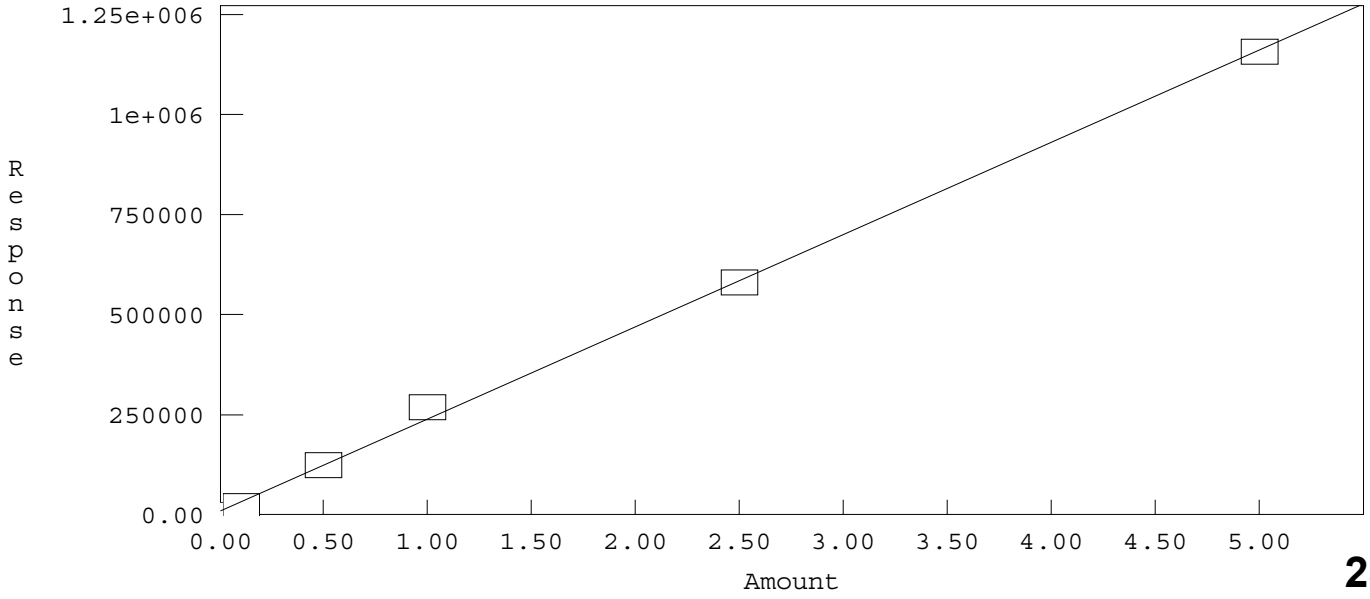
Component: Nitrate
Fit Type: Linear
r^2 = 0.999799
Amt = Resp * 1.494e-006 + 0.01818
Resp = Amt * 6.693e+005 + -1.217e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

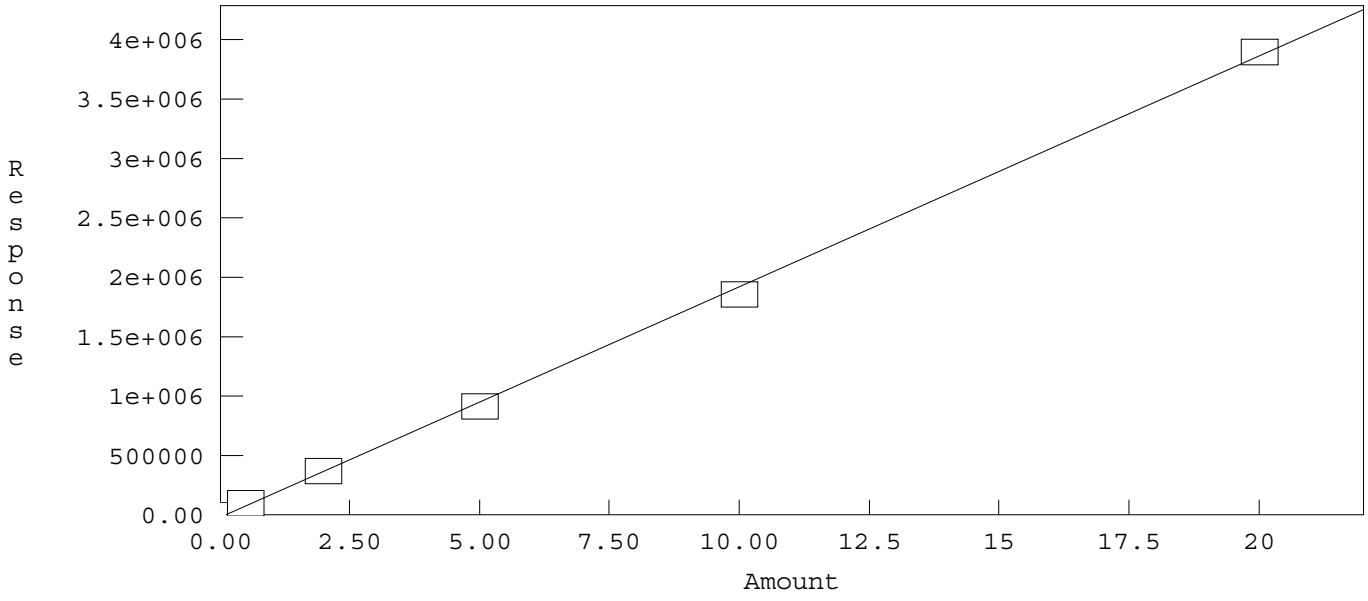
Component: Phosphate
Fit Type: Linear
r^2 = 0.998922
Amt = Resp * 4.344e-006 + -0.04161
Resp = Amt * 2.302e+005 + 9579
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999345
Amt = Resp * 5.147e-006 + 0.1238
Resp = Amt * 1.943e+005 + -2.405e+004
Standardization: External
Calibration: Area



4/21/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **ICV**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2311533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.437	0.50	2.500	0	97.5	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCV**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.369	0.50	2.500	0	94.8	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCV**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.487	0.50	2.500	0	99.5	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCV**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.481	0.50	2.500	0	99.2	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **ICV**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2311551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.815	0.50	5.000	0	96.3	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCV**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.887	0.50	5.000	0	97.7	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCV**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.722	0.50	5.000	0	94.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCV**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.195	0.50	5.000	0	104	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **ICB**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2311534**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCB**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311536**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCB**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311545**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCB**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311547**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **ICB**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2311552**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCB**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311554**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCB**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311561**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **107198**
Client ID: **CCB**	Batch ID: **R107198**	TestNo: **EPA 300.0**		Analysis Date: **4/29/2016**	SeqNo: **2311565**

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

Qualifiers:

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

Calculations are based on raw values

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 4/29/2016

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.75	
CCV-2	Chloride	3.81	
CCV-3	Chloride	3.82	
	Average	3.793	
	Lower Limit	3.593	
	Upper Limit	3.993	
MB-R107198_CL	Chloride	0	N.A
LCS-R107198_CL	Chloride	3.78	PASS
N019544-001C	Chloride	3.79	PASS
N019544-001CDUP	Chloride	3.81	PASS
N019544-002C	Chloride	3.79	PASS
N019544-002CMS	Chloride	3.81	PASS
N019544-002CMSD	Chloride	3.81	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 4/29/2016

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.47	
CCV-2	Sulfate	9.47	
CCV-3	Sulfate	9.55	
	Average	9.497	
	Lower Limit	9.297	
	Upper Limit	9.697	
MB-R107198_SO4	Sulfate	0	N.A
LCS-R107198_SO4	Sulfate	9.46	PASS
N019544-001C	Sulfate	9.45	PASS
N019544-001CDUP	Sulfate	9.5	PASS
N019544-002C	Sulfate	9.5	PASS
N019544-002CMS	Sulfate	9.49	PASS
N019544-002CMSD	Sulfate	9.47	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (Low Level)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.100
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.100	0.0062	**0.0194**	0.050	0.500
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.050
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.200
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.050
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.100
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.100	0.0208	**0.0655**	0.150	0.500

MDL/LOD & PQL Verification 2016 (1st Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 2/24/2016
Analyst: Quennie B. Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Compound	MDL	LOD Spike Conc., mg/L	LOD actual Conc., mg/L	PQL Spike Conc., mg/L	PQL actual Conc., mg/L	%Recovery
Fluoride	**0.0174**	0.035	0.087	0.100	0.125	125
Chloride	**0.0194**	0.050	0.173	0.500	0.559	112
Nitrite	**0.0205**	0.030	0.052	0.050	0.069	138
Bromide	**0.0359**	0.100	0.102	0.200	0.151	76
Nitrate	**0.0130**	0.030	0.076	0.050	0.072	144
Phosphate	**0.0325**	0.050	0.078	0.100	0.115	115
Sulfate	**0.0655**	0.150	0.294	0.500	0.574	115

SM 3500-Cr B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108460 **Analyst:** QBM

ASSET #: N019544/N019613/N019730 **Date Analyzed:** 5/12/2016

Method: 3500_Cr

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer _____ Date: 5/16/2016

2nd Level Reviewer 5/16/2016 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: ~~Water~~ Groundwater

FORMULA:

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

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N019544-002A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 618.984 * 1

= 618.984 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 620

5/16/2016

INITIAL CALIBRATION DATA SUMMARY

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	5/12/2016
Organisation	(None Entered)	Time of Report	8:14:31
Information	(None Entered)		

Calibration - EPA 3500_CRB_05122016.fqc

Operator Name	(None Entered)
Instrument ID	152119

Calibration Method - EPA 3500_CRB_05122016.fqc

Description	Hexavalent Chromium by EPA 3500_CRB (Colorimetric)		
Operator Name	QBM		
Quant Mode	Single Lambda	Standards	5
Lambda 1	540.0 nm	Replicates	1
Lambda 2	Off	Initial Curve Fit	Linear
Lambda 3	Off	Conc. Units	ug/L
Integ. Time	00:00:01	Conc. Dec. Places	3
Lamp Change	325.0 nm	Flier Detection	Off
Bandwidth	2.0 nm	Valid Until	5/12/2017
Method Status	Unlocked		

Standards Table - EPA 3500_CRB_05122016.fqc

Standard	Conc.	Use	540.0nm	Errors
Standard01				
	10.000	Yes	0.009	None
Standard02				
	100.000	Yes	0.082	None
Standard03				
	250.000	Yes	0.201	None
Standard04				
	500.000	Yes	0.394	None
Standard05				
	1000.000	Yes	0.751	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

Errors Key

None	: No Errors Detected
I	: Invalid Data

Calibration Line / Curve Statistics

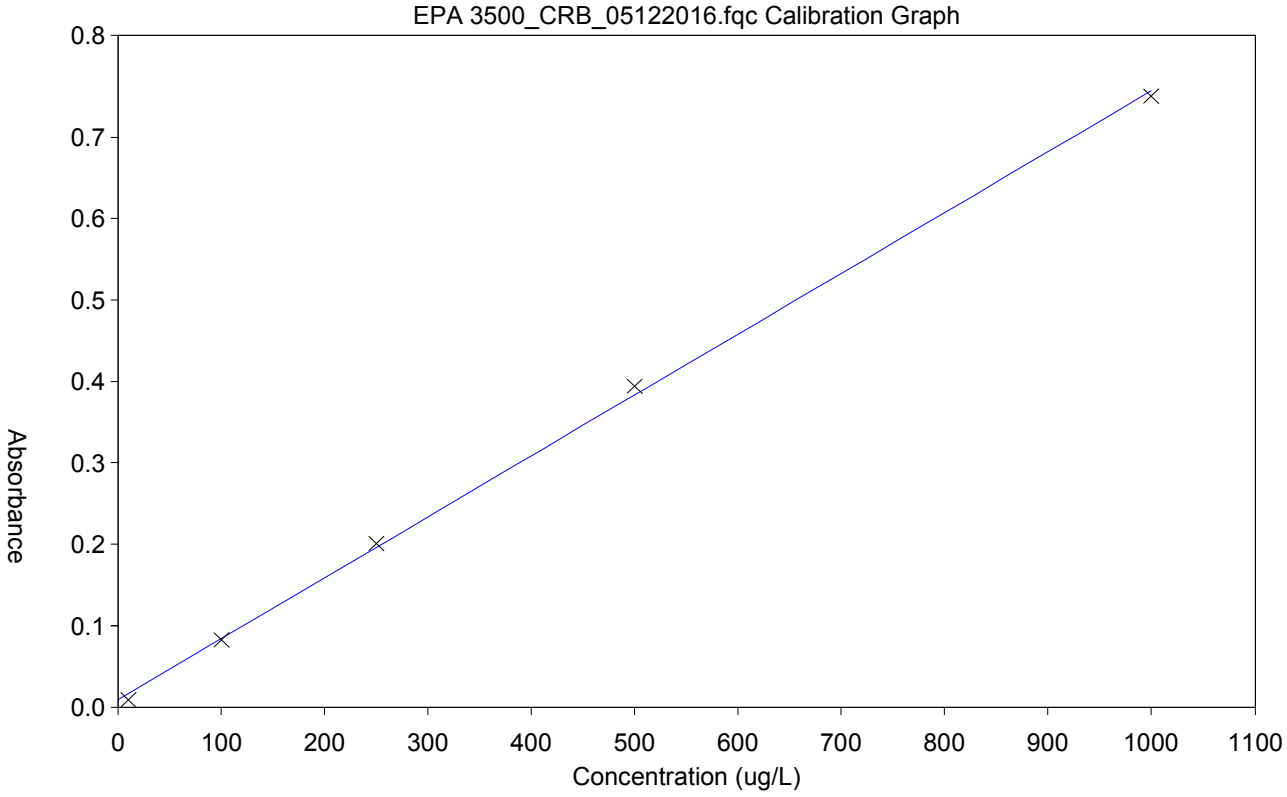
Equation	A = 0.0007 x Conc + 0.0091
Selected Fit	Linear

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	5/12/2016
Organisation	(None Entered)	Time of Report	8:14:31
Information	(None Entered)		

Coefficient	0.999288
Sum of Residuals	0.0003

Calibration Graph



ICAL: IWST160310A
ICV/LCS/MS/MSD: IWST160119A
CCV: ISST150306A
10% H2SO4: R160512E
1,5-Diphenylcarbazide Solution: R160512F

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108460**
Client ID: **CCV**	Batch ID: **R108460**	TestNo: **SM 3500-Cr B**		Analysis Date: **5/12/2016**	SeqNo: **2326407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	516.273	10	500.0	0	103	90	110				

Sample ID **ICV**	SampType: **ICV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108460**
Client ID: **ICV**	Batch ID: **R108460**	TestNo: **SM 3500-Cr B**		Analysis Date: **5/12/2016**	SeqNo: **2326409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	258.761	10	250.0	0	104	90	110				

Qualifiers:

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

5/16/2016
FOR

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	CCB-2 1	SampType:	CCB	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	CCB	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	-9.437	10									

Sample ID	ICB	SampType:	ICB	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	ICB	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326408

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	-10.3	10									

Qualifiers:

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

5/16/2016
FOR

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Calibration Method - EPA 3500_CRB_05122016.fqc

5/12/2016 20:30

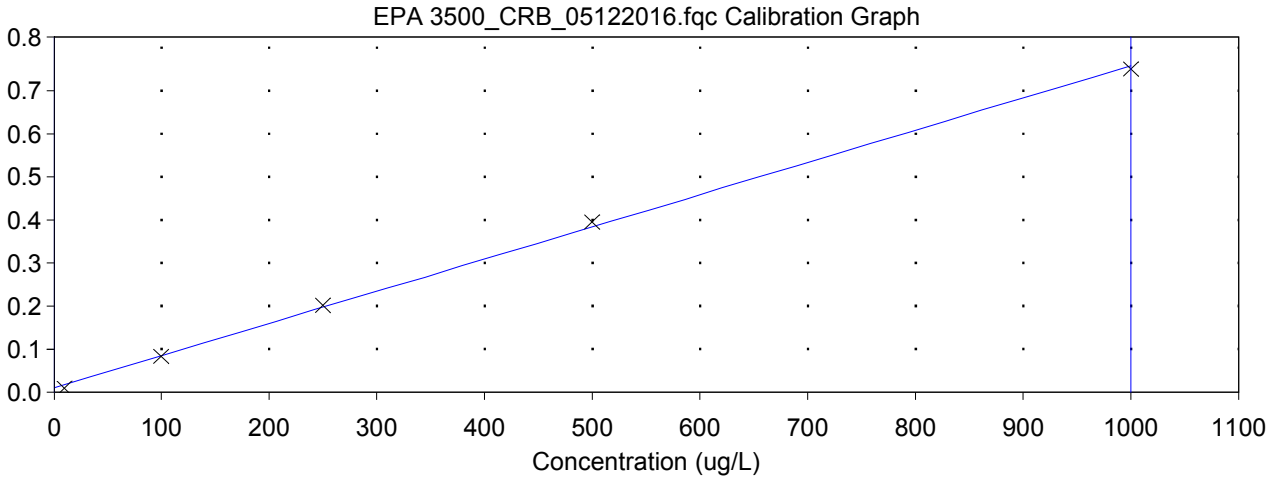
Description	Hexavalent Chromium by EPA 3500_CRB (Colorimetric)		
Operator Name	QBM		
Quant Mode	Single Lambda	Standards	5
Lambda 1	540.0 nm	Replicates	1
Lambda 2	Off	Initial Curve Fit	Linear
Lambda 3	Off	Conc. Units	ug/L
Integ. Time	00:00:01	Conc. Dec. Places	3
Lamp Change	325.0 nm	Flier Detection	Off
Bandwidth	2.0 nm	Valid Until	5/12/2017
Method Status	Unlocked		

Calibration Line / Curve Statistics

Equation	A = 0.0007 x Conc + 0.0091
Selected Fit	Linear
Coefficient	0.999288
Sum of Residuals	0.0003

Standard	Conc.	Use	540.0nm	Errors
Standard01	10.000	Yes	0.009	None
Standard02	100.000	Yes	0.082	None
Standard03	250.000	Yes	0.201	None
Standard04	500.000	Yes	0.394	None
Standard05	1000.000	Yes	0.751	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.



Batch : Hexavalent Chromium_05122016001.qre

	Sample	540.0nm	Conc.	Errors
1	,ICV,ICV,1,	0.203	258.761	None
2	,ICB,ICB,1,	0.001	-10.300	I
3	,MB-,MBLK,1,	0.001	-10.268	I
4	,LCS-,LCS,1,	0.083	98.933	None
5	,N019544-002A,SAMP,1,	0.472	618.984	None
6	,N019544-002ADUP,DUP,1,	0.480	629.474	None
7	,N019613-001D,SAMP,1,	0.003	-8.694	I
8	,N019613-002D,SAMP,1,	0.462	605.464	None
9	,N019730-002A,SAMP,1,	0.465	609.548	None
10	,N019730-003A,SAMP,1,	0.044	46.488	None
11	,N019730-003AMS,MS,1,	0.240	309.209	None
12	,N019730-003AMSD,MSD,1	0.242	311.795	None
13	,CCV-2,CCV,1,	0.395	516.273	None
14	,CCB-2,CCB,1,	0.002	-9.437	I

ICAL: IWST160310A
ICV/LCS/MS/MSD: IWST160119A
CCV: ISST150306A
10% H2SO4: R160512E
1,5-Diphenylcarbazide Solution: R160512F

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

for 5/16/2016

265 5/16/2016

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108305 **Analyst:** REB

ASSET #: N019544 **Date Analyzed:** 4/29/2016

Method: 4500_NO3

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Reb 05/11/2016 Date: —

2nd Level Reviewer Mary 5/16/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N019544-002D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5893*5

= 2.9465mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 2.9

Rob 05/11/2016

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

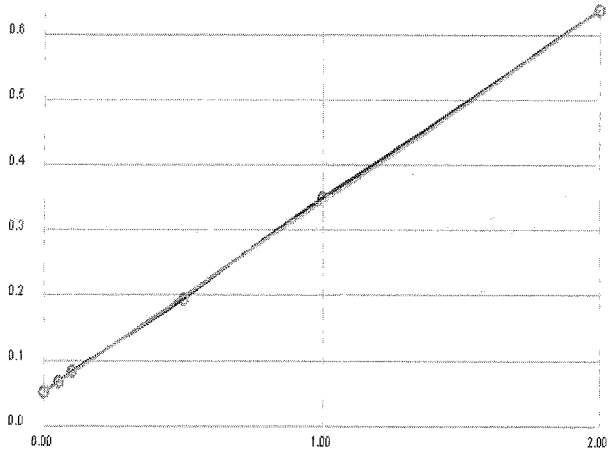
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.293x + 0.0524
Correlation	.999915

Calibrant	Energy	Set	Conc
1	0.0519	0.0000	-0.0017
2	0.0671	0.0500	0.0501
3	0.0829	0.1000	0.1041
4	0.1948	0.5000	0.4859
5	0.3503	1.0000	1.0166
6	0.6370	2.0000	1.9950



Notes:

2% CuSO4 - R160406A
R1 Buffer- R160406B
R2 Coloring Rgt. - R160406C

1° std- ISST-160211J
2° std- ISST-150730E

Reb 05/11/2016

271

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **ICV**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **CCV**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.524	0.050	0.5000	0	105	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **CCV**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.530	0.050	0.5000	0	106	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **CCV**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.505	0.050	0.5000	0	101	90	110				

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **ICB**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317820**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **CCB**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317836**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **CCB**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317849**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108305**
Client ID: **CCB**	Batch ID: **R108305**	TestNo: **SM4500-NO3**		Analysis Date: **4/29/2016**	SeqNo: **2317856**

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

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 04-29-2016 17:38
Time end: 04-29-2016 20:23

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	19:44:40	0.0010		0.0527
2	<BLANK>	19:45:35	-0.0034		0.0514
3	<CAL1>	19:46:35	-0.0017	[0]	0.0519
4	<CAL2>	19:47:30	0.0501	[0.05]	0.0671
5	<CAL3>	19:48:26	0.1041	[0.1]	0.0829
6	<CAL4>	19:49:26	0.4859	[0.5]	0.1948
7	<CAL5>	19:50:21	1.0166	[1]	0.3503
8	<CAL6>	19:51:17	1.9950	[2]	0.6370
9	,BLANK,BLANK,1,	19:52:18	0.0259		0.0600
10	,ICV,ICV,1,	19:53:12	0.4992		0.1987
11	,ICB,ICB,1,	19:54:14	0.0071		0.0545
12	,MB-H2O,MBLK,1,	19:55:09	0.0027		0.0532
13	,LCS-H2O,LCS,1,	19:56:11	0.5262		0.2066
14	,N019533-001C,SAMP,1,	19:57:05	0.0150		0.0568
15	,N019533-001CDUP,DUP,1,	19:58:00	0.0051		0.0539
16	,N019533-001CMS,MS,1,	19:59:02	0.6354		0.2386
17	,N019533-001CMSD,MSD,1,	19:59:56	0.6136		0.2322
18	,N019533-002C,SAMP,1,	20:00:51	1.1019		0.3753
19	,N019533-003C,SAMP,1,	20:01:53	1.5227		0.4986
20	,N019533-004C,SAMP,1,	20:02:49	1.7247		0.5578
21	,BLANK,BLANK,1	20:03:49	0.0198		0.0582
22	,CCV-1,CCV,1,	20:04:44	0.5242		0.2060
23	,CCB-1,CCB,1,	20:05:39	0.0071		0.0545
24	,N019533-007C,SAMP,1,	20:06:39	1.1985		0.4036
25	,N019533-009C,SAMP,1,	20:07:23	0.0361		0.0630
26	,N019533-010C,SAMP,1,	20:08:12	0.0037		0.0535

Reb 05/11/2016

277

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N019533-011C,SAMP,1,	20:08:54	0.2102		0.1140
28	,N019533-015C,SAMP,1,	20:09:44	0.0208		0.0585
29	,N019533-002C,SAMP,1,	20:10:26	0.0750		0.0744
30	,N019534-003C,SAMP,1,	20:11:09	0.0334		0.0622
31	,N019534-007C,SAMP,1,	20:11:57	0.1413		0.0938
32	,N019534-008C,SAMP,1,	20:12:40	0.1392		0.0932
33	,BLANK,BLANK,1	20:13:23	-0.0034		0.0514
34	,CCV-2,CCV,1,	20:14:11	0.5300		0.2077
35	,CCB-2,CCB,1,	20:14:55	-0.0021		0.0518
36	,N019534-009C,SAMP,50,	20:15:43	-0.0082		0.0500
37	,N019534-010C,SAMP,20,	20:16:26	-0.0069		0.0504
38	,N019535-007C,SAMP,5,	20:17:08	0.0184		0.0578
39	,N019544-001D,SAMP,1,	20:17:57	-0.0055		0.0508
40	,N019544-002D,SAMP,5,	20:18:40	0.5893		0.2251
41	,BLANK,BLANK,1	20:19:22	0.0003		0.0525
42	,CCV-3,CCV,1,	20:20:12	0.5050		0.2004
43	,CCB-3,CCB,1,	20:20:54	-0.0014		0.0520

NR

Rob 05/11/2016

278

5/16/2016

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 04/29/2016
Time Analyzed: 15:38 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R160406B
Color reagent: R160406C
2% Copper Sulfate: R160406A
Ammonium Hydroxide: CINV-160125C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N019533-001C		8.40						
2)	N019533-002C		8.50						
3)	N019533-003C		8.75						
4)	N019533-004C		8.18						
5)	N019533-007C		8.47						
6)	N019533-009C		8.42						
7)	N019533-010C		7.91						
8)	N019533-011C		8.40						
9)	N019533-015C		7.21						
10)	N019534-002C		8.39						
11)	N019534-003C		8.31						
12)	N019534-007C		8.68						
13)	N019534-008C		8.52						
14)	N019534-009C		7.88						
15)	N019534-010C		8.26						
16)	N019535-007C		8.11						
17)	N019544-001D		7.62						
18)	N019544-002D		8.12						
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

Reb 05/11/2016

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57229
ASSET #: N019544

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/4/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				J
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Cr in N019544-002B is over linear range. For dilution.

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

1st 2nd Level Reviewer 5/12/2016 Date:

5/13/2016 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57229
ASSET #: N019544

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/6/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Cr in N019544-002B only.

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

1st ~~2nd~~ Level Reviewer CEI Date: -

2nd _____ 5/13/2016 Date: -

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

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

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N019544-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 1.11784 * 1 * (25/25)

Chromium , ug/L = 1.117840

Reporting results in two significant figures,

Chromium , ug/L = 1.1

% RSD SUMMARY

PERCENT RSD SUMMARY: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	7.077	15	PASS	0.19	2.91	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.47	2.098	15	PASS	0.55	5.56	15	PASS
Std3-5/50 ppb	ICAL	1	4.85	0.8	15	PASS	4.8	1.69	15	PASS
Std4-10/100 ppb	ICAL	1	9.87	1.18	15	PASS	9.72	2.069	15	PASS
Std5-20/200 ppb	ICAL	1	19.37	0.5	15	PASS	19.13	1.5	15	PASS
Std6-40/400 ppb	ICAL	1	38.73	0.59	15	PASS	37.92	1.2	15	PASS
Std7-100/1000 ppb	ICAL	1	100.65	1.054	15	PASS	98.22	1.23	15	PASS
Std8-200/2000 ppb	ICAL	1	208.28	2.11	15	PASS	201.41	1.12	15	PASS
ICV	ICV	1	9.73	1.076	15	PASS	93.54	1.086	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.013	60.55	15	<PQL
LLICV	CCV1	1	0.97	0.77	20	PASS	0.51	2.72	20	PASS
ICSA1	ICSA	1	0.16	5.069	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.63	1.89	15	PASS	16.72	1.98	15	PASS
CCV1	CCV	1	19.96	1.61	15	PASS	19.22	1.39	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.015	19.53	15	<PQL
CCV2	CCV	1	19.82	0.44	15	PASS	18.96	0.81	15	PASS
CCB2	CCB	1	0.023	60.37	15	<PQL	0.019	46.69	15	<PQL
MB-57229	MBLK	1	0.052	48.3	15	<PQL	0.035	28.74	15	<PQL
LCS-57229	LCS	1	9.49	0.88	15	PASS	90.74	1.054	15	PASS
N019543-001B	SAMP	1	0.0034	398.44	15	<PQL	0.1	37.64	15	<PQL
N019543-001B	SAMP	5	0.018	101.34	15	<PQL	0.095	16.73	15	<PQL
N019543-001B-PS	PS	1	9.18	2.38	15	PASS	88.52	1.51	15	PASS
CCV3	CCV	1	19.23	0.88	15	PASS	19.14	0.026	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.014	43.7	15	<PQL
LLCCV1	CCV2	1	0.98	2.5	20	PASS	0.49	2.76	20	PASS
ICSA2	ICSA	1	0.19	4.25	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.41	0.44	15	PASS	16.81	1.22	15	PASS
N019543-001B-MS	MS	1	9.19	1.99	15	PASS	88.17	1.35	15	PASS
N019543-001B-MSD	MSD	1	9.23	1.44	15	PASS	88.46	0.62	15	PASS
N019543-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019543-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019543-004B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019543-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019543-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019543-007B	SAMP	1	0.028	7.1	15	PASS	<0.000	N/A	15	<PQL
N019543-008B	SAMP	1	<0.000	N/A	15	<PQL	5.27	1.36	15	PASS
N019543-009B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.5	1.011	15	PASS	19.33	0.32	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0046	53.71	15	<PQL
N019543-010B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019543-011B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019543-011B-MS	MS	1	8.19	0.51	15	PASS	78.37	0.35	15	PASS
N019543-012B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019543-013B	SAMP	1	<0.000	N/A	15	<PQL	52.69	0.96	15	PASS
N019543-014B	SAMP	1	<0.000	N/A	15	<PQL	49.35	1.73	15	PASS
N019544-001B	SAMP	1	1.12	4.023	15	PASS	93.2	1.83	15	PASS
N019544-002B	SAMP	1	579.93	0.4	15	PASS	16.72	0.22	15	PASS
CCV5	CCV	1	19.18	1.13	15	PASS	19.038	2.067	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.0056	24.65	15	<PQL
LLCCV2	CCV2	1	0.98	4.24	20	PASS	0.51	5.1	20	PASS
ICSA3	ICSA	1	0.17	7.55	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.34	0.63	15	PASS	16.78	0.4	15	PASS

PERCENT RSD SUMMARY: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.094	6.81	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	4.52	15	PASS
Std3-5/50 ppb	ICAL	1	5.21	0.84	15	PASS
Std4-10/100 ppb	ICAL	1	10.26	1.54	15	PASS
Std5-20/200 ppb	ICAL	1	20.94	1.066	15	PASS
Std6-40/400 ppb	ICAL	1	41.8	1.45	15	PASS
Std7-100/1000 ppb	ICAL	1	103.22	0.94	15	PASS
Std8-200/2000 ppb	ICAL	1	197.92	1.2	15	PASS
ICV	ICV	1	10.71	1.0051	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.045	1.32	20	PASS
ICSA1	ICSA	1	0.18	8.51	15	PASS
ICSAB1	ICSAB	1	20.81	0.93	15	PASS
CCV1	CCV	1	21.28	1.76	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.11	1.2	20	PASS
ICSA2	ICSA	1	0.14	3.72	15	PASS
ICSAB2	ICSAB	1	20.92	0.89	15	PASS
N019543-009B	SAMP	5	<0.000	N/A	15	<PQL
N019543-014B	SAMP	1	<0.000	N/A	15	<PQL
N019544-002B	SAMP	5	131.48	0.35	15	PASS
CCV2	CCV	1	20.67	1.61	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.53	0.51	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
CCV4	CCV	1	21.055	1.11	15	PASS
CCB4	CCB	1	0.035	37.52	15	<PQL
LLCCV2	CCV2	1	1.17	0.36	20	PASS
ICSA3	ICSA	1	0.21	11.6	15	PASS
ICSAB3	ICSAB	1	20.84	0.47	15	PASS
CCV5	CCV	1	21.16	0.1	15	PASS
CCB5	CCB	1	0.094	18.27	15	<PQL
CCV6	CCV	1	20.84	1.07	15	PASS
CCB6	CCB	1	0.036	42.59	15	<PQL
CCV7	CCV	1	20.89	3.07	15	PASS
CCB7	CCB	1	0.0063	206.71	15	<PQL
LLCCV3	CCV2	1	1.1	2.46	20	PASS
ICSA4	ICSA	1	0.18	4.77	15	PASS
ICSAB4	ICSAB	1	20.92	1.29	15	PASS
CCV8	CCV	1	20.87	0.93	15	PASS

PERCENT RSD SUMMARY: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
CCB8	CCB	1	0.023	47.065	15	<PQL
CCV9	CCV	1	21.2	1.28	15	PASS
CCB9	CCB	1	0.099	7.95	15	PASS
CCV10	CCV	1	20.89	1.13	15	PASS
CCB10	CCB	1	0.022	65.67	15	<PQL
LLCCV4	CCV2	1	1.13	3.24	20	PASS
ICSA5	ICSA	1	0.2	10.57	15	PASS
ICSAB5	ICSAB	1	21.46	2.17	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160504B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0504001.D	RINSE	RINSE	1	05/04/16 5:10 PM
B0504002.D	Cal Blank	IBLK	1	05/04/16 5:16 PM
B0504003.D	Std1-0.1/1 ppb	ICAL	1	05/04/16 5:22 PM
B0504004.D	Std2-0.5/5 ppb	ICAL	1	05/04/16 5:27 PM
B0504005.D	Std3-5/50 ppb	ICAL	1	05/04/16 5:33 PM
B0504006.D	Std4-10/100 ppb	ICAL	1	05/04/16 5:38 PM
B0504007.D	Std5-20/200 ppb	ICAL	1	05/04/16 5:44 PM
B0504008.D	Std6-40/400 ppb	ICAL	1	05/04/16 5:49 PM
B0504009.D	Std7-100/1000 ppb	ICAL	1	05/04/16 5:55 PM
B0504010.D	Std8-200/2000 ppb	ICAL	1	05/04/16 6:00 PM
B0504011.D	ICV	ICV	1	05/04/16 6:06 PM
B0504012.D	ICB	ICB	1	05/04/16 6:12 PM
B0504013.D	LLICV	CCV1	1	05/04/16 6:17 PM
B0504014.D	ICSA1	ICSA	1	05/04/16 6:23 PM
B0504015.D	ICSAB1	ICSAB	1	05/04/16 6:28 PM
B0504016.D	MB-57209	MBLK	1	05/04/16 6:34 PM
B0504017.D	LCS-57209	LCS	1	05/04/16 6:39 PM
B0504018.D	N019534-001B	SAMP	1	05/04/16 6:45 PM
B0504019.D	N019534-001B	SAMP	5	05/04/16 6:50 PM
B0504020.D	N019534-001B-PS	PS	1	05/04/16 6:56 PM
B0504021.D	N019534-001B-MS	MS	1	05/04/16 7:01 PM
B0504022.D	N019534-001B-MSD	MSD	1	05/04/16 7:07 PM
B0504023.D	N019534-002B	SAMP	1	05/04/16 7:12 PM
B0504024.D	N019534-003B	SAMP	1	05/04/16 7:18 PM
B0504025.D	N019534-004B	SAMP	1	05/04/16 7:23 PM
B0504026.D	CCV1	CCV	1	05/04/16 7:25 PM
B0504027.D	CCB1	CCB	1	05/04/16 7:34 PM
B0504028.D	N019534-005B	SAMP	1	05/04/16 7:40 PM
B0504029.D	N019534-006B	SAMP	1	05/04/16 7:46 PM
B0504030.D	N019534-007B	SAMP	1	05/04/16 7:51 PM
B0504031.D	N019534-008B	SAMP	1	05/04/16 7:57 PM
B0504032.D	N019534-009B	SAMP	1	05/04/16 8:02 PM
B0504033.D	N019534-010B	SAMP	1	05/04/16 8:08 PM
B0504034.D	N019534-015B	SAMP	1	05/04/16 8:13 PM
B0504035.D	N019534-015B-MS	MS	1	05/04/16 8:19 PM
B0504036.D	N019535-001B	SAMP	1	05/04/16 8:24 PM
B0504037.D	N019535-002B	SAMP	1	05/04/16 8:30 PM
B0504038.D	CCV2	CCV	1	05/04/16 8:33 PM
B0504039.D	CCB2	CCB	1	05/04/16 8:41 PM
B0504040.D	N019535-003B	SAMP	1	05/04/16 8:47 PM
B0504041.D	N019535-004B	SAMP	1	05/04/16 8:52 PM
B0504042.D	N019535-005B	SAMP	1	05/04/16 8:58 PM

INJECTION LOG: 160504B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0504043.D	N019535-006B	SAMP	1	05/04/16 9:03 PM
B0504044.D	N019535-007B	SAMP	1	05/04/16 9:09 PM
B0504045.D	MB-57229	MBLK	1	05/04/16 9:14 PM
B0504046.D	LCS-57229	LCS	1	05/04/16 9:19 PM
B0504047.D	N019543-001B	SAMP	1	05/04/16 9:25 PM
B0504048.D	N019543-001B	SAMP	5	05/04/16 9:31 PM
B0504049.D	N019543-001B-PS	PS	1	05/04/16 9:37 PM
B0504050.D	CCV3	CCV	1	05/04/16 9:42 PM
B0504051.D	CCB3	CCB	1	05/04/16 9:48 PM
B0504052.D	LLCCV1	CCV2	1	05/04/16 9:53 PM
B0504053.D	ICSA2	ICSA	1	05/04/16 9:59 PM
B0504054.D	ICSAB2	ICSAB	1	05/04/16 10:03 PM
B0504055.D	N019543-001B-MS	MS	1	05/04/16 10:10 PM
B0504056.D	N019543-001B-MSD	MSD	1	05/04/16 10:15 PM
B0504057.D	N019543-002B	SAMP	1	05/04/16 10:21 PM
B0504058.D	N019543-003B	SAMP	1	05/04/16 10:26 PM
B0504059.D	N019543-004B	SAMP	1	05/04/16 10:32 PM
B0504060.D	N019543-005B	SAMP	1	05/04/16 10:38 PM
B0504061.D	N019543-006B	SAMP	1	05/04/16 10:43 PM
B0504062.D	N019543-007B	SAMP	1	05/04/16 10:49 PM
B0504063.D	N019543-008B	SAMP	1	05/04/16 10:54 PM
B0504064.D	N019543-009B	SAMP	1	05/04/16 11:00 PM
B0504065.D	CCV4	CCV	1	05/04/16 11:05 PM
B0504066.D	CCB4	CCB	1	05/04/16 11:11 PM
B0504067.D	N019543-010B	SAMP	1	05/04/16 11:16 PM
B0504068.D	N019543-011B	SAMP	1	05/04/16 11:22 PM
B0504069.D	N019543-011B-MS	MS	1	05/04/16 11:27 PM
B0504070.D	N019543-012B	SAMP	1	05/04/16 11:33 PM
B0504071.D	N019543-013B	SAMP	1	05/04/16 11:39 PM
B0504072.D	N019543-014B	SAMP	1	05/04/16 11:44 PM
B0504073.D	N019544-001B	SAMP	1	05/04/16 11:50 PM
B0504074.D	N019544-002B	SAMP	1	05/04/16 11:55 PM
B0504075.D	CCV5	CCV	1	05/05/16 12:01 AM
B0504076.D	CCB5	CCB	1	05/05/16 12:06 AM
B0504077.D	LLCCV2	CCV2	1	05/05/16 12:12 AM
B0504078.D	ICSA3	ICSA	1	05/05/16 12:17 AM
B0504079.D	ICSAB3	ICSAB	1	05/05/16 12:22 AM

INJECTION LOG: 160506B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0506001.D	RINSE	RINSE	1	05/06/16 2:30 PM
B0506002.D	Cal Blank	IBLK	1	05/06/16 2:35 PM
B0506003.D	Std1-0.1/1 ppb	ICAL	1	05/06/16 2:41 PM
B0506004.D	Std2-0.5/5 ppb	ICAL	1	05/06/16 2:46 PM
B0506005.D	Std3-5/50 ppb	ICAL	1	05/06/16 2:52 PM
B0506006.D	Std4-10/100 ppb	ICAL	1	05/06/16 2:57 PM
B0506007.D	Std5-20/200 ppb	ICAL	1	05/06/16 3:03 PM
B0506008.D	Std6-40/400 ppb	ICAL	1	05/06/16 3:08 PM
B0506009.D	Std7-100/1000 ppb	ICAL	1	05/06/16 3:14 PM
B0506010.D	Std8-200/2000 ppb	ICAL	1	05/06/16 3:20 PM
B0506011.D	ICV	ICV	1	05/06/16 3:25 PM
B0506012.D	ICB	ICB	1	05/06/16 3:31 PM
B0506013.D	LLICV	CCV1	1	05/06/16 3:36 PM
B0506014.D	ICSA1	ICSA	1	05/06/16 3:46 PM
B0506015.D	ICSAB1	ICSAB	1	05/06/16 3:47 PM
B0506016.D	MB-57283	MBLK	1	05/06/16 3:53 PM
B0506017.D	LCS-57283	LCS	1	05/06/16 3:58 PM
B0506018.D	N019567-002C	SAMP	25	05/06/16 4:05 PM
B0506019.D	N019567-002C	SAMP	125	05/06/16 4:10 PM
B0506020.D	N019567-002C-PS	PS	25	05/06/16 4:16 PM
B0506021.D	N019567-002C-MS	MS	25	05/06/16 4:21 PM
B0506022.D	N019567-002C-MSD	MSD	25	05/06/16 4:27 PM
B0506023.D	CCV1	CCV	1	05/06/16 4:32 PM
B0506024.D	CCB1	CCB	1	05/06/16 4:38 PM
B0506025.D	LLCCV1	CCV2	1	05/06/16 4:43 PM
B0506026.D	ICSA2	ICSA	1	05/06/16 4:49 PM
B0506027.D	ICSAB2	ICSAB	1	05/06/16 4:54 PM
B0506028.D	N019534-002B	SAMP	5	05/06/16 5:03 PM
B0506029.D	N019534-003B	SAMP	5	05/06/16 5:09 PM
B0506030.D	N019534-005B	SAMP	5	05/06/16 5:14 PM
B0506031.D	N019534-007B	SAMP	5	05/06/16 5:20 PM
B0506032.D	N019534-008B	SAMP	5	05/06/16 5:25 PM
B0506033.D	N019543-009B	SAMP	5	05/06/16 5:31 PM
B0506034.D	N019534-010B	SAMP	5	05/06/16 5:36 PM
B0506035.D	N019535-007B	SAMP	5	05/06/16 5:42 PM
B0506036.D	N019543-014B	SAMP	1	05/06/16 5:47 PM
B0506037.D	N019544-002B	SAMP	5	05/06/16 5:53 PM
B0506038.D	CCV2	CCV	1	05/06/16 6:00 PM
B0506039.D	CCB2	CCB	1	05/06/16 6:06 PM
B0506040.D	MB-57228	MBLK	1	05/06/16 6:11 PM
B0506041.D	LCS-57228	LCS	1	05/06/16 6:17 PM
B0506042.D	N019492-015B	SAMP	1	05/06/16 6:22 PM

INJECTION LOG: 160506B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0506043.D	N019542-001B	SAMP	1	05/06/16 6:28 PM
B0506044.D	N019542-001B	SAMP	5	05/06/16 6:33 PM
B0506045.D	N019542-001B-PS	PS	1	05/06/16 6:39 PM
B0506046.D	N019542-001B-MS	MS	1	05/06/16 6:44 PM
B0506047.D	N019542-001B-MSD	MSD	1	05/06/16 6:50 PM
B0506048.D	N019542-002B	SAMP	1	05/06/16 6:56 PM
B0506049.D	N019542-003B	SAMP	1	05/06/16 7:01 PM
B0506050.D	CCV3	CCV	1	05/06/16 7:07 PM
B0506051.D	CCB3	CCB	1	05/06/16 7:12 PM
B0506052.D	N019542-004B	SAMP	1	05/06/16 7:18 PM
B0506053.D	N019542-005B	SAMP	1	05/06/16 7:23 PM
B0506054.D	N019542-006B	SAMP	1	05/06/16 7:29 PM
B0506055.D	N019542-007B	SAMP	1	05/06/16 7:34 PM
B0506056.D	N019542-008B	SAMP	1	05/06/16 7:40 PM
B0506057.D	N019542-009B	SAMP	1	05/06/16 7:45 PM
B0506058.D	N019542-010B	SAMP	1	05/06/16 7:51 PM
B0506059.D	N019542-011B	SAMP	1	05/06/16 7:56 PM
B0506060.D	N019542-011B-MS	MS	1	05/06/16 8:02 PM
B0506061.D	N019542-012B	SAMP	1	05/06/16 8:08 PM
B0506062.D	CCV4	CCV	1	05/06/16 8:14 PM
B0506063.D	CCB4	CCB	1	05/06/16 8:24 PM
B0506064.D	LLCCV2	CCV2	1	05/06/16 8:29 PM
B0506065.D	ICSA3	ICSA	1	05/06/16 8:35 PM
B0506066.D	ICSAB3	ICSAB	1	05/06/16 8:40 PM
B0506067.D	N019542-013B	SAMP	1	05/06/16 8:46 PM
B0506068.D	N019542-014B	SAMP	1	05/06/16 8:51 PM
B0506069.D	N019542-015B	SAMP	1	05/06/16 8:57 PM
B0506070.D	N019542-016B	SAMP	1	05/06/16 9:02 PM
B0506071.D	N019542-019B	SAMP	1	05/06/16 9:08 PM
B0506072.D	N019542-020B	SAMP	1	05/06/16 9:13 PM
B0506073.D	MB-57247	MBLK	1	05/06/16 9:19 PM
B0506074.D	LCS-57247	LCS	1	05/06/16 9:24 PM
B0506075.D	N019559-001B	SAMP	1	05/06/16 9:30 PM
B0506076.D	N019559-001B	SAMP	5	05/06/16 9:36 PM
B0506077.D	CCV5	CCV	1	05/06/16 9:41 PM
B0506078.D	CCB5	CCB	1	05/06/16 9:47 PM
B0506079.D	N019559-001B-PS	PS	1	05/06/16 9:52 PM
B0506080.D	N019559-001B-MS	MS	1	05/06/16 9:58 PM
B0506081.D	N019559-001B-MSD	MSD	1	05/06/16 10:03 PM
B0506082.D	N019559-002B	SAMP	1	05/06/16 10:09 PM
B0506083.D	N019559-003B	SAMP	1	05/06/16 10:14 PM
B0506084.D	N019559-004B	SAMP	1	05/06/16 10:20 PM

INJECTION LOG: 160506B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0506085.D	N019559-005B	SAMP	1	05/06/16 10:25 PM
B0506086.D	N019559-006B	SAMP	1	05/06/16 10:31 PM
B0506087.D	N019559-007B	SAMP	1	05/06/16 10:36 PM
B0506088.D	N019559-008B	SAMP	1	05/06/16 10:42 PM
B0506089.D	CCV6	CCV	1	05/06/16 10:47 PM
B0506090.D	CCB6	CCB	1	05/06/16 10:53 PM
B0506091.D	N019559-009B	SAMP	1	05/06/16 10:58 PM
B0506092.D	N019559-010B	SAMP	1	05/06/16 11:04 PM
B0506093.D	N019559-011B	SAMP	1	05/06/16 11:10 PM
B0506094.D	N019559-011B-MS	MS	1	05/06/16 11:15 PM
B0506095.D	N019559-012B	SAMP	1	05/06/16 11:21 PM
B0506096.D	N019559-013B	SAMP	1	05/06/16 11:26 PM
B0506097.D	N019559-014B	SAMP	1	05/06/16 11:32 PM
B0506098.D	N019570-001B	SAMP	1	05/06/16 11:37 PM
B0506099.D	N019570-002B	SAMP	1	05/06/16 11:43 PM
B0506100.D	N019570-003B	SAMP	1	05/06/16 11:48 PM
B0506101.D	CCV7	CCV	1	05/06/16 11:54 PM
B0506102.D	CCB7	CCB	1	05/07/16 12:00 AM
B0506103.D	LLCCV3	CCV2	1	05/07/16 12:05 AM
B0506104.D	ICSA4	ICSA	1	05/07/16 12:11 AM
B0506105.D	ICSAB4	ICSAB	1	05/07/16 12:16 AM
B0506106.D	N019570-004B	SAMP	1	05/07/16 12:22 AM
B0506107.D	N019570-005B	SAMP	1	05/07/16 12:27 AM
B0506108.D	N019542-001B	SAMP	25	05/07/16 12:33 AM
B0506109.D	N019542-001B-PS	PS	5	05/07/16 12:38 AM
B0506110.D	N019542-001B-PS	PS	25	05/07/16 12:44 AM
B0506111.D	N019542-001B-MS	MS	5	05/07/16 12:49 AM
B0506112.D	N019542-001B-MS	MS	25	05/07/16 12:55 AM
B0506113.D	N019542-001B-MSD	MSD	5	05/07/16 1:01 AM
B0506114.D	N019542-001B-MSD	MSD	25	05/07/16 1:06 AM
B0506115.D	N019542-002B	SAMP	5	05/07/16 1:12 AM
B0506116.D	CCV8	CCV	1	05/07/16 1:17 AM
B0506117.D	CCB8	CCB	1	05/07/16 1:23 AM
B0506118.D	N019542-004B	SAMP	5	05/07/16 1:28 AM
B0506119.D	N019542-004B	SAMP	50	05/07/16 1:34 AM
B0506120.D	N019542-005B	SAMP	5	05/07/16 1:39 AM
B0506121.D	N019542-007B	SAMP	5	05/07/16 1:45 AM
B0506122.D	N019542-009B	SAMP	5	05/07/16 1:50 AM
B0506123.D	N019542-010B	SAMP	5	05/07/16 1:56 AM
B0506124.D	N019542-012B	SAMP	5	05/07/16 2:02 AM
B0506125.D	N019542-013B	SAMP	5	05/07/16 2:07 AM
B0506126.D	N019542-014B	SAMP	5	05/07/16 2:13 AM

INJECTION LOG: 160506B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0506127.D	N019542-015B	SAMP	5	05/07/16 2:18 AM
B0506128.D	CCV9	CCV	1	05/07/16 2:24 AM
B0506129.D	CCB9	CCB	1	05/07/16 2:29 AM
B0506130.D	N019542-016B	SAMP	5	05/07/16 2:35 AM
B0506131.D	N019542-019B	SAMP	5	05/07/16 2:40 AM
B0506132.D	N019542-020B	SAMP	5	05/07/16 2:46 AM
B0506133.D	N019542-013B	SAMP	25	05/07/16 2:52 AM
B0506134.D	N019542-014B	SAMP	25	05/07/16 2:57 AM
B0506135.D	N019542-015B	SAMP	100	05/07/16 3:03 AM
B0506136.D	N019542-016B	SAMP	50	05/07/16 3:08 AM
B0506138.D	CCV10	CCV	1	05/07/16 3:14 AM
B0506139.D	CCB10	CCB	1	05/07/16 3:19 AM
B0506140.D	LLCCV4	CCV2	1	05/07/16 3:25 AM
B0506141.D	ICSA5	ICSA	1	05/07/16 3:31 AM
B0506142.D	ICSAB5	ICSAB	1	05/07/16 3:36 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/29/2016 7:58:20 A**
Prep End Date: **4/29/2016 12:30:00**
Initials/ Date: 5/12/2016

Prep Batch **57229** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.7**	**01-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57229	Aqueous		25	☐	0	0	25	1.000		
MB-57229	Aqueous		25	☐	0	0	25	1.000		
N019543-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-010B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
7858	NITRIC ACID
8441	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/29/2016 7:58:20 A**
Prep End Date: **4/29/2016 12:30:00**
Initials/ Date: 5/12/2016

Prep Batch **57229** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.7**	**01-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019543-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-011B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N019544-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019544-002B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
7858	NITRIC ACID
8441	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 4 May 2016 08:47:50 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	109530.00	0.00	
24	Mg	636264.00	0.00	
25	Mg	83785.70	0.00	
26	Mg	97847.90	0.00	
59	Co	741968.00	0.00	
115	In	1421620.00	0.00	
206	Pb	350040.00	0.00	
207	Pb	304500.00	0.00	
208	Pb	756511.00	0.00	

RSD (%)

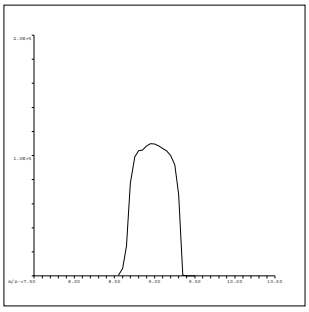
Element		Actual	Required	Flag
9	Be	1.18	5.00	
24	Mg	0.31	5.00	
25	Mg	0.87	5.00	
26	Mg	0.75	5.00	
59	Co	0.34	5.00	
115	In	0.90	5.00	
206	Pb	1.01	5.00	
207	Pb	1.26	5.00	
208	Pb	0.92	5.00	

Ion Ratio

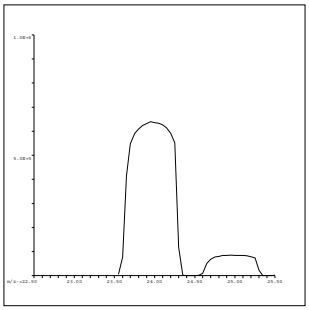
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

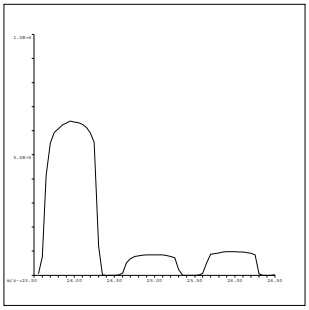
Element	Actual	Required	Flag



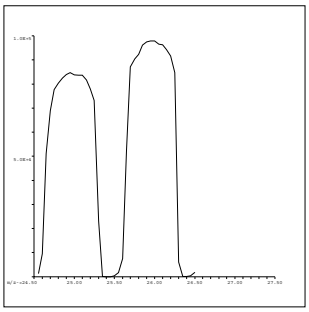
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



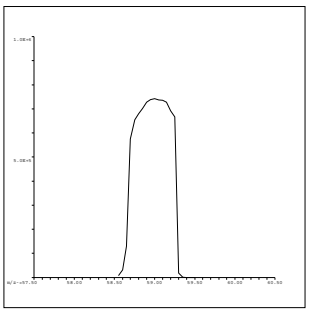
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



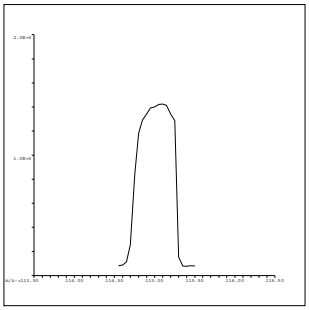
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



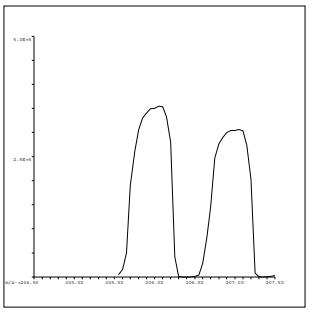
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



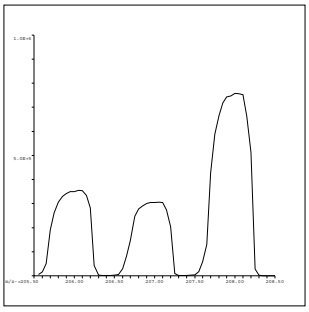
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



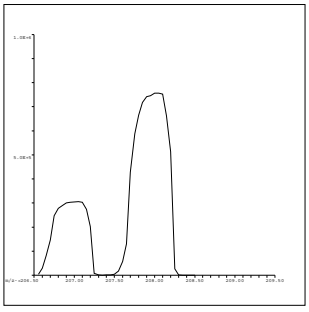
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

C:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 6 May 2016 11:30:34 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	97896.80	0.00	
24	Mg	410996.00	0.00	
25	Mg	54634.70	0.00	
26	Mg	63401.00	0.00	
59	Co	544933.00	0.00	
115	In	1027630.00	0.00	
206	Pb	262167.00	0.00	
207	Pb	229430.00	0.00	
208	Pb	559039.00	0.00	

RSD (%)

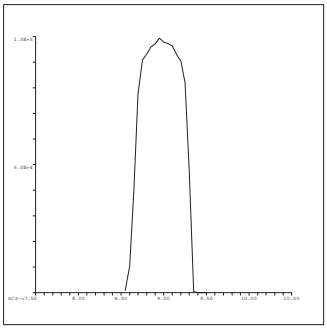
Element		Actual	Required	Flag
9	Be	0.68	5.00	
24	Mg	0.39	5.00	
25	Mg	0.46	5.00	
26	Mg	0.92	5.00	
59	Co	0.91	5.00	
115	In	0.67	5.00	
206	Pb	0.92	5.00	
207	Pb	1.10	5.00	
208	Pb	1.52	5.00	

Ion Ratio

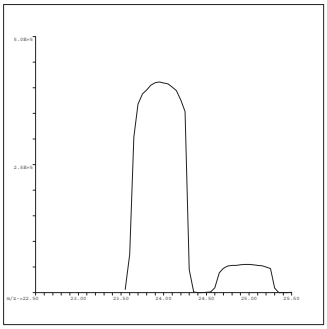
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

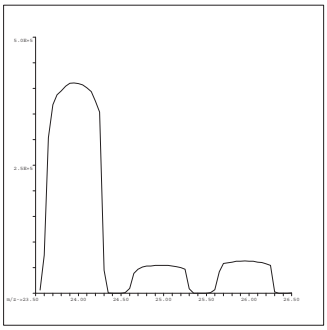
Element	Actual	Required	Flag



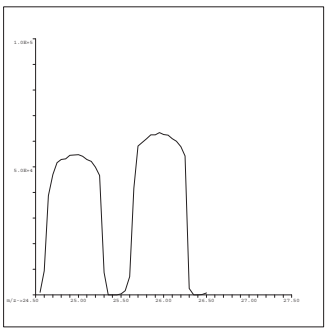
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



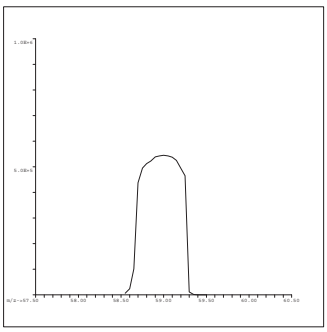
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:

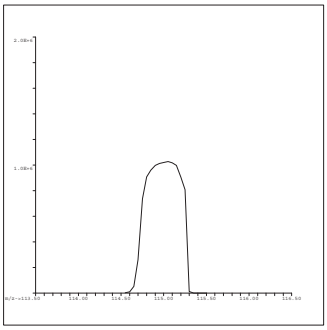


26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

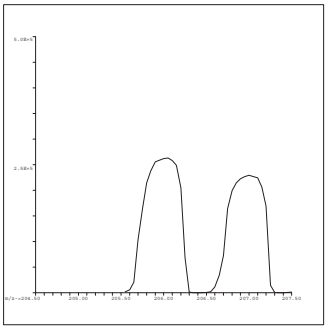


59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

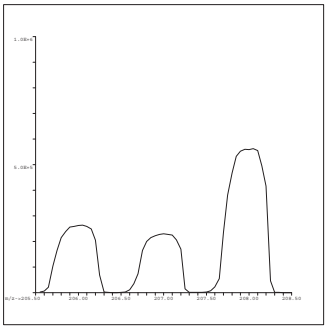
C:\ICPMH\1\7500\qctune.d



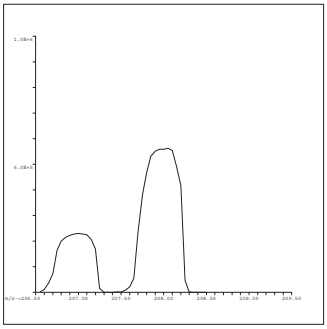
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160504B

Instrument ID: ICPMS-02

Analyte	Data File	B0504002.D	B0504004.D	B0504005.D	B0504006.D	B0504007.D	B0504008.D	B0504009.D	B0504010.D	
	Acq. Date-Time	05/04/2016 05:16 PM	05/04/2016 05:27 PM	05/04/2016 05:33 PM	05/04/2016 05:38 PM	05/04/2016 05:44 PM	05/04/2016 05:49 PM	05/04/2016 05:55 PM	05/04/2016 06:00 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	100123.8	99919.6	100179.5	99392.3	97947	97674.7	93661.8	90653.4	
55 Mn [2]	CPS	73.5	2425.5	20565.8	41228.3	79904.7	157900	392103.7	778150.3	1.0000
52 Cr [2]	CPS	859.9	4487.3	38526.2	76874.5	147823	293955.9	731153.3	1463378.1	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 160506B

Instrument ID: ICPMS-02

Analyte	Data File	B0506002.D	B0506004.D	B0506005.D	B0506006.D	B0506007.D	B0506008.D	B0506009.D	B0506010.D	
	Acq. Date-Time	05/06/2016 02:35 PM	05/06/2016 02:46 PM	05/06/2016 02:52 PM	05/06/2016 02:57 PM	05/06/2016 03:03 PM	05/06/2016 03:08 PM	05/06/2016 03:14 PM	05/06/2016 03:20 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	102015.2	99889.1	100314.5	100163.3	98624.6	97724.5	96887.2	98165.7	
52 Cr [2]	CPS	1030	4366.2	37010.6	71765.8	143218.5	282311.9	689771.9	1339202.8	0.9998

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.539	0.50	100.0	0	93.5	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ZZZZZZ**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.513	0.50	0.5000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.221	0.50	20.00	0	96.1	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.961	0.50	20.00	0	94.8	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCV**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.143	0.50	20.00	0	95.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**LLCCV1**	SampType:	**CCV2**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108271**
Client ID:	**ZZZZZZ**	Batch ID:	**R108271**	TestNo:	**EPA 6020**			Analysis Date:	**5/4/2016**	SeqNo:	**2316462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.489	0.50	0.5000	0	97.8	70	130				

Sample ID	**CCV4**	SampType:	**CCV**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108271**
Client ID:	**CCV**	Batch ID:	**R108271**	TestNo:	**EPA 6020**			Analysis Date:	**5/4/2016**	SeqNo:	**2316475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.334	0.50	20.00	0	96.7	90	110				

Sample ID	**CCV5**	SampType:	**CCV**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108271**
Client ID:	**CCV**	Batch ID:	**R108271**	TestNo:	**EPA 6020**			Analysis Date:	**5/5/2016**	SeqNo:	**2316485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.038	0.50	20.00	0	95.2	90	110				

Sample ID	**LLCCV2**	SampType:	**CCV2**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108271**
Client ID:	**ZZZZZZ**	Batch ID:	**R108271**	TestNo:	**EPA 6020**			Analysis Date:	**5/5/2016**	SeqNo:	**2316487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.512	0.50	0.5000	0	102	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ICV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.725	1.0	10.00	0	97.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ZZZZZZ**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.966	1.0	1.000	0	96.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.955	1.0	20.00	0	99.8	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.821	1.0	20.00	0	99.1	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCV**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.230	1.0	20.00	0	96.1	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**LLCCV1**	SampType:	**CCV2**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**108270**
Client ID:	**ZZZZZZ**	Batch ID:	**R108270**	TestNo:	**EPA 6020**			Analysis Date:	**5/4/2016**	SeqNo:	**2316531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.984	1.0	1.000	0	98.4	70	130				

Sample ID	**CCV4**	SampType:	**CCV**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**108270**
Client ID:	**CCV**	Batch ID:	**R108270**	TestNo:	**EPA 6020**			Analysis Date:	**5/4/2016**	SeqNo:	**2316544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.499	1.0	20.00	0	97.5	90	110				

Sample ID	**CCV5**	SampType:	**CCV**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**108270**
Client ID:	**CCV**	Batch ID:	**R108270**	TestNo:	**EPA 6020**			Analysis Date:	**5/5/2016**	SeqNo:	**2316554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.182	1.0	20.00	0	95.9	90	110				

Sample ID	**LLCCV2**	SampType:	**CCV2**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**108270**
Client ID:	**ZZZZZZ**	Batch ID:	**R108270**	TestNo:	**EPA 6020**			Analysis Date:	**5/5/2016**	SeqNo:	**2316556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.980	1.0	1.000	0	98.0	70	130				

Qualifiers:

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

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.709	1.0	10.00	0	107	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.045	1.0	1.000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.279	1.0	20.00	0	106	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.108	1.0	1.000	0	111	70	130				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.672	1.0	20.00	0	103	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.527	1.0	20.00	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.055	1.0	20.00	0	105	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.168	1.0	1.000	0	117	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.164	1.0	20.00	0	106	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.841	1.0	20.00	0	104	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCV7	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	CCV	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/6/2016	SeqNo:	2318124

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.891	1.0	20.00	0	104	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	ZZZZZZ	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.104	1.0	1.000	0	110	70	130				

Sample ID	CCV8	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	CCV	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.867	1.0	20.00	0	104	90	110				

Sample ID	CCV9	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	CCV	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318151

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.198	1.0	20.00	0	106	90	110				

Sample ID	CCV10	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	CCV	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318160

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.888	1.0	20.00	0	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.129	1.0	1.000	0	113	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316422**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316437**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316449**

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

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316461**

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

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316476**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **CCB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316486**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ICB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.023	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **CCB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.035	1.0									

Qualifiers:

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

Calculations are based on raw values

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB5	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	CCB	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/6/2016	SeqNo:	2318101

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.094	1.0									

Sample ID	CCB6	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	CCB	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/6/2016	SeqNo:	2318113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.036	1.0									

Sample ID	CCB7	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	CCB	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318125

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB8	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	CCB	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318140

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.023	1.0									

Sample ID	CCB9	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	CCB	Batch ID:	R108312	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318152

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.099	1.0									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.022	1.0									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSA**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316424**

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

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSAB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.719	0.50	20.00	0	83.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSA**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316463**

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

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSAB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/4/2016**	SeqNo: **2316464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.809	0.50	20.00	0	84.0	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSA**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316488**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID: **ICSAB**	Batch ID: **R108271**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.777	0.50	20.00	0	83.9	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSA	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/4/2016	SeqNo:	2316493

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.161	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSAB	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/4/2016	SeqNo:	2316494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.626	1.0	20.00	0	98.1	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSA	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/4/2016	SeqNo:	2316532

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.193	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSAB	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/4/2016	SeqNo:	2316533

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.405	1.0	20.00	0	102	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108270
Client ID:	ICSA	Batch ID:	R108270	TestNo:	EPA 6020			Analysis Date:	5/5/2016	SeqNo:	2316557

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.165	1.0									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID: **ICSAB**	Batch ID: **R108270**	TestNo: **EPA 6020**		Analysis Date: **5/5/2016**	SeqNo: **2316558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.338	1.0	20.00	0	102	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.179	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.813	1.0	20.00	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.144	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.920	1.0	20.00	0	105	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.210	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.837	1.0	20.00	0	104	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.177	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.918	1.0	20.00	0	105	80	120				

Sample ID **ICSA5**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.198	1.0									

Sample ID **ICSAB5**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.458	1.0	20.00	0	107	80	120				

Qualifiers:

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

Calculations are based on raw values

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	100123.8	100123.8	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	102512.2	100123.8	102.39	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	99919.6	100123.8	99.8	PASS	70-130
Std3-5/50 ppb	ICAL	1	100179.5	100123.8	100.06	PASS	70-130
Std4-10/100 ppb	ICAL	1	99392.3	100123.8	99.27	PASS	70-130
Std5-20/200 ppb	ICAL	1	97947	100123.8	97.83	PASS	70-130
Std6-40/400 ppb	ICAL	1	97674.7	100123.8	97.55	PASS	70-130
Std7-100/1000 ppb	ICAL	1	93661.8	100123.8	93.55	PASS	70-130
Std8-200/2000 ppb	ICAL	1	90653.4	100123.8	90.54	PASS	70-130
ICV	ICV	1	114383.7	100123.8	114.24	PASS	70-130
ICB	ICB	1	97411.8	100123.8	97.29	PASS	70-130
LLICV	CCV1	1	101926.6	100123.8	101.8	PASS	70-130
ICSA1	ICSA	1	91154.3	100123.8	91.042	PASS	70-130
ICSAB1	ICSAB	1	97787.4	100123.8	97.67	PASS	70-130
CCV1	CCV	1	94219.3	100123.8	94.1	PASS	70-130
CCB1	CCB	1	91303.4	100123.8	91.19	PASS	70-130
CCV2	CCV	1	100671.8	100123.8	100.55	PASS	70-130
CCB2	CCB	1	86166.1	100123.8	86.06	PASS	70-130
MB-57229	MBLK	1	87392.5	100123.8	87.28	PASS	70-130
LCS-57229	LCS	1	90275.4	100123.8	90.16	PASS	70-130
N019543-001B	SAMP	1	88000.9	100123.8	87.89	PASS	70-130
N019543-001B	SAMP	5	87210.6	100123.8	87.1	PASS	70-130
N019543-001B-PS	PS	1	90078.4	100123.8	89.97	PASS	70-130
CCV3	CCV	1	93509.5	100123.8	93.39	PASS	70-130
CCB3	CCB	1	88631.4	100123.8	88.52	PASS	70-130
LLCCV1	CCV2	1	93916.8	100123.8	93.8	PASS	70-130
ICSA2	ICSA	1	86792.1	100123.8	86.68	PASS	70-130
ICSAB2	ICSAB	1	95209	100123.8	95.091	PASS	70-130
N019543-001B-MS	MS	1	88721.1	100123.8	88.61	PASS	70-130
N019543-001B-MSD	MSD	1	88150.7	100123.8	88.042	PASS	70-130
N019543-002B	SAMP	1	87900.8	100123.8	87.79	PASS	70-130
N019543-003B	SAMP	1	86236.5	100123.8	86.13	PASS	70-130
N019543-004B	SAMP	1	84393	100123.8	84.29	PASS	70-130
N019543-005B	SAMP	1	83292.8	100123.8	83.19	PASS	70-130
N019543-006B	SAMP	1	88267	100123.8	88.16	PASS	70-130
N019543-007B	SAMP	1	89474.5	100123.8	89.36	PASS	70-130
N019543-008B	SAMP	1	88833.4	100123.8	88.72	PASS	70-130
N019543-009B	SAMP	1	91955.6	100123.8	91.84	PASS	70-130
CCV4	CCV	1	92984.5	100123.8	92.87	PASS	70-130
CCB4	CCB	1	89939.2	100123.8	89.83	PASS	70-130
N019543-010B	SAMP	1	86939.1	100123.8	86.83	PASS	70-130

INTERNAL STANDARD: 160504B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N019543-011B	SAMP	1	85424.6	100123.8	85.32	PASS	70-130
N019543-011B-MS	MS	1	97375.3	100123.8	97.25	PASS	70-130
N019543-012B	SAMP	1	86755.7	100123.8	86.65	PASS	70-130
N019543-013B	SAMP	1	88670.1	100123.8	88.56	PASS	70-130
N019543-014B	SAMP	1	90660.8	100123.8	90.55	PASS	70-130
N019544-001B	SAMP	1	85601	100123.8	85.5	PASS	70-130
N019544-002B	SAMP	1	81421.4	100123.8	81.32	PASS	70-130
CCV5	CCV	1	105767.4	100123.8	105.64	PASS	70-130
CCB5	CCB	1	101098.1	100123.8	100.97	PASS	70-130
LLCCV2	CCV2	1	104715.5	100123.8	104.59	PASS	70-130
ICSA3	ICSA	1	97223.2	100123.8	97.1	PASS	70-130
ICSAB3	ICSAB	1	95835.1	100123.8	95.72	PASS	70-130

INTERNAL STANDARD: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	102015.2	102015.2	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	100153.4	102015.2	98.17	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	99889.1	102015.2	97.92	PASS	70-130
Std3-5/50 ppb	ICAL	1	100314.5	102015.2	98.33	PASS	70-130
Std4-10/100 ppb	ICAL	1	100163.3	102015.2	98.18	PASS	70-130
Std5-20/200 ppb	ICAL	1	98624.6	102015.2	96.68	PASS	70-130
Std6-40/400 ppb	ICAL	1	97724.5	102015.2	95.79	PASS	70-130
Std7-100/1000 ppb	ICAL	1	96887.2	102015.2	94.97	PASS	70-130
Std8-200/2000 ppb	ICAL	1	98165.7	102015.2	96.23	PASS	70-130
ICV	ICV	1	95544.3	102015.2	93.66	PASS	70-130
ICB	ICB	1	100015.5	102015.2	98.04	PASS	70-130
LLICV	CCV1	1	98259.8	102015.2	96.32	PASS	70-130
ICSA1	ICSA	1	112946.2	102015.2	110.72	PASS	70-130
ICSAB1	ICSAB	1	104873.2	102015.2	102.8	PASS	70-130
CCV1	CCV	1	90188.1	102015.2	88.41	PASS	70-130
CCB1	CCB	1	92945.2	102015.2	91.11	PASS	70-130
LLCCV1	CCV2	1	90686.6	102015.2	88.9	PASS	70-130
ICSA2	ICSA	1	103056.6	102015.2	101.02	PASS	70-130
ICSAB2	ICSAB	1	113702.3	102015.2	111.46	PASS	70-130
N019543-009B	SAMP	5	101128.8	102015.2	99.13	PASS	70-130
N019543-014B	SAMP	1	101269.6	102015.2	99.27	PASS	70-130
N019544-002B	SAMP	5	94463.9	102015.2	92.6	PASS	70-130
CCV2	CCV	1	101464.4	102015.2	99.46	PASS	70-130
CCB2	CCB	1	96668.4	102015.2	94.76	PASS	70-130
CCV3	CCV	1	111252.4	102015.2	109.06	PASS	70-130
CCB3	CCB	1	106245.8	102015.2	104.15	PASS	70-130
CCV4	CCV	1	95650.3	102015.2	93.76	PASS	70-130
CCB4	CCB	1	95522	102015.2	93.64	PASS	70-130
LLCCV2	CCV2	1	93239	102015.2	91.4	PASS	70-130
ICSA3	ICSA	1	101207.6	102015.2	99.21	PASS	70-130
ICSAB3	ICSAB	1	106829.7	102015.2	104.72	PASS	70-130
CCV5	CCV	1	91166	102015.2	89.37	PASS	70-130
CCB5	CCB	1	86745.7	102015.2	85.032	PASS	70-130
CCV6	CCV	1	87788.5	102015.2	86.054	PASS	70-130
CCB6	CCB	1	82980.6	102015.2	81.34	PASS	70-130
CCV7	CCV	1	90525.6	102015.2	88.74	PASS	70-130
CCB7	CCB	1	86626	102015.2	84.91	PASS	70-130
LLCCV3	CCV2	1	87005	102015.2	85.29	PASS	70-130
ICSA4	ICSA	1	89545	102015.2	87.78	PASS	70-130
ICSAB4	ICSAB	1	94003.5	102015.2	92.15	PASS	70-130
CCV8	CCV	1	86373	102015.2	84.67	PASS	70-130

INTERNAL STANDARD: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCB8	CCB	1	82396.1	102015.2	80.77	PASS	70-130
CCV9	CCV	1	84968.8	102015.2	83.29	PASS	70-130
CCB9	CCB	1	82818.2	102015.2	81.18	PASS	70-130
CCV10	CCV	1	80094.8	102015.2	78.51	PASS	70-130
CCB10	CCB	1	78000.6	102015.2	76.46	PASS	70-130
LLCCV4	CCV2	1	80512.5	102015.2	78.92	PASS	70-130
ICSA5	ICSA	1	80400.7	102015.2	78.81	PASS	70-130
ICSAB5	ICSAB	1	84145.9	102015.2	82.48	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N019544
Test Method: EPA 6020
Analysis Date: 5/4/2016

Matrix: Groundwater
Batch No.: 57229

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N019543-001B DT 5X	Chromium	ug/L	0	NA	0		10
N019543-001B DT 5X	Manganese	ug/L	0.477398	NA	0.102009	368.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N019543-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108271**
Client ID:	**ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.519	0.50	100.0	0.1020	88.4	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019544
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N019543-001B-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108270**
Client ID:	**ZZZZZZ**	Batch ID: **57229**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2316528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.178	1.0	10.00	0	91.8	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Detection Limit
Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

ACCEPTANCE CRITERIA: MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	MDL*10	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0313	0.3133	0.3000	0.187	0.50	0.515	103
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0248	0.2485	0.3000	0.049	0.10	0.103	103
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699	0.6986	0.3000	0.403	1.00	1.245	125
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0430	0.4304	0.3000	0.185	0.50	0.524	105
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0473	0.4734	0.3000	0.174	0.50	0.501	100
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0192	0.1925	0.3000	0.321	1.00	0.973	97
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263	0.2630	0.3000	0.163	0.50	0.475	95
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2626	2.6262	0.3000	0.328	1.00	1.062	106
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7517	7.5170	0.3000	0.605	10.00	11.338	113
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367	0.3670	0.3000	0.343	1.00	1.018	102
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0554	0.5543	0.3000	0.193	0.50	0.605	121
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0385	0.3853	0.3000	0.247	0.50	0.660	132
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0395	0.3954	0.3000	0.341	1.00	1.002	100
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276	0.2760	0.3000	0.170	0.50	0.502	100
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590	0.5899	0.3000	0.247	1.00	1.029	103
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296	0.2961	0.3000	0.186	0.50	0.549	110
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0327	0.3272	0.3000	0.181	0.50	0.533	107
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213	0.2133	0.3000	0.221	1.00	0.873	87
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2678	2.6780	0.3000	3.286	10.00	10.085	101

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N019559

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N019559

Item	Pages
Cover Page	1-7
Analytical Result / QC Summary Reports	8-115
Sample Receiving Items	116-126
List of Analysts	127
Raw Data	
EPA 120.1	128-132
SM 4500 H+B	133-137
SM 2540D	138-153
EPA 218.6	154-259
SM 4500-NO3F	260-273
EPA 6010B_Dissolved	274-311
EPA 6010B	312-357
EPA 6020_Dissolved	358-458

May 17, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019559

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 28, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N019559

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
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CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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ASSET Laboratories

Date: *17-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N019559
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019559-001A	C-CON-D-Q216	Groundwater	4/28/2016 9:45:00 AM	4/28/2016	5/17/2016
N019559-001B	C-CON-D-Q216	Groundwater	4/28/2016 9:45:00 AM	4/28/2016	5/17/2016
N019559-001C	C-CON-D-Q216	Groundwater	4/28/2016 9:45:00 AM	4/28/2016	5/17/2016
N019559-001D	C-CON-D-Q216	Groundwater	4/28/2016 9:45:00 AM	4/28/2016	5/17/2016
N019559-001E	C-CON-D-Q216	Groundwater	4/28/2016 9:45:00 AM	4/28/2016	5/17/2016
N019559-002A	C-CON-S-Q216	Groundwater	4/28/2016 10:00:00 AM	4/28/2016	5/17/2016
N019559-002B	C-CON-S-Q216	Groundwater	4/28/2016 10:00:00 AM	4/28/2016	5/17/2016
N019559-002C	C-CON-S-Q216	Groundwater	4/28/2016 10:00:00 AM	4/28/2016	5/17/2016
N019559-002D	C-CON-S-Q216	Groundwater	4/28/2016 10:00:00 AM	4/28/2016	5/17/2016
N019559-002E	C-CON-S-Q216	Groundwater	4/28/2016 10:00:00 AM	4/28/2016	5/17/2016
N019559-003A	C-NR1-D-Q216	Groundwater	4/28/2016 10:20:00 AM	4/28/2016	5/17/2016
N019559-003B	C-NR1-D-Q216	Groundwater	4/28/2016 10:20:00 AM	4/28/2016	5/17/2016
N019559-003C	C-NR1-D-Q216	Groundwater	4/28/2016 10:20:00 AM	4/28/2016	5/17/2016
N019559-003D	C-NR1-D-Q216	Groundwater	4/28/2016 10:20:00 AM	4/28/2016	5/17/2016
N019559-003E	C-NR1-D-Q216	Groundwater	4/28/2016 10:20:00 AM	4/28/2016	5/17/2016
N019559-004A	C-NR1-S-Q216	Groundwater	4/28/2016 10:40:00 AM	4/28/2016	5/17/2016
N019559-004B	C-NR1-S-Q216	Groundwater	4/28/2016 10:40:00 AM	4/28/2016	5/17/2016
N019559-004C	C-NR1-S-Q216	Groundwater	4/28/2016 10:40:00 AM	4/28/2016	5/17/2016
N019559-004D	C-NR1-S-Q216	Groundwater	4/28/2016 10:40:00 AM	4/28/2016	5/17/2016
N019559-004E	C-NR1-S-Q216	Groundwater	4/28/2016 10:40:00 AM	4/28/2016	5/17/2016
N019559-005A	C-NR3-D-Q216	Groundwater	4/28/2016 11:15:00 AM	4/28/2016	5/17/2016
N019559-005B	C-NR3-D-Q216	Groundwater	4/28/2016 11:15:00 AM	4/28/2016	5/17/2016
N019559-005C	C-NR3-D-Q216	Groundwater	4/28/2016 11:15:00 AM	4/28/2016	5/17/2016
N019559-005D	C-NR3-D-Q216	Groundwater	4/28/2016 11:15:00 AM	4/28/2016	5/17/2016
N019559-005E	C-NR3-D-Q216	Groundwater	4/28/2016 11:15:00 AM	4/28/2016	5/17/2016
N019559-006A	MW-917-Q216	Groundwater	4/28/2016 11:20:00 AM	4/28/2016	5/17/2016
N019559-006B	MW-917-Q216	Groundwater	4/28/2016 11:20:00 AM	4/28/2016	5/17/2016
N019559-006C	MW-917-Q216	Groundwater	4/28/2016 11:20:00 AM	4/28/2016	5/17/2016
N019559-006D	MW-917-Q216	Groundwater	4/28/2016 11:20:00 AM	4/28/2016	5/17/2016

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CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N019559
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019559-006E	MW-917-Q216	Groundwater	4/28/2016 11:20:00 AM	4/28/2016	5/17/2016
N019559-007A	C-NR3-S-Q216	Groundwater	4/28/2016 11:30:00 AM	4/28/2016	5/17/2016
N019559-007B	C-NR3-S-Q216	Groundwater	4/28/2016 11:30:00 AM	4/28/2016	5/17/2016
N019559-007C	C-NR3-S-Q216	Groundwater	4/28/2016 11:30:00 AM	4/28/2016	5/17/2016
N019559-007D	C-NR3-S-Q216	Groundwater	4/28/2016 11:30:00 AM	4/28/2016	5/17/2016
N019559-007E	C-NR3-S-Q216	Groundwater	4/28/2016 11:30:00 AM	4/28/2016	5/17/2016
N019559-008A	C-NR4-D-Q216	Groundwater	4/28/2016 12:15:00 PM	4/28/2016	5/17/2016
N019559-008B	C-NR4-D-Q216	Groundwater	4/28/2016 12:15:00 PM	4/28/2016	5/17/2016
N019559-008C	C-NR4-D-Q216	Groundwater	4/28/2016 12:15:00 PM	4/28/2016	5/17/2016
N019559-008D	C-NR4-D-Q216	Groundwater	4/28/2016 12:15:00 PM	4/28/2016	5/17/2016
N019559-008E	C-NR4-D-Q216	Groundwater	4/28/2016 12:15:00 PM	4/28/2016	5/17/2016
N019559-009A	C-NR4-S-Q216	Groundwater	4/28/2016 12:25:00 PM	4/28/2016	5/17/2016
N019559-009B	C-NR4-S-Q216	Groundwater	4/28/2016 12:25:00 PM	4/28/2016	5/17/2016
N019559-009C	C-NR4-S-Q216	Groundwater	4/28/2016 12:25:00 PM	4/28/2016	5/17/2016
N019559-009D	C-NR4-S-Q216	Groundwater	4/28/2016 12:25:00 PM	4/28/2016	5/17/2016
N019559-009E	C-NR4-S-Q216	Groundwater	4/28/2016 12:25:00 PM	4/28/2016	5/17/2016
N019559-010A	C-R27-D-Q216	Groundwater	4/28/2016 8:30:00 AM	4/28/2016	5/17/2016
N019559-010B	C-R27-D-Q216	Groundwater	4/28/2016 8:30:00 AM	4/28/2016	5/17/2016
N019559-010C	C-R27-D-Q216	Groundwater	4/28/2016 8:30:00 AM	4/28/2016	5/17/2016
N019559-010D	C-R27-D-Q216	Groundwater	4/28/2016 8:30:00 AM	4/28/2016	5/17/2016
N019559-010E	C-R27-D-Q216	Groundwater	4/28/2016 8:30:00 AM	4/28/2016	5/17/2016
N019559-011A	C-R27-S-Q216	Groundwater	4/28/2016 8:50:00 AM	4/28/2016	5/17/2016
N019559-011B	C-R27-S-Q216	Groundwater	4/28/2016 8:50:00 AM	4/28/2016	5/17/2016
N019559-011C	C-R27-S-Q216	Groundwater	4/28/2016 8:50:00 AM	4/28/2016	5/17/2016
N019559-011D	C-R27-S-Q216	Groundwater	4/28/2016 8:50:00 AM	4/28/2016	5/17/2016
N019559-011E	C-R27-S-Q216	Groundwater	4/28/2016 8:50:00 AM	4/28/2016	5/17/2016
N019559-012A	RRB-Q216	Groundwater	4/28/2016 9:15:00 AM	4/28/2016	5/17/2016
N019559-012B	RRB-Q216	Groundwater	4/28/2016 9:15:00 AM	4/28/2016	5/17/2016
N019559-012C	RRB-Q216	Groundwater	4/28/2016 9:15:00 AM	4/28/2016	5/17/2016
N019559-012D	RRB-Q216	Groundwater	4/28/2016 9:15:00 AM	4/28/2016	5/17/2016

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

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N019559
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019559-012E	RRB-Q216	Groundwater	4/28/2016 9:15:00 AM	4/28/2016	5/17/2016
N019559-013A	SW1-Q216	Groundwater	4/28/2016 1:45:00 PM	4/28/2016	5/17/2016
N019559-013B	SW1-Q216	Groundwater	4/28/2016 1:45:00 PM	4/28/2016	5/17/2016
N019559-013C	SW1-Q216	Groundwater	4/28/2016 1:45:00 PM	4/28/2016	5/17/2016
N019559-014A	SW2-Q216	Groundwater	4/28/2016 2:00:00 PM	4/28/2016	5/17/2016
N019559-014B	SW2-Q216	Groundwater	4/28/2016 2:00:00 PM	4/28/2016	5/17/2016
N019559-014C	SW2-Q216	Groundwater	4/28/2016 2:00:00 PM	4/28/2016	5/17/2016

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

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429D**	QC Batch: **R107181**			PrepDate			Analyst: **RB**
Specific Conductance	960	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429D**	QC Batch: **R107181**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429D**	QC Batch: **R107181**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429D**	QC Batch: **R107181**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429D**	QC Batch: **R107181**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-006

Client Sample ID: MW-917-Q216
Collection Date: 4/28/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429D**	QC Batch: **R107181**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-007

Client Sample ID: C-NR3-S-Q216
Collection Date: 4/28/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429D**	QC Batch: **R107181**			PrepDate			Analyst: **RB**
Specific Conductance	940	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-008

Client Sample ID: C-NR4-D-Q216
Collection Date: 4/28/2016 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429E**	QC Batch: **R107182**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-009

Client Sample ID: C-NR4-S-Q216
Collection Date: 4/28/2016 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429E**	QC Batch: **R107182**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-010

Client Sample ID: C-R27-D-Q216
Collection Date: 4/28/2016 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429E**	QC Batch: **R107182**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-011

Client Sample ID: C-R27-S-Q216
Collection Date: 4/28/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429E**	QC Batch: **R107182**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-012

Client Sample ID: RRB-Q216
Collection Date: 4/28/2016 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429E**	QC Batch: **R107182**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-013

Client Sample ID: SW1-Q216
Collection Date: 4/28/2016 1:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429E**	QC Batch: **R107182**			PrepDate			Analyst: **RB**
Specific Conductance	980	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-014

Client Sample ID: SW2-Q216
Collection Date: 4/28/2016 2:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160429E**	QC Batch: **R107182**			PrepDate			Analyst: **RB**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N019559-007DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **107181**
Client ID:	**ZZZZZZ**	Batch ID: **R107181**	TestNo: **EPA 120.1**		Analysis Date: **4/29/2016**	SeqNo: **2310374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	943.000	0.10						943.0	0	10	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N019559-014CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	107182
Client ID:	ZZZZZZ	Batch ID:	R107182	TestNo:	EPA 120.1			Analysis Date:	4/29/2016	SeqNo:	2310386

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1000.000	0.10						999.0	0.100	10	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-001

Client Sample ID: C-CON-D-Q216
Collection Date: 4/28/2016 9:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429B**	QC Batch: **R107179**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-002

Client Sample ID: C-CON-S-Q216
Collection Date: 4/28/2016 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429B**	QC Batch: **R107179**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-003

Client Sample ID: C-NR1-D-Q216
Collection Date: 4/28/2016 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429B**	QC Batch: **R107179**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429B**	QC Batch: **R107179**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-005

Client Sample ID: C-NR3-D-Q216
Collection Date: 4/28/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429B**	QC Batch: **R107179**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-006

Client Sample ID: MW-917-Q216
Collection Date: 4/28/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429B**	QC Batch: **R107179**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-007

Client Sample ID: C-NR3-S-Q216
Collection Date: 4/28/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429B**	QC Batch: **R107179**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-008

Client Sample ID: C-NR4-D-Q216
Collection Date: 4/28/2016 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429C**	QC Batch: **R107180**		PrepDate				Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429C**	QC Batch: **R107180**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-010

Client Sample ID: C-R27-D-Q216
Collection Date: 4/28/2016 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429C**	QC Batch: **R107180**		PrepDate				Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-011

Client Sample ID: C-R27-S-Q216
Collection Date: 4/28/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429C**	QC Batch: **R107180**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-012

Client Sample ID: RRB-Q216
Collection Date: 4/28/2016 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429C**	QC Batch: **R107180**		PrepDate				Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-013

Client Sample ID: SW1-Q216
Collection Date: 4/28/2016 1:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429C**	QC Batch: **R107180**			PrepDate			Analyst: **RB**
pH	7.6	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-014

Client Sample ID: SW2-Q216
Collection Date: 4/28/2016 2:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160429C**	QC Batch: **R107180**			PrepDate			Analyst: **RB**
pH	7.5	0.10	0.10	H	pH Units	1	4/29/2016
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	4/29/2016

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N019559-007DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **107179**
Client ID: **ZZZZZZ** Batch ID: **R107179** TestNo: **SM4500-H+B** Analysis Date: **4/29/2016** SeqNo: **2310346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.250	0.10						8.230	0.243	10	H
Temp. at time of pH Analysis	18.100	0.10						18.20	0.551	10	H

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID	N019559-014CDUP	SampType:	DUP	TestCode:	150.1_4500H	Units:	pH Units	Prep Date:		RunNo:	107180
Client ID:	ZZZZZZ	Batch ID:	R107180	TestNo:	SM4500-H+B			Analysis Date:	4/29/2016	SeqNo:	2310359

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.530	0.10						7.510	0.266	10	H
Temp. at time of pH Analysis	19.600	0.10						19.80	1.02	10	H

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-001

Client Sample ID: C-CON-D-Q216
Collection Date: 4/28/2016 9:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160429G**	QC Batch: **57241**				PrepDate	**4/29/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 10:45 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160429G** QC Batch: **57241**					PrepDate **4/29/2016**		Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	4/29/2016 10:45 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160502B**	QC Batch: **57263**				PrepDate	**5/2/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160502B**	QC Batch: **57263**				PrepDate	**5/2/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160502B**	QC Batch: **57263**				PrepDate	**5/2/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 11:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160502B**	QC Batch: **57263**				PrepDate	**5/2/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160502B** QC Batch: **57263**					PrepDate **5/2/2016**		Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 12:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160502B**	QC Batch: **57263**				PrepDate	**5/2/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160502B**	QC Batch: **57263**				PrepDate **5/2/2016**		Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **WETCHEM_160502B**	QC Batch: **57263**				PrepDate **5/2/2016**		Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-011

Client Sample ID: C-R27-S-Q216
Collection Date: 4/28/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160502B**	QC Batch: **57263**				PrepDate	**5/2/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_160502B**	QC Batch: **57263**				PrepDate	**5/2/2016**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/2/2016 09:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-57241**	SampType: **LCS**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **4/29/2016**	RunNo: **107184**
Client ID: **LCSW**	Batch ID: **57241**	TestNo: **SM2540D**		Analysis Date: **4/29/2016**	SeqNo: **2310390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	940.000	10	1000	0	94.0	80	120				

Sample ID **MB-57241**	SampType: **MBLK**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **4/29/2016**	RunNo: **107184**
Client ID: **PBW**	Batch ID: **57241**	TestNo: **SM2540D**		Analysis Date: **4/29/2016**	SeqNo: **2310391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N019559-002D-DUP**	SampType: **DUP**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **4/29/2016**	RunNo: **107184**
Client ID: **ZZZZZZ**	Batch ID: **57241**	TestNo: **SM2540D**		Analysis Date: **4/29/2016**	SeqNo: **2310402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-57263	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/2/2016	RunNo:	108330
Client ID:	LCSW	Batch ID:	57263	TestNo:	SM2540D			Analysis Date:	5/2/2016	SeqNo:	2319209

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	947.000	10	1000	0	94.7	80	120				

Sample ID	MB-57263	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/2/2016	RunNo:	108330
Client ID:	PBW	Batch ID:	57263	TestNo:	SM2540D			Analysis Date:	5/2/2016	SeqNo:	2319210

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N019559-012D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/2/2016	RunNo:	108330
Client ID:	ZZZZZZ	Batch ID:	57263	TestNo:	SM2540D			Analysis Date:	5/2/2016	SeqNo:	2319221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 10:38 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 09:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 11:17 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 11:59 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 10:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 12:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 10:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 12:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 10:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-006

Client Sample ID: MW-917-Q216
Collection Date: 4/28/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 01:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 10:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-007

Client Sample ID: C-NR3-S-Q216
Collection Date: 4/28/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 01:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 10:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 12:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 02:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 10:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-009

Client Sample ID: C-NR4-S-Q216
Collection Date: 4/28/2016 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 02:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 10:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-010

Client Sample ID: C-R27-D-Q216
Collection Date: 4/28/2016 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 02:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 11:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-011

Client Sample ID: C-R27-S-Q216
Collection Date: 4/28/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 03:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 11:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-012

Client Sample ID: RRB-Q216
Collection Date: 4/28/2016 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 03:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 11:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-013

Client Sample ID: SW1-Q216
Collection Date: 4/28/2016 1:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 04:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 11:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-014

Client Sample ID: SW2-Q216
Collection Date: 4/28/2016 2:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505A**	QC Batch: **R108290**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 04:20 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/6/2016 11:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108290	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290		
Client ID:	PBW	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317490		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R108290	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290		
Client ID:	LCSW	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317491		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.179	0.20	5.000	0	104	90	110					

Sample ID	N019543-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290		
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317493		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.077	0.20	1.000	0	108	90	110					

Sample ID	N019559-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290		
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317495		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		0.071	0.20						0.06900	0	20		

Sample ID	N019559-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290		
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317496		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.070	0.20	1.000	0.06900	100	90	110					

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019559-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317497

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.104	0.20	1.000	0.06900	104	90	110	1.070	3.16	20	

Sample ID	N019559-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0.06840	100	90	110				

Sample ID	N019559-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID	N019559-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.155	0.20	1.000	0.1224	103	90	110				

Sample ID	N019559-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317509

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.201	0.20	1.000	0.1407	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019559-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.202	0.20	1.000	0.1106	109	90	110				

Sample ID	N019559-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Sample ID	N019559-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	109	90	110				

Sample ID	N019559-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.064	0.20	1.000	0	106	90	110				

Sample ID	N019559-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317523

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019559-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317527

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.215	0.20	1.000	0.1347	108	90	110				

Sample ID	N019559-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317529

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.197	0.20	1.000	0.1899	101	90	110				

Sample ID	N019559-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317530

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID	N019559-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108290
Client ID:	ZZZZZZ	Batch ID:	R108290	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-57247**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **PBW**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.293	1.0									

Sample ID **LCS-57247**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **LCSW**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.812	1.0	10.00	0	108	85	115				

Sample ID **N019559-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.031	1.0	10.00	0.1212	99.1	75	125				

Sample ID **N019559-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.944	1.0	10.00	0.1212	98.2	75	125	10.03	0.867	20	

Sample ID **N019559-011B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.807	1.0	10.00	0	98.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-001

Client Sample ID: C-CON-D-Q216
Collection Date: 4/28/2016 9:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-002

Client Sample ID: C-CON-S-Q216
Collection Date: 4/28/2016 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-005

Client Sample ID: C-NR3-D-Q216
Collection Date: 4/28/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-006

Client Sample ID: MW-917-Q216
Collection Date: 4/28/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-007

Client Sample ID: C-NR3-S-Q216
Collection Date: 4/28/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-008

Client Sample ID: C-NR4-D-Q216
Collection Date: 4/28/2016 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.49	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-009

Client Sample ID: C-NR4-S-Q216
Collection Date: 4/28/2016 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.37	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-011

Client Sample ID: C-R27-S-Q216
Collection Date: 4/28/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-012

Client Sample ID: RRB-Q216
Collection Date: 4/28/2016 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.37	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R108308	**MBLK**	**4500N03F_W**	**mg/L**		**108308**
Client ID: **PBW**	Batch ID: **R108308**	TestNo: **SM4500-NO3**		Analysis Date: **5/7/2016**	SeqNo: **2318759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R108308	**LCS**	**4500N03F_W**	**mg/L**		**108308**
Client ID: **LCSW**	Batch ID: **R108308**	TestNo: **SM4500-NO3**		Analysis Date: **5/7/2016**	SeqNo: **2318760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.492	0.050	0.5000	0	98.4	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019519-013CDUP	**DUP**	**4500N03F_W**	**mg/L**		**108308**
Client ID: **ZZZZZZ**	Batch ID: **R108308**	TestNo: **SM4500-NO3**		Analysis Date: **5/7/2016**	SeqNo: **2318762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.03580	0	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019519-013CMS	**MS**	**4500N03F_W**	**mg/L**		**108308**
Client ID: **ZZZZZZ**	Batch ID: **R108308**	TestNo: **SM4500-NO3**		Analysis Date: **5/7/2016**	SeqNo: **2318763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0.03580	92.9	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019519-013CMSD	**MSD**	**4500N03F_W**	**mg/L**		**108308**
Client ID: **ZZZZZZ**	Batch ID: **R108308**	TestNo: **SM4500-NO3**		Analysis Date: **5/7/2016**	SeqNo: **2318764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0.03580	91.5	75	125	0.5005	1.45	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-001

Client Sample ID: C-CON-D-Q216
Collection Date: 4/28/2016 9:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/10/2016 05:26 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	82	1.8	20		ug/L	1	5/4/2016 12:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-002

Client Sample ID: C-CON-S-Q216
Collection Date: 4/28/2016 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/10/2016 05:43 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	64	1.8	20		ug/L	1	5/4/2016 12:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/10/2016 05:48 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	56	1.8	20		ug/L	1	5/4/2016 12:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-004

Client Sample ID: C-NR1-S-Q216
Collection Date: 4/28/2016 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/10/2016 05:53 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	59	1.8	20		ug/L	1	5/4/2016 12:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q216
Lab Order:	N019559	**Collection Date:**	4/28/2016 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019559-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	64	1.8	20		ug/L	1	5/10/2016 05:59 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	110	1.8	20		ug/L	1	5/4/2016 12:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-006

Client Sample ID: MW-917-Q216
Collection Date: 4/28/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/10/2016 06:04 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160504C**	QC Batch: **57237**			PrepDate	**4/29/2016**		Analyst: **CEI**
Iron	59	1.8	20		ug/L	1	5/4/2016 12:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-007

Client Sample ID: C-NR3-S-Q216
Collection Date: 4/28/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	27	1.8	20		ug/L	1	5/10/2016 06:09 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160511D**	QC Batch: **58387**			PrepDate	**5/11/2016**		Analyst: **CEI**
Iron	49	1.8	20		ug/L	1	5/11/2016 08:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-008

Client Sample ID: C-NR4-D-Q216
Collection Date: 4/28/2016 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**				PrepDate	**5/4/2016**	Analyst: **CEI**
Iron	24	1.8	20		ug/L	1	5/10/2016 06:20 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160511D**	QC Batch: **58387**				PrepDate	**5/11/2016**	Analyst: **CEI**
Iron	43	1.8	20		ug/L	1	5/11/2016 08:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-009

Client Sample ID: C-NR4-S-Q216
Collection Date: 4/28/2016 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	41	1.8	20		ug/L	1	5/10/2016 06:25 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160511D**	QC Batch: **58387**			PrepDate	**5/11/2016**		Analyst: **CEI**
Iron	34	1.8	20		ug/L	1	5/11/2016 08:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-010

Client Sample ID: C-R27-D-Q216
Collection Date: 4/28/2016 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	40	1.8	20		ug/L	1	5/10/2016 06:31 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160511D**	QC Batch: **58387**			PrepDate	**5/11/2016**		Analyst: **CEI**
Iron	78	1.8	20		ug/L	1	5/11/2016 08:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-011

Client Sample ID: C-R27-S-Q216
Collection Date: 4/28/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**				PrepDate	**5/4/2016**	Analyst: **CEI**
Iron	20	1.8	20		ug/L	1	5/10/2016 06:47 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160511D**	QC Batch: **58387**				PrepDate	**5/11/2016**	Analyst: **CEI**
Iron	60	1.8	20		ug/L	1	5/11/2016 08:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-012

Client Sample ID: RRB-Q216
Collection Date: 4/28/2016 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160510E**	QC Batch: **57287**			PrepDate	**5/4/2016**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/10/2016 06:53 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160511D**	QC Batch: **58387**			PrepDate	**5/11/2016**		Analyst: **CEI**
Iron	66	1.8	20		ug/L	1	5/11/2016 09:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-57287**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/4/2016**	RunNo: **108380**
Client ID: **PBW**	Batch ID: **57287**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-57287**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/4/2016**	RunNo: **108380**
Client ID: **LCSW**	Batch ID: **57287**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.782	20	100.0	0	109	85	115				

Sample ID **N019543-012B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/4/2016**	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **57287**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.884	20	100.0	18.46	101	75	125				

Sample ID **N019543-012B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/4/2016**	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **57287**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	121.560	20	100.0	18.46	103	75	125	119.9	1.39	20	

Sample ID **N019559-007B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/4/2016**	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **57287**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.502	20	100.0	27.01	91.5	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-57237	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	PBW	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315868

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	2.301	20									

Sample ID	N019543-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	ZZZZZZ	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315873

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	203.845	20	100.0	114.2	89.6	75	125				

Sample ID	N019543-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	ZZZZZZ	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315874

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	203.705	20	100.0	114.2	89.5	75	125	203.8	0.0685	20	

Sample ID	N019543-011C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	ZZZZZZ	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	178.454	20	100.0	94.57	83.9	75	125				

Sample ID	LCS-57237	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	4/29/2016	RunNo:	108259
Client ID:	LCSW	Batch ID:	57237	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/4/2016	SeqNo:	2315899

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	104.535	20	100.0	0	105	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-58387	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108415
Client ID:	PBW	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324072

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	6.243	20									

Sample ID	N019559-007C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108415
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324077

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	147.364	20	100.0	49.26	98.1	75	125				

Sample ID	N019559-007C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108415
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324078

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	149.062	20	100.0	49.26	99.8	75	125	147.4	1.15	20	

Sample ID	LCS1-58387	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108415
Client ID:	LCSW	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324100

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	111.146	20	100.0	0	111	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-001

Client Sample ID: C-CON-D-Q216
Collection Date: 4/28/2016 9:45:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160506C** QC Batch: **57247** PrepDate **5/2/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.025	0.10		µg/L	1	5/6/2016 09:30 PM
Barium	140	0.35	5.0		µg/L	5	5/9/2016 01:32 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 09:30 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	5/6/2016 09:30 PM
Selenium	1.9	0.028	0.50		µg/L	1	5/6/2016 09:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-002

Client Sample ID: C-CON-S-Q216
Collection Date: 4/28/2016 10:00:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160506C** QC Batch: **57247** PrepDate **5/2/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.2	0.025	0.10		µg/L	1	5/6/2016 10:09 PM
Barium	130	0.070	1.0		µg/L	1	5/9/2016 02:00 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 10:09 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/6/2016 10:09 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/9/2016 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-003

Client Sample ID: C-NR1-D-Q216
Collection Date: 4/28/2016 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	5/6/2016 10:14 PM
Barium	140	0.070	1.0		µg/L	1	5/9/2016 02:05 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 10:14 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	5/6/2016 10:14 PM
Selenium	1.8	0.028	0.50		µg/L	1	5/6/2016 10:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-004

Client Sample ID: C-NR1-S-Q216
Collection Date: 4/28/2016 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/6/2016 10:20 PM
Barium	130	0.070	1.0		µg/L	1	5/9/2016 02:22 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 10:20 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/6/2016 10:20 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/6/2016 10:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-005

Client Sample ID: C-NR3-D-Q216
Collection Date: 4/28/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	5/6/2016 10:25 PM
Barium	130	0.070	1.0		µg/L	1	5/9/2016 02:28 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 10:25 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	5/6/2016 10:25 PM
Selenium	2.0	0.028	0.50		µg/L	1	5/6/2016 10:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-006

Client Sample ID: MW-917-Q216
Collection Date: 4/28/2016 11:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/6/2016 10:31 PM
Barium	130	0.070	1.0		µg/L	1	5/9/2016 02:33 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 10:31 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	5/6/2016 10:31 PM
Selenium	1.8	0.028	0.50		µg/L	1	5/6/2016 10:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-007

Client Sample ID: C-NR3-S-Q216
Collection Date: 4/28/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	5/6/2016 10:36 PM
Barium	130	0.070	1.0		µg/L	1	5/9/2016 02:39 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 10:36 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/6/2016 10:36 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/6/2016 10:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-008

Client Sample ID: C-NR4-D-Q216
Collection Date: 4/28/2016 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/6/2016 10:42 PM
Barium	130	0.070	1.0		µg/L	1	5/9/2016 02:44 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 10:42 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/6/2016 10:42 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/10/2016 11:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-009

Client Sample ID: C-NR4-S-Q216
Collection Date: 4/28/2016 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	2.4	0.025	0.10		µg/L	1	5/6/2016 10:58 PM
Barium	140	0.070	1.0		µg/L	1	5/9/2016 02:50 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 10:58 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	5/6/2016 10:58 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/6/2016 10:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-010

Client Sample ID: C-R27-D-Q216
Collection Date: 4/28/2016 8:30:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160506C** QC Batch: **57247** PrepDate **5/2/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.025	0.10		µg/L	1	5/6/2016 11:04 PM
Barium	130	0.070	1.0		µg/L	1	5/9/2016 02:55 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 11:04 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/6/2016 11:04 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/6/2016 11:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-011

Client Sample ID: C-R27-S-Q216
Collection Date: 4/28/2016 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/6/2016 11:10 PM
Barium	140	0.35	5.0		µg/L	5	5/9/2016 03:01 PM
Manganese	ND	0.056	0.50		µg/L	1	5/6/2016 11:10 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/6/2016 11:10 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/6/2016 11:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019559
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N019559-012

Client Sample ID: RRB-Q216
Collection Date: 4/28/2016 9:15:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **ICP7_160506C** QC Batch: **57247** PrepDate **5/2/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.2	0.025	0.10		µg/L	1	5/6/2016 11:21 PM
Barium	140	0.070	1.0		µg/L	1	5/9/2016 03:12 PM
Manganese	0.67	0.056	0.50		µg/L	1	5/6/2016 11:21 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	5/6/2016 11:21 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/6/2016 11:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57247**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108313**
Client ID: **PBW**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.106	0.50									
Selenium	ND	0.50									

Sample ID **LCS-57247**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108313**
Client ID: **LCSW**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.090	0.10	10.00	0	101	85	115				
Manganese	102.399	0.50	100.0	0	102	85	115				
Molybdenum	10.380	0.50	10.00	0	104	85	115				
Selenium	10.490	0.50	10.00	0	105	85	115				

Sample ID **N019559-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.270	0.10	10.00	2.331	99.4	75	125				
Manganese	94.885	0.50	100.0	0	94.9	75	125				
Molybdenum	16.229	0.50	10.00	5.500	107	75	125				
Selenium	11.727	0.50	10.00	1.868	98.6	75	125				

Sample ID **N019559-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.362	0.10	10.00	2.331	100	75	125	12.27	0.745	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019559-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108313
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/6/2016	SeqNo:	2318238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.422	0.50	100.0	0	94.4	75	125	94.88	0.489	20	
Molybdenum	16.086	0.50	10.00	5.500	106	75	125	16.23	0.888	20	
Selenium	11.589	0.50	10.00	1.868	97.2	75	125	11.73	1.19	20	

Sample ID	N019559-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108313
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/6/2016	SeqNo:	2318251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.394	0.10	10.00	2.218	102	75	125				
Manganese	94.254	0.50	100.0	0	94.3	75	125				
Molybdenum	16.125	0.50	10.00	5.183	109	75	125				
Selenium	11.388	0.50	10.00	1.558	98.3	75	125				

Sample ID	MB-57247	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108342
Client ID:	PBW	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321101

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									

Sample ID	LCS-57247	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108342
Client ID:	LCSW	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321102

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	106.590	1.0	100.0	0	107	85	115				

Sample ID	N019559-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321106

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019559-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321106

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	239.463	5.0	100.0	136.7	103	75	125				

Sample ID	N019559-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321107

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	238.879	5.0	100.0	136.7	102	75	125	239.5	0.244	20	

Sample ID	N019559-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321120

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	242.341	5.0	100.0	138.1	104	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Global ID: Specify State:
Submitted By: SEAN MAHER	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Sample Temp: 2.1 / 3.5 / 2.9 / 3.5
Title: ENV ENG			
Signature: Date: 4/28/16	Sampled By: Jason Mahn		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: Date: 4/28/16		
Project Number: RC000753.0801			

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019559 - 01	C-CON-D-Q216	4/28/2016	0945		X		X		X	X		X	X			X	X	E	9	P	BNS
2	- 02	C-CON-S-Q216	4/28/2016	1000		X		X		X	X		X	X			X	X	E	9	P	BNS
3	- 03	C-NR1-D-Q216	4/28/2016	1020		X		X		X	X		X	X			X	X	E	9	P	BNS
4	- 04	C-NR1-S-Q216	4/28/2016	1040		X		X		X	X		X	X			X	X	E	9	P	BNS
5	- 05	C-NR3-D-Q216	4/28/2016	1115		X		X		X	X		X	X			X	X	E	9	P	BNS
6	- 06	MW-917-Q216	4/28/2016	1120		X		X		X	X		X	X			X	X	E	9	P	BNS
7	- 07	C-NR3-S-Q216	4/28/2016	1130		X		X		X	X		X	X			X	X	E	9	P	BNS
8	- 08	C-NR4-D-Q216	4/28/2016	1215		X		X		X	X		X	X			X	X	E	9	P	BNS
9	- 09	C-NR4-S-Q216	4/28/2016	1225		X		X		X	X		X	X			X	X	E	9	P	BNS
10	- 10	C-R27-D-Q216	4/28/2016	0830		X		X		X	X		X	X			X	X	E	9	P	BNS
11	- 11	C-R27-S-Q216	4/28/2016	0850		X		X		X	X		X	X			X	X	E	9	P	BNS
12	- 12	RRB-Q216	4/28/2016	0915		X		X		X	X		X	X			X	X	E	9	P	BNS
13	- 13	SW1-Q216	4/28/2016	1345		X		X					X	X			~~X~~	~~X~~	E	7	P	BNS
14	- 14	SW2-Q216	4/28/2016	1400		X		X					X	X					E	7	P	BNS

Courier:
Tracking No.:

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/28/16 1631		4/28/16 1631
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/28/16 1900		4/28/16 1900
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/28/2016	Workorder:	N019559
Rep sample Temp (Deg C):	2.1/3.2/2.9/3.5	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for pH was past holding time upon receipt

Checklist Completed By: MBC For: 5/2/2016

Reviewed By: 05/05/16

ASSET Laboratories

WORK ORDER Summary

29-Apr-16

WorkOrder: N019559

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019559-001A	C-CON-D-Q216	4/28/2016 9:45:00 AM	5/12/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-001B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-001C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-001D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-001E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-002A	C-CON-S-Q216	4/28/2016 10:00:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-002B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-002C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-002D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

29-Apr-16

WorkOrder: N019559

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019559-002D	C-CON-S-Q216	4/28/2016 10:00:00 AM	5/12/2016	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-002E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-003A	C-NR1-D-Q216	4/28/2016 10:20:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-003B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-003C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-003D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-003E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-004A	C-NR1-S-Q216	4/28/2016 10:40:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-004B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

29-Apr-16

WorkOrder: N019559

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019559-004B	C-NR1-S-Q216	4/28/2016 10:40:00 AM	5/12/2016	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-004C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-004D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-004E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-005A	C-NR3-D-Q216	4/28/2016 11:15:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-005B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-005C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-005D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW

WORK ORDER Summary

29-Apr-16

WorkOrder: N019559

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019559-005E	C-NR3-D-Q216	4/28/2016 11:15:00 AM	5/12/2016	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-006A	MW-917-Q216	4/28/2016 11:20:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-006B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-006C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-006D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-006E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-007A	C-NR3-S-Q216	4/28/2016 11:30:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-007B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-007C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

29-Apr-16

WorkOrder: N019559

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019559-007C	C-NR3-S-Q216	4/28/2016 11:30:00 AM	5/12/2016	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-007D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-007E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-008A	C-NR4-D-Q216	4/28/2016 12:15:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-008B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-008C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-008D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-008E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-009A	C-NR4-S-Q216	4/28/2016 12:25:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-009B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

29-Apr-16

WorkOrder: N019559

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019559-009B	C-NR4-S-Q216	4/28/2016 12:25:00 PM	5/12/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-009C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-009D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-009E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-010A	C-R27-D-Q216	4/28/2016 8:30:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-010B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-010C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-010D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

29-Apr-16

WorkOrder: N019559

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019559-010D	C-R27-D-Q216	4/28/2016 8:30:00 AM	5/12/2016	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N019559-010E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-011A	C-R27-S-Q216	4/28/2016 8:50:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-011B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-011C			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-011D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-011E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-012A	RRB-Q216	4/28/2016 9:15:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-012B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

29-Apr-16

WorkOrder: N019559

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019559-012C	RRB-Q216	4/28/2016 9:15:00 AM	5/12/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N019559-012D			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2016			Total Suspended Solids Prep	☐	☐	☐	WW
N019559-012E			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019559-013A	SW1-Q216	4/28/2016 1:45:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-013B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-013C			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
N019559-014A	SW2-Q216	4/28/2016 2:00:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019559-014B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019559-014C			5/12/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2016		SM4500-H+B	pH	☐	☐	☐	WW
N019559-015A	FOLDER		5/12/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/12/2016		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N019559**

NAME	TEST METHOD
Quennie Manimtim	SM 2540D
Claire Ignacio	EPA 6010B, EPA 6020
Ryan Balilu	EPA 120.1, SM 4500 H+B, SM 4500-NO3F
Janette Soria	EPA 218.6

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R107181, R107182 **Analyst:** REB

ASSET #: N019559 **Date Analyzed:** 4/29/2016

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.			X			
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Reb 05/13/2016 Date:

2nd Level Reviewer 5/16/2016 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: CONTINUATION

Analyst:

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1	N0195 43- 011D	H2O	988 ms/cm @ 19.5°C	
2	1D		982 @ 20.0°C	
3	13D		1053 @ 20.3°C	
4	14D		1063 @ 20.7°C	
5	N0195 49- 001C		3590 @ 20.7°C	
6	2C		8060 @ 20.6°C	
7	2CDup		8040 @ 20.7	
8				
9	14B ms/cm	CINV - 160111B	MM1 @ 21.8°C	
10	10,006	CINV- 150909A	10370 @ 21.7°C	
Dup	99893	CINV- 151130A	10400 @ 21.9°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 4/29/16 1320

Analyst:

Standard	Std ID	Reading	Comments
9.31 ms/cm	CIM - 160111A	9.17 ms/cm @ 22.4°C	% Rec: (90-110%)
1412	CIM - 151012A	1417 @22.4°C	
9992	CIM - 160111B	10240 @22.4°C	
99797	CIM - 151012B	102400 @22.4°C	

	Sample ID	Matrix	Reading	Comments
1	N0195 58- 001A	H2O	158.6 ms/cm @21.5°C	
2	2A		509 @21.0°C	
3	3A		134.8 @21.0°C	
4	N0195 59-001D		957 @19.9°C	
5	2D		950 @19.5°C	
6	3D		950 @19.6°C	
7	4D		951 @19.6°C	
8	5D		944 @19.5°C	
9	6D		950 @19.1°C	
10	7D		943 @19.7°C	
Dup	7D		943 @19.7°C	Accept: 10% water, 20% soil
	Std Chk: 1413 ms/cm	CIM - 160111B	1444 @22.3°C	% Rec: (90-110%)
	10,000	150909A	10680 @22.4°C	Logbook # 5
	99485	151130A	94300 @22.5°C	

Conductivity Logbook

Date: _____

Analyst: _____

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)
	Cont		

	Sample ID	Matrix	Reading	Comments
1	N019559-008D	H_2O	953 µS/cm @ 20.1°C	
2	9D		951 @ 20.2°C	
3	10D		949 @ 20.4°C	
4	11D		952 @ 20.5°C	
5	12D		949 @ 20.1°C	
6	13C		985 @ 20.4°C	
7	14C		999 @ 20.4°C	
8	N019559-14DDUP		1000 @ 20.5°C	
9	N019561-001D	H_2O	401 @ 21.1°C	
10	2D		412 @ 21.5°C	
Dup	3D		401 @ 21.7°C	Accept: 10% water, 20% soil
	Std Chk: 1413 µS/cm	~~1413 µS/cm @~~ CIM - 160111B	1443 @ 22.6°C	% Rec: (90-110%)
	10,000	CIM - 150909A	10690 @ 22.5°C	
	99893	CIM - 151130A	95700 @ 22.6°C	

Date: 05/04/16 1405

Analyst: MEB

Standard	Std ID	Reading	Comments
9.31 µS/cm	CIM - 160111A	9.47 µS/cm @ 28.7°C	% Rec: (90-110%)
1412	151012A	1413 @ 28.7°C	
9992	160111B	10220 @ 28.7°C	
99797	151012B	101400 @ 28.5°C	

	Sample ID	Matrix	Reading	Comments
1	N019619-001B	H_2O	1079 µS/cm @ 24.3°C	
2	N019620-001B		1054 @ 24.0°C	
3	N019621-001B		1052 @ 24.0°C	
4	N019622-001B		1061 @ 24.3°C	
5	N019623-001B		1049 @ 24.7°C	
6	N019613-001A		3720 @ 25.0°C	
7	2D		7780 @ 24.7°C	
8	N019614-001A		7060 @ 24.6°C	
9	2A		7450 @ 24.9°C	
10	2ADUP		7430 @ 25.0°C	
Dup				Accept: 10% water, 20% soil
	Std Chk: 1413 µS/cm	CIM - 160111B	1482 µS/cm @ 27.2°C	% Rec: (90-110%)
	10,000	150909A	15700 µS/cm 27.4°C	Logbook # 5
	99893	151130A	92100 @ 24.9°C	

Reb 05/13/2016

SM 4500 H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R107180 / R107179 **Instrument ID:** pH Meter

ASSET #: N019559 **Analyst:** REB

Date Analyzed: 4/29/2016

Method: EPA 150.1

pH Meter Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X			✓		
2. Was a closing buffer used at the end of analysis?	X			✓		
3. Was the meter checked every 10 samples?			X			✓
Sample Information						
4. Are all samples analyzed within hold time.		X			✓	
QC Items						
5. Was a duplicate sample analyzed?	X			✓		
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			✓
7. Runlog complete and included in package.	X			✓		
Preliminary Report						
8. Does the raw data match the preliminary report?	X			✓		
9. Are analytical results correct?	X			✓		
10. Is the QC summary report present and complete?	X			✓		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	✓		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Rob 05/13/2016 Date: —

2nd Level Reviewer 5/16/2016 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.26
www.assetlaboratories.com

pH Logbook

Date: CONTINUATION

Analyst:

Standard	Std ID	pH	Comments
Buffer 4			
Buffer 7			
Buffer 10		2	

	Sample ID	Matrix	pH	Comments
1	N0195 43 - 01 1D	H_2O	~~8.17~~ ~~8.19~~ @ 18.5°C	
2	12D		8.19 @ 18.4°C	
3	13D		7.66 @ 18.7°C	
4	14D		7.70 @ 19.6°C	
5	14DDUP		7.68 @ 19.7°C	
6	N0195 44 - 001C		7.57 @ 19.3°C	
7	2C		7.24 @ 19.4°C	
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CINV-160111C	7.03 @ 22.0°C	Accept: +/-0.1 pH units from expected value

Date: ~~04~~ 04/29/16 1315

Analyst: RBM

Standard	Std ID	pH	Comments
Buffer 4	CINV - 150828B	4.03 @ 22.3°C	Slope: 98.8%
Buffer 7	CINV - 160309A	7.03 @ 23.4°C	
Buffer 10	CINV-160111D	10.05 @ 22.1°C	

	Sample ID	Matrix	pH	Comments
1	N0195 58 - 001A	H_2O	6.47 @ 19.8°C	
2	2A		6.41 @ 20.2°C	
3	3A		6.42 @ 20.1°C	
4	N0195 59 - 001D		8.19 @ 18.6°C	
5	2D		8.22 @ 18.3°C	
6	3D		8.22 @ 18.4°C	
7	4D		8.24 @ 18.7°C	
8	5D		8.23 @ 18.3°C	
9	6D		8.25 @ 18.1°C	
10	7D		8.23 @ 18.2°C	
Dup	7 ~~8~~D		8.25 @ 18.1°C	Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CINV-160111C	7.04 @ 21.8°C	Accept: +/-0.1 pH units from expected value

pH Logbook

Date: —

Analyst: —

Standard	Std ID	pH	Comments
Buffer 4			
Buffer 7	Cont		
Buffer 10			

	Sample ID	Matrix	pH	Comments
1	NO19559-008D	H_2O	8.16 @ 18.6°C	
2	9D		8.20 @ 19.1°C	
3	10D		8.24 @ 18.5°C	
4	11D		8.23 @ 19.1°C	
5	12D		8.22 @ 18.5°C	
6	13L		7.61 @ 19.5°C	
7	14L		7.51 @ 19.8°C	
8	~~NO19561-001D~~ 14DUP		7.53 @ 19.6°C	
9	~~2D~~			
10	~~3D~~			
Dup	~~4D~~			Accept: 10% water, 20% soil
	Buffer 4 (7) 10	CIM - 160111C	7.04 @ 22.3°C	Accept: +/-0.1 pH units from expected value

(Circle one)

Date: 04/29/16

Analyst: [illegible]

Standard	Std ID	pH	Comments
Buffer 4	CIM - 150828B	4.03 @ 22.7°C	SLOPE 98.8%
Buffer 7	CIM - 160309A	7.02 @ 22.9°C	
Buffer 10	CIM - 160111D	10.07 @ 22.8°C	

	Sample ID	Matrix	pH	Comments
1	NO19957-001A	Soil	8.97 @ 23.7°C	
2	1 DUP	1	9.09 @ 23.8°C	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7) 10	CIM - 160111C	7.00 @ 23.2°C	Accept: +/-0.1 pH units from expected value

(Circle one)

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57241/57263 **Analyst:** QBM

ASSET #: N019559 **Date Analyzed:** 4/29/16,5/2/16

Method: EPA 160.2

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/~~MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/17/2016

2nd Level Reviewer: Nancy 5/17/2016 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

-003D

For **N019559-0~~01~~B,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4386- 1.4384) *1000000}{100}$$

= 2 mg/L

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 5/17/2016

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/29/2016 10:45:28**
Prep End Date: **4/29/2016 7:09:53 P**

Initials/ Date: 5/13/2016

Prep Batch **57241** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL Temp (°C) 105

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57241	Water		100	☐	0	0	100	1.000		
MB-57241	Water		100	☐	0	0	100	1.000		
N019543-010D	Groundwater		100	☐	0	0	100	1.000		
N019543-011D	Groundwater		100	☐	0	0	100	1.000		
N019543-012D	Groundwater		100	☐	0	0	100	1.000		
N019543-013D	Groundwater		100	☐	0	0	100	1.000		
N019543-014D	Groundwater		100	☐	0	0	100	1.000		
N019558-001A	Surface Water		100	☐	0	0	100	1.000		
N019558-002A	Surface Water		100	☐	0	0	100	1.000		
N019558-003A	Surface Water		100	☐	0	0	100	1.000		
N019559-001D	Groundwater		100	☐	0	0	100	1.000		
N019559-002D	Groundwater		100	☐	0	0	100	1.000		
N019559-002D-DU	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8392	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160404A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 4/29/2016 10:45:28
Prep End Date:

Initials/ Date: Julia Ramit 5/17/2016

Prep Batch 57241 Prep Code: 160.2_W_PRE Technician: Quennie Manimtim

Prep Factor Units: mL / mL

Sample ID		Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57241	LCS2	Water		100	☐	0	0	100	1.000		
MB-57241	MB2	Water		100	☐	0	0	100	1.000		
N019543-010D	11	Groundwater		100	☐	0	0	100	1.000		
N019543-011D	12	Groundwater		100	☐	0	0	100	1.000		
N019543-012D	13	Groundwater		100	☐	0	0	100	1.000		
N019543-013D	14	Groundwater		100	☐	0	0	100	1.000		
N019543-014D	K	Groundwater		100	☐	0	0	100	1.000		
N019558-001A	16	Surface Water		100	☐	0	0	100	1.000		
N019558-002A	17	Surface Water		100	☐	0	0	100	1.000		
N019558-003A	18	Surface Water		100	☐	0	0	100	1.000		
N019559-001D	19	Groundwater		100	☐	0	0	100	1.000		
N019559-002D	20	Groundwater		100	☐	0	0	100	1.000		
N019559-002D-DU	MS2	Groundwater		100	☐	0	0	100	1.000		

#8392

IWSTI60404A

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2016 9:38:54 A**
Prep End Date: **5/2/2016 4:40:00 P**

Initials/ Date: Julia Ramit 5/17/2016

Prep Batch **57263** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units: **mL / mL**

Temp (°C) 105

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57263	Water		100	☐	0	0	100	1.000		
MB-57263	Water		100	☐	0	0	100	1.000		
N019559-003D	Groundwater		100	☐	0	0	100	1.000		
N019559-004D	Groundwater		100	☐	0	0	100	1.000		
N019559-005D	Groundwater		100	☐	0	0	100	1.000		
N019559-006D	Groundwater		100	☐	0	0	100	1.000		
N019559-007D	Groundwater		100	☐	0	0	100	1.000		
N019559-008D	Groundwater		100	☐	0	0	100	1.000		
N019559-009D	Groundwater		100	☐	0	0	100	1.000		
N019559-010D	Groundwater		100	☐	0	0	100	1.000		
N019559-011D	Groundwater		100	☐	0	0	100	1.000		
N019559-012D	Groundwater		100	☐	0	0	100	1.000		
N019559-012D-DU	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8392	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160404A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2016 9:38:54 A**
Prep End Date:

Initials/ Date: Julia Ramit 5/17/2016

Prep Batch **57263** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57263	Water		100	☐	0	0	100	1.000		
MB-57263	Water		100	☐	0	0	100	1.000		
N019559-003D	Groundwater		100	☐	0	0	100	1.000		
N019559-004D	Groundwater		100	☐	0	0	100	1.000		
N019559-005D	Groundwater		100	☐	0	0	100	1.000		
N019559-006D	Groundwater		100	☐	0	0	100	1.000		
N019559-007D	Groundwater		100	☐	0	0	100	1.000		
N019559-008D	Groundwater		100	☐	0	0	100	1.000		
N019559-009D	Groundwater		100	☐	0	0	100	1.000		
N019559-010D	Groundwater		100	☐	0	0	100	1.000		
N019559-011D	Groundwater		100	☐	0	0	100	1.000		
N019559-012D	Groundwater		100	☐	0	0	100	1.000		
N019559-012D-DU	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

#8392
IWST160404A

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
4/24/16 MB2	MB-57241	100	1.4173 1.4170	1.4174 1.4172	
WS2	WS-57241		1.4257 1.4258	1.5200 1.5198	
11	NO19313-0101D		1.4276 1.4278	1.4277 1.4279	
12	11D		1.4275 1.4274	1.4277 1.4277	
13	12D		1.4268 1.4268	1.4271 1.4268	
M	BD		1.4354 1.4354	1.4461 1.4459	
K	MD		1.4273 1.4271	1.4372 1.4371	
14	NO19358-0014		1.4211 1.4211	1.4222 1.4221	
17	2A		1.4221 1.4220	1.4264 1.4263	
18	3A		~~1.4432~~ 1.4402 1.4402	1.4430 1.4432	

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
4/2/11 19	N019559-001D	100	1.4340 1.4340	1.4340 1.4340	
20	2D		1.4391 1.4390	1.4391 1.4390	
DUP2	2DDUP		1.4389 1.4391	1.4391 1.4392	

ASSET Laboratories

Logbook#2

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
4/29/2016							
MB-57241	100	1.4172	1.4172	0.0000	1.00	0	MBLK
LCS-57241	100	1.4258	1.5198	940.0000	1.00	940	LCS
N019543-010D	100	1.4278	1.4279	1.0000	1.00	1	SAMP
N019543-011D	100	1.4274	1.4277	3.0000	1.00	3	SAMP
N019543-012D	100	1.4268	1.4268	0.0000	1.00	0	SAMP
N019543-013D	100	1.4354	1.4459	105.0000	1.00	105	SAMP
N019543-014D	100	1.4271	1.4371	100.0000	1.00	100	SAMP
N019558-001A	100	1.4211	1.4221	10.0000	1.00	10	SAMP
N019558-002A	100	1.422	1.4262	42.0000	1.00	42	SAMP
N019558-003A	100	1.4402	1.4432	30.0000	1.00	30	SAMP
N019559-001D	100	1.434	1.434	0.0000	1.00	0	SAMP
N019559-002D	100	1.439	1.439	0.0000	1.00	0	SAMP
N019559-002D-DUP	100	1.4391	1.4392	1.0000	1.00	1	DUP

Julia Ramit 5/17/2016

SOLIDS RAW DATA

TEST : (TSS) TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/2/16 mb1	MB-57263	100	1.4244 1.4242	1.4242 1.4242	
ws1	ws-57263		1.4275 1.4275	1.5223 1.5222	
1	NG 19559-0030		1.4384 1.4384	1.4387 1.4386	
2	4D		1.4349 1.4350	1.4355 1.4353	
3	5D		1.4212 1.4212	1.4212 1.4218.2	
4	6D		1.4224 1.4224	1.4224 1.4224	
5	7D		1.4356 1.4356	1.4358 1.4358	
6	8D		1.4353 1.4353	1.4354 1.4353	
7	9D		1.4154 1.4154	1.4158 1.4156	
8	10D		1.4444 ~~1.4194~~ 1.4442	1.4442 1.4442	

Julia Ramit 5/17/2016

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/12/16 9	NA14559-011D	160	1.4231 1.4231	1.4234 1.4233	
10	12D		1.4481 1.4481	1.4481 1.4481	
bmp1	12DBMP		1.4136 1.4136	1.4137 1.4136	

Julia Ramit 5/17/2016

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
5/2/2016							
MB-57263	100	1.4242	1.4242	0.0000	1.00	0	MBLK
LCS-57263	100	1.4275	1.5222	947.0000	1.00	947	LCS
N019559-003D	100	1.4384	1.4386	2.0000	1.00	2	SAMP
N019559-004D	100	1.435	1.4353	3.0000	1.00	3	SAMP
N019559-005D	100	1.4212	1.4212	0.0000	1.00	0	SAMP
N019559-006D	100	1.4224	1.4224	0.0000	1.00	0	SAMP
N019559-007D	100	1.4356	1.4358	2.0000	1.00	2	SAMP
N019559-008D	100	1.4353	1.4353	0.0000	1.00	0	SAMP
N019559-009D	100	1.4154	1.4156	2.0000	1.00	2	SAMP
N019559-010D	100	1.4442	1.4442	0.0000	1.00	0	SAMP
N019559-011D	100	1.4231	1.4233	2.0000	1.00	2	SAMP
N019559-012D	100	1.4481	1.4481	0.0000	1.00	0	SAMP
N019559-012D-DUP	100	1.4136	1.4136	0.0000	1.00	0	DUP

Silvia Ramit 5/17/2016

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108290
ASSET #: N019559

Instrument ID: IC-06
Analyst: JAS
Date Analyzed: 5/5/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)		X				
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)	X					
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/11/2016

2nd Level Reviewer 5/16/2016 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

Cr^{+6}, μg/L = A * DF

where:

A = μg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N019559-003A** concentration in μg/L is calculated as follows:

Cr^{+6}, μg/L = 0.0596 * 1

= 0.0596

Since reporting limit is 0.2 mg/L,

Cr^{+6}, μg/L = ND

ANALYSIS RUN LOG

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 mL
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 mL
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 mL
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 mL
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 mL
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 mL
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 mL
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 mL
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 mL
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 mL
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 mL
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 mL
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 mL
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160505A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/05/16 9:06 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/05/16 9:18 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/05/16 9:28 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/05/16 9:38 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/05/16 9:48 AM	Reported
15	MB-R108290	MBLK	1	Hexavalent Chromium	05/05/16 9:58 AM	Reported
16	LCS-R108290	LCS	1	Hexavalent Chromium	05/05/16 10:08 AM	Reported
17	N019543-011A	SAMP	1	Hexavalent Chromium	05/05/16 10:18 AM	Reported
18	N019543-011AMS	MS	1	Hexavalent Chromium	05/05/16 10:28 AM	Reported
19	N019559-001A	SAMP	1	Hexavalent Chromium	05/05/16 10:38 AM	Reported
20	N019559-001ADUP	DUP	1	Hexavalent Chromium	05/05/16 10:48 AM	Reported
21	N019559-001AMS	MS	1	Hexavalent Chromium	05/05/16 10:58 AM	Reported
22	N019559-001AMSD	MSD	1	Hexavalent Chromium	05/05/16 11:08 AM	Reported
23	N019559-002A	SAMP	1	Hexavalent Chromium	05/05/16 11:17 AM	Reported
24	N019559-002AMS	MS	1	Hexavalent Chromium	05/05/16 11:27 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/05/16 11:37 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/05/16 11:47 AM	Reported
27	N019559-003A	SAMP	1	Hexavalent Chromium	05/05/16 11:59 AM	Reported
28	N019559-003AMS	MS	1	Hexavalent Chromium	05/05/16 12:11 PM	Not Reported
29	N019559-004A	SAMP	1	Hexavalent Chromium	05/05/16 12:21 PM	Reported
30	N019559-004AMS	MS	1	Hexavalent Chromium	05/05/16 12:31 PM	Reported
31	N019559-005A	SAMP	1	Hexavalent Chromium	05/05/16 12:41 PM	Reported
32	N019559-005AMS	MS	1	Hexavalent Chromium	05/05/16 12:51 PM	Reported
33	N019559-006A	SAMP	1	Hexavalent Chromium	05/05/16 1:01 PM	Reported
34	N019559-006AMS	MS	1	Hexavalent Chromium	05/05/16 1:11 PM	Reported
35	N019559-007A	SAMP	1	Hexavalent Chromium	05/05/16 1:21 PM	Reported
36	N019559-007AMS	MS	1	Hexavalent Chromium	05/05/16 1:31 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/05/16 1:41 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/05/16 1:51 PM	Reported
39	N019559-008A	SAMP	1	Hexavalent Chromium	05/05/16 2:01 PM	Reported
40	N019559-008AMS	MS	1	Hexavalent Chromium	05/05/16 2:11 PM	Reported
41	N019559-009A	SAMP	1	Hexavalent Chromium	05/05/16 2:21 PM	Reported
42	N019559-009AMS	MS	1	Hexavalent Chromium	05/05/16 2:31 PM	Reported
43	N019559-010A	SAMP	1	Hexavalent Chromium	05/05/16 2:41 PM	Reported
44	N019559-010AMS	MS	1	Hexavalent Chromium	05/05/16 2:51 PM	Not Reported
45	N019559-011A	SAMP	1	Hexavalent Chromium	05/05/16 3:01 PM	Reported
46	N019559-011AMS	MS	1	Hexavalent Chromium	05/05/16 3:11 PM	Reported
47	N019559-012A	SAMP	1	Hexavalent Chromium	05/05/16 3:21 PM	Reported
48	N019559-012AMS	MS	1	Hexavalent Chromium	05/05/16 3:31 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/05/16 3:41 PM	Reported

INJECTION LOG: 160505A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-4	CCB	1	Hexavalent Chromium	05/05/16 3:51 PM	Reported
51	N019559-013A	SAMP	1	Hexavalent Chromium	05/05/16 4:01 PM	Reported
52	N019559-013AMS	MS	1	Hexavalent Chromium	05/05/16 4:10 PM	Reported
53	N019559-014A	SAMP	1	Hexavalent Chromium	05/05/16 4:20 PM	Reported
54	N019559-014AMS	MS	1	Hexavalent Chromium	05/05/16 4:30 PM	Reported
55	N019559-003AMS	MS	1	Hexavalent Chromium	05/05/16 4:47 PM	Reported
56	N019559-010AMS	MS	1	Hexavalent Chromium	05/05/16 5:00 PM	Reported
57	CCV-5	CCV	1	Hexavalent Chromium	05/05/16 5:12 PM	Reported
58	CCB-5	CCB	1	Hexavalent Chromium	05/05/16 5:22 PM	Reported
59	MB-R108291	MBLK	1	Hexavalent Chromium	05/05/16 5:32 PM	Reported
60	LCS-R108291	LCS	1	Hexavalent Chromium	05/05/16 5:44 PM	Reported
61	N019560-001A	SAMP	1	Hexavalent Chromium	05/05/16 5:54 PM	Reported
62	N019560-001ADUP	DUP	1	Hexavalent Chromium	05/05/16 6:04 PM	Reported
63	N019560-001AMS	MS	1	Hexavalent Chromium	05/05/16 6:14 PM	Reported
64	N019560-001AMSD	MSD	1	Hexavalent Chromium	05/05/16 6:24 PM	Reported
65	N019560-002A	SAMP	1	Hexavalent Chromium	05/05/16 6:34 PM	Reported
66	N019560-002AMS	MS	1	Hexavalent Chromium	05/05/16 6:44 PM	Reported
67	N019560-003A	SAMP	1	Hexavalent Chromium	05/05/16 6:54 PM	Not Reported
68	N019560-003AMS	MS	1	Hexavalent Chromium	05/05/16 7:04 PM	Not Reported
69	CCV-6	CCV1	1	Hexavalent Chromium	05/05/16 7:14 PM	Reported
70	CCB-6	CCB	1	Hexavalent Chromium	05/05/16 7:24 PM	Reported
71	N019560-004A	SAMP	1	Hexavalent Chromium	05/05/16 7:34 PM	Not Reported
72	N019560-004AMS	MS	1	Hexavalent Chromium	05/05/16 7:44 PM	Not Reported
73	N019560-005A	SAMP	1	Hexavalent Chromium	05/05/16 7:54 PM	Not Reported
74	N019560-005AMS	MS	1	Hexavalent Chromium	05/05/16 8:04 PM	Not Reported
75	N019560-006A	SAMP	100	Hexavalent Chromium	05/05/16 8:14 PM	Reported
76	N019560-006AMS	MS	100	Hexavalent Chromium	05/05/16 8:24 PM	Reported
77	N019560-007A	SAMP	500	Hexavalent Chromium	05/05/16 8:34 PM	Reported
78	N019560-007AMS	MS	500	Hexavalent Chromium	05/05/16 8:44 PM	Reported
79	N019560-008A	SAMP	100	Hexavalent Chromium	05/05/16 8:54 PM	Reported
80	N019560-008AMS	MS	100	Hexavalent Chromium	05/05/16 9:04 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	05/05/16 9:13 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	05/05/16 9:23 PM	Reported
83	N019560-009A	SAMP	1	Hexavalent Chromium	05/05/16 9:33 PM	Not Reported
84	N019560-009AMS	MS	1	Hexavalent Chromium	05/05/16 9:43 PM	Not Reported
85	N019560-010A	SAMP	1	Hexavalent Chromium	05/05/16 9:53 PM	Not Reported
86	N019560-010AMS	MS	1	Hexavalent Chromium	05/05/16 10:03 PM	Not Reported
87	N019560-011A	SAMP	20	Hexavalent Chromium	05/05/16 10:13 PM	Reported
88	N019560-011AMS	MS	20	Hexavalent Chromium	05/05/16 10:23 PM	Reported
89	N019560-012A	SAMP	200	Hexavalent Chromium	05/05/16 10:33 PM	Reported
90	N019560-012AMS	MS	200	Hexavalent Chromium	05/05/16 10:43 PM	Reported
91	N019560-013	SAMP	1	Hexavalent Chromium	05/05/16 10:53 PM	Reported
92	N019560-013AMS	MS	1	Hexavalent Chromium	05/05/16 11:03 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	05/05/16 11:13 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	05/05/16 11:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160505A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**06/May/16 10:59:20**
No. of Injections:	**97**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/05/2016 09:06	Finished	CCV @ 5ppb, IWST-160401A
11	BLANK	2	1000	Unknown		05/05/2016 09:18	Finished	CCV @ 5ppb, IWST-160401A
12	CCV-1,CCV,1	3	1000	Unknown		05/05/2016 09:28	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/05/2016 09:38	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/05/2016 09:48	Finished	CCB R160501A
15	MB-H2O,MBLK,1	6	1000	Unknown		05/05/2016 09:58	Finished	MB R160426A
16	LCS-H2O,LCS,1	7	1000	Unknown		05/05/2016 10:08	Finished	LCS(5ppb), IWST-160401B
17	N019543-011A,SAMP,1	8	1000	Unknown		05/05/2016 10:18	Finished	SAMP, 10mL
18	N019543-011AMS,MS,1	9	1000	Unknown		05/05/2016 10:28	Finished	MS (1ppb), IWST-160401B, 10 mL
19	N019559-001A,SAMP,1	10	1000	Unknown		05/05/2016 10:38	Finished	SAMP, 10mL
20	N019559-001ADUP,DUP,1	11	1000	Unknown		05/05/2016 10:48	Finished	DUP, 10mL
21	N019559-001AMS,MS,1	12	1000	Unknown		05/05/2016 10:58	Finished	MS (1ppb), IWST-160401B, 10 mL
22	N019559-001AMSD,MSD,1	13	1000	Unknown		05/05/2016 11:08	Finished	MSD (1ppb), IWST-160401B, 10 r
23	N019559-002A,SAMP,1	14	1000	Unknown		05/05/2016 11:17	Finished	SAMP, 10mL
24	N019559-002AMS,MS,1	15	1000	Unknown		05/05/2016 11:27	Finished	MS (1ppb), IWST-160401B, 10 mL
25	CCV-2,CCV1,1	16	1000	Unknown		05/05/2016 11:37	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/05/2016 11:47	Finished	CCB R160426G
27	N019559-003A,SAMP,1	18	1000	Unknown		05/05/2016 11:59	Finished	SAMP, 10mL
28	N019559-003AMS,MS,1	19	1000	Unknown		05/05/2016 12:11	Finished	MS (1ppb), IWST-160401B, 10 mL
29	N019559-004A,SAMP,1	20	1000	Unknown		05/05/2016 12:21	Finished	SAMP, 10mL
30	N019559-004AMS,MS,1	21	1000	Unknown		05/05/2016 12:31	Finished	MS (1ppb), IWST-160401B, 10 mL
31	N019559-005A,SAMP,1	22	1000	Unknown		05/05/2016 12:41	Finished	SAMP, 10mL
32	N019559-005AMS,MS,1	23	1000	Unknown		05/05/2016 12:51	Finished	MS (1ppb), IWST-160401B, 10 mL
33	N019559-006A,SAMP,1	24	1000	Unknown		05/05/2016 13:01	Finished	SAMP, 10mL
34	N019559-006AMS,MS,1	25	1000	Unknown		05/05/2016 13:11	Finished	MS (1ppb), IWST-160401B, 10 mL
35	N019559-007A,SAMP,1	26	1000	Unknown		05/05/2016 13:21	Finished	SAMP, 10mL
36	N019559-007AMS,MS,1	27	1000	Unknown		05/05/2016 13:31	Finished	MS (1ppb), IWST-160401B, 10 mL
37	CCV-3,CCV,1	28	1000	Unknown		05/05/2016 13:41	Finished	CCV @ 5ppb, IWST-160401A
38	CCB-3,CCB,1	29	1000	Unknown		05/05/2016 13:51	Finished	CCB
39	N019559-008A,SAMP,1	30	1000	Unknown		05/05/2016 14:01	Finished	SAMP, 10mL
40	N019559-008AMS,MS,1	31	1000	Unknown		05/05/2016 14:11	Finished	MS (1ppb), IWST-160401B, 10 mL
41	N019559-009A,SAMP,1	32	1000	Unknown		05/05/2016 14:21	Finished	SAMP, 10mL
42	N019559-009AMS,MS,1	33	1000	Unknown		05/05/2016 14:31	Finished	MS (1ppb), IWST-160401B, 10 mL
43	N019559-010A,SAMP,1	34	1000	Unknown		05/05/2016 14:41	Finished	SAMP, 10mL
44	N019559-010AMS,MS,1	35	1000	Unknown		05/05/2016 14:51	Finished	MS (1ppb), IWST-160401B, 10 mL
45	N019559-011A,SAMP,1	36	1000	Unknown		05/05/2016 15:01	Finished	SAMP, 10mL
46	N019559-011AMS,MS,1	37	1000	Unknown		05/05/2016 15:11	Finished	MS (1ppb), IWST-160401B, 10 mL
47	N019559-012A,SAMP,1	38	1000	Unknown		05/05/2016 15:21	Finished	SAMP, 10mL
48	N019559-012AMS,MS,1	39	1000	Unknown		05/05/2016 15:31	Finished	MS (1ppb), IWST-160401B, 10 mL
49	CCV-4,CCV1,1	40	1000	Unknown		05/05/2016 15:41	Finished	CCV @ 10ppb, IWST-160401A
50	CCB-4,CCB,1	41	1000	Unknown		05/05/2016 15:51	Finished	CCB R160331B
51	N019559-013A,SAMP,1	42	1000	Unknown		05/05/2016 16:01	Finished	SAMP, 10mL
52	N019559-013AMS,MS,1	43	1000	Unknown		05/05/2016 16:10	Finished	MS (1ppb), IWST-160401B, 10 mL
53	N019559-014A,SAMP,1	44	1000	Unknown		05/05/2016 16:20	Finished	SAMP, 10mL
54	N019559-014AMS,MS,1	45	1000	Unknown		05/05/2016 16:30	Finished	MS (1ppb), IWST-160401B, 10 mL
55	N019559-003AMS,MS,1	46	1000	Unknown		05/05/2016 16:47	Finished	MS (1ppb), IWST-160401B, 10 mL
56	N019559-010AMS,MS,1	47	1000	Unknown		05/05/2016 17:00	Finished	MS (1ppb), IWST-160401B, 10 mL
57	CCV-5,CCV,1	48	1000	Unknown		05/05/2016 17:12	Finished	CCV @ 5ppb, IWST-160401A
58	CCB-5,CCB,1	49	1000	Unknown		05/05/2016 17:22	Finished	CCB
59	MB-H2O,MBLK,1	1	1000	Unknown		05/05/2016 17:32	Finished	MB R160426G
60	LCS-H2O,LCS,1	2	1000	Unknown		05/05/2016 17:44	Finished	LCS(5ppb), IWST-160401B
61	N019560-001A,SAMP,1	3	1000	Unknown		05/05/2016 17:54	Finished	SAMP, 10mL
62	N019560-001ADUP,DUP,1	4	1000	Unknown		05/05/2016 18:04	Finished	DUP, 10mL
63	N019560-001AMS,MS,1	5	1000	Unknown		05/05/2016 18:14	Finished	MS (1ppb), IWST-160401B, 10 mL
64	N019560-001AMSD,MSD,1	6	1000	Unknown		05/05/2016 18:24	Finished	MSD (1ppb), IWST-160401B, 10 r
65	N019560-002A,SAMP,1	7	1000	Unknown		05/05/2016 18:34	Finished	SAMP, 10mL
66	N019560-002AMS,MS,1	8	1000	Unknown		05/05/2016 18:44	Finished	MS (1ppb), IWST-160401B, 10 mL
67	N019560-003A,SAMP,1	9	1000	Unknown		05/05/2016 18:54	Finished	SAMP, 10mL
68	N019560-003AMS,MS,1	10	1000	Unknown		05/05/2016 19:04	Finished	MS (1ppb), IWST-160401B, 10 mL
69	CCV-6,CCV1,1	11	1000	Unknown		05/05/2016 19:14	Finished	CCV @ 10ppb, IWST-160401A
70	CCB-6,CCB,1	12	1000	Unknown		05/05/2016 19:24	Finished	CCB

71	N019560-004A,SAMP,1	13	1000	Unknown		05/05/2016 19:34	Finished	SAMP, 10mL
72	N019560-004AMS,MS,1	14	1000	Unknown		05/05/2016 19:44	Finished	MS (1ppb), IWST-160401B, 10 mL
73	N019560-005A,SAMP,1	15	1000	Unknown		05/05/2016 19:54	Finished	SAMP, 10mL
74	N019560-005AMS,MS,1	16	1000	Unknown		05/05/2016 20:04	Finished	MS (1ppb), IWST-160401B, 10 mL
75	N019560-006A,SAMP,100	17	1000	Unknown		05/05/2016 20:14	Finished	SAMP, 0.10>10mL
76	N019560-006AMS,MS,100	18	1000	Unknown		05/05/2016 20:24	Finished	MS (5ppb), IWST-160401B, 0.10>
77	N019560-007A,SAMP,500	19	1000	Unknown		05/05/2016 20:34	Finished	SAMP, 20uL>10mL
78	N019560-007AMS,MS,500	20	1000	Unknown		05/05/2016 20:44	Finished	MS (5ppb), IWST-160401B, 20uL>
79	N019560-008A,SAMP,100	21	1000	Unknown		05/05/2016 20:54	Finished	SAMP, 0.10>10mL
80	N019560-008AMS,MS,100	22	1000	Unknown		05/05/2016 21:04	Finished	MS (5ppb), IWST-160401B, 0.10>
81	CCV-7,CCV,1	23	1000	Unknown		05/05/2016 21:13	Finished	CCV @ 5ppb, IWST-160401A
82	CCB-7,CCB,1	24	1000	Unknown		05/05/2016 21:23	Finished	CCB
83	N019560-009A,SAMP,1	25	1000	Unknown		05/05/2016 21:33	Finished	SAMP, 10mL
84	N019560-009AMS,MS,1	26	1000	Unknown		05/05/2016 21:43	Finished	MS (5ppb), IWST-160401B, 10 mL
85	N019560-010A,SAMP,1	27	1000	Unknown		05/05/2016 21:53	Finished	SAMP, 10mL
86	N019560-010AMS,MS,1	28	1000	Unknown		05/05/2016 22:03	Finished	MS (5ppb), IWST-160401B, 10 mL
87	N019560-011A,SAMP,20	29	1000	Unknown		05/05/2016 22:13	Finished	SAMP, 0.5> 10mL
88	N019560-011AMS,MS,20	30	1000	Unknown		05/05/2016 22:23	Finished	MS (5ppb), IWST-160401B, 0.5>1
89	N019560-012A,SAMP,200	31	1000	Unknown		05/05/2016 22:33	Finished	SAMP, 50uL>10mL
90	N019560-012AMS,MS,200	32	1000	Unknown		05/05/2016 22:43	Finished	MS (5ppb), IWST-160401B, 50uL>
91	N019560-013,SAMP,1	33	1000	Unknown		05/05/2016 22:53	Finished	SAMP, 10mL
92	N019560-013AMS,MS,1	34	1000	Unknown		05/05/2016 23:03	Finished	MS (1ppb), IWST-160401B, 10 mL
93	CCV-8-CCV1,1	35	1000	Unknown		05/05/2016 23:13	Finished	CCV @ 10ppb, IWST-160401A
94	CCB-8-CCB,1	36	1000	Unknown		05/05/2016 23:23	Finished	CCB
95	SHUTDOWN	37	1000	Unknown		05/05/2016 23:33	Finished	
96	Eluent: R160503A	38	1000	Unknown		n.a.	Finished	Eluent
97	PCR: R160504A	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/29/14
Time Prepared: 4:06 pm
Prepared By: JM

Slope: 98.9
pH 7: 7.03 @24.7
4: 4.01 @24.4
10: 10.03 @24.7
VCS: 7.05

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: UNV-160125H
NH4OH + NH4SO4 eluent: R160503A, R160503B
NH4OH + NH4SO4 buffer: R160331B, R160426A, R160426G

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N0194559-01A (1of3)	9.32	-	-	-	-	R160426G
2)	-1A (2of3)	9.35	-	-	-	-	R160426A
3)	-1A (3of3)	9.40	-	-	-	-	R160426G
4)	-2A (1of3)	9.40	-	-	-	-	R160426G
5)	-2A (2of3)	9.41	-	-	-	-	R160426A
6)	-2A (3of3)	9.39	-	-	-	-	R160426G
7)	-3A (1of3)	9.41	-	-	-	-	↓
8)	-3A (2of3)	9.42	-	-	-	-	↓
9)	-3A (3of3)	9.44	-	-	-	-	R160426A
10)	-4A (1of3)	9.41	-	-	-	-	R160426G
11)	-4A (2of3)	9.41	-	-	-	-	↓
12)	-4A (3of3)	9.44	-	-	-	-	R160331B
13)	-5A (1of3)	9.42	-	-	-	-	R160331B
14)	-5A (2of3)	9.40	-	-	-	-	↓
15)	-5A (3of3)	9.38	-	-	-	-	R160426G
	-6A (1of3)	9.36	-	-	-	-	
	-6A (2of3)	9.37	-	-	-	-	

Sample Preparation

Date Prepared: 4/29/14
Time Prepared: 4:00 pm
Prepared By: JM

Same calibration

VCS: 7.04

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: UNV-160125H
NH4OH + NH4SO4 eluent: R160503A
NH4OH + NH4SO4 buffer: R160331B, R160426A, R160426G

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N0194559-6A (3of3)	9.40	-	-	-	-	R160426A
2)	-7A (1of3)	9.35	-	-	-	-	R160331B
3)	-7A (2of3)	9.35	-	-	-	-	R160426G
4)	-7A (3of3)	9.31	-	-	-	-	R160931B
5)	-8A (1of3)	9.44	-	-	-	-	R160426G
6)	-8A (2of3)	9.36	-	-	-	-	R160331B
7)	-8A (3of3)	9.34	-	-	-	-	↓
8)	-9A (1of3)	9.36	-	-	-	-	R160426G
9)	-9A (2of3)	9.36	-	-	-	-	R160331B
10)	-9A (3of3)	9.32	-	-	-	-	R160426A
11)	-10A (1of3)	9.36	-	-	-	-	R160426A
12)	-10A (2of3)	9.37	-	-	-	-	R160426G
13)	-10A (3of3)	9.36	-	-	-	-	R160426A
14)	-11A (1of3)	9.35	-	-	-	-	R160426G
15)	-11A (2of3)	9.32	-	-	-	-	↓
	-11A (3of3)	9.36	-	-	-	-	R160426A

Logbook No. 10

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/29/16
Time Prepared: 4:00 PM
Prepared By: UAS

Slope: 98.9
pH 7: 7.03
4: 4.01
10: 10.03
LCS: 7.05

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINU-160125H
NH4OH + NH4SO4 eluent: R160503A, R160505A
NH4OH + NH4SO4 buffer: R160331B, R160426A, R160426G

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019559-12A (1 of 3)	9.37	-	-	-	-	R160426G
2)	-12A (2 of 3)	9.38	-	-	-	-	R160426A
3)	-12A (3 of 3)	9.40	-	-	-	-	↓
4)	-13A (1 of 3)	9.32	-	-	-	-	-
5)	-13A (2 of 3)	9.37	-	-	-	-	R160426G
6)	-13A (3 of 3)	9.33	-	-	-	-	↓
7)	-14A (1 of 3)	9.32	-	-	-	-	R160331B
8)	-14A (2 of 3)	9.33	-	-	-	-	↓
9)	-14A (3 of 3)	9.34	-	-	-	-	↓
10)	N019560-1A	9.44	-	-	-	-	R160426G
11)	-2A	9.38	-	-	-	-	↓
12)	-3A	9.05	9.31	~250 mL	~250 mL	+4 drops 6N NaOH	R160426A
13)	-4A	9.44	-	-	-	-	R160426G
14)	-5A	9.05	9.34	~250 mL	~250 mL	+5 drops 6N NaOH	R160331B
15)	-6A	9.34	-	-	-	-	R160426G
	-7A	9.30	-	-	-	-	↓ ; light green

Sample Preparation

Date Prepared: 4/29/16
Time Prepared: 4:00 PM
Prepared By: JAS

same

LCS: 7.06

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINU-160125H
NH4OH + NH4SO4 eluent: R160505A, R160503A
NH4OH + NH4SO4 buffer: R160331B, R160426A, R160426G

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019560-8A	9.27	9.33	~250 mL	~250 mL	+1 drop 6N NaOH	R160426G
2)	-9A	9.41	-	-	-	-	↓
3)	-10A	9.36	-	-	-	-	↓
4)	-11A	9.26	9.34	~250 mL	~250 mL	+1 drop 6N NaOH	R160331B
5)	-12A	9.32	-	-	-	-	R160426G
6)	-13A	9.44	-	-	-	-	↓
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 10

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-06
Date Calibrated: 5/2/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0499	0.2341	1.1728	2.3399	3.5237	4.6638	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ICV**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2317484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.008	0.20	5.000	0	100	90	110				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2317485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.213	0.20	0.2000	0	107	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCV**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.059	0.20	5.000	0	101	95	105				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.209	0.20	0.2000	0	104	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.753	0.20	10.00	0	97.5	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCV**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.970	0.20	5.000	0	99.4	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ZZZZZZ**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.087	0.20	10.00	0	101	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCV**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.937	0.20	5.000	0	98.7	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **ICB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2317486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108290**
Client ID: **CCB**	Batch ID: **R108290**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/5/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.100	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
MB-R108290	N.A.	N.A.
LCS-R108290	5.100	PASS
N019543-011A	5.092	PASS
N019543-011AMS	5.100	PASS
N019559-001A	5.125	PASS
N019559-001ADUP	5.108	PASS
N019559-001AMS	5.100	PASS
N019559-001AMSD	5.100	PASS
N019559-002A	5.092	PASS
N019559-002AMS	5.100	PASS
N019559-003A	5.108	PASS
N019559-003AMS	5.100	PASS
N019559-004A	5.108	PASS
N019559-004AMS	5.100	PASS
N019559-005A	5.100	PASS
N019559-005AMS	5.100	PASS
N019559-006A	5.108	PASS
N019559-006AMS	5.100	PASS
N019559-007A	5.100	PASS
N019559-007AMS	5.092	PASS
N019559-008A	5.108	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/5/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.100	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019559-008AMS	5.100	PASS
N019559-009A	5.100	PASS
N019559-009AMS	5.100	PASS
N019559-010A	5.092	PASS
N019559-010AMS	5.092	PASS
N019559-011A	5.100	PASS
N019559-011AMS	5.100	PASS
N019559-012A	5.092	PASS
N019559-012AMS	5.100	PASS
N019559-013A	5.108	PASS
N019559-013AMS	5.092	PASS
N019559-014A	5.117	PASS
N019559-014AMS	5.108	PASS
N019559-003AMS	5.100	PASS
N019559-010AMS	5.108	PASS
MB-R108291	N.A.	N.A.
LCS-R108291	5.100	PASS
N019560-001A	5.083	PASS
N019560-001ADUP	5.192	PASS
N019560-001AMS	5.108	PASS
N019560-001AMSD	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/5/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.100	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019560-002A	4.942	PASS
N019560-002AMS	4.942	PASS
N019560-003A	4.983	PASS
N019560-003AMS	4.983	PASS
N019560-004A	N.A.	N.A.
N019560-004AMS	N.A.	N.A.
N019560-005A	4.983	PASS
N019560-005AMS	4.983	PASS
N019560-006A	5.100	PASS
N019560-006AMS	5.108	PASS
N019560-007A	5.108	PASS
N019560-007AMS	5.108	PASS
N019560-008A	5.108	PASS
N019560-008AMS	5.108	PASS
N019560-009A	N.A.	N.A.
N019560-009AMS	N.A.	N.A.
N019560-010A	4.950	PASS
N019560-010AMS	4.958	PASS
N019560-011A	5.108	PASS
N019560-011AMS	5.108	PASS
N019560-012A	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/5/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.100	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
CCV-7	5.108	
CCV-8	5.108	
Average	5.107	
Actual RT Window	5.027 - 5.187	
Applied RT Window	4.907 - 5.307	
N019560-012AMS	5.100	PASS
N019560-013	5.117	PASS
N019560-013AMS	5.108	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 ml
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 ml
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 ml
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 ml
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 ml
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 ml
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 ml
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 ml
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 ml
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 ml
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 ml
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 ml
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 ml
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

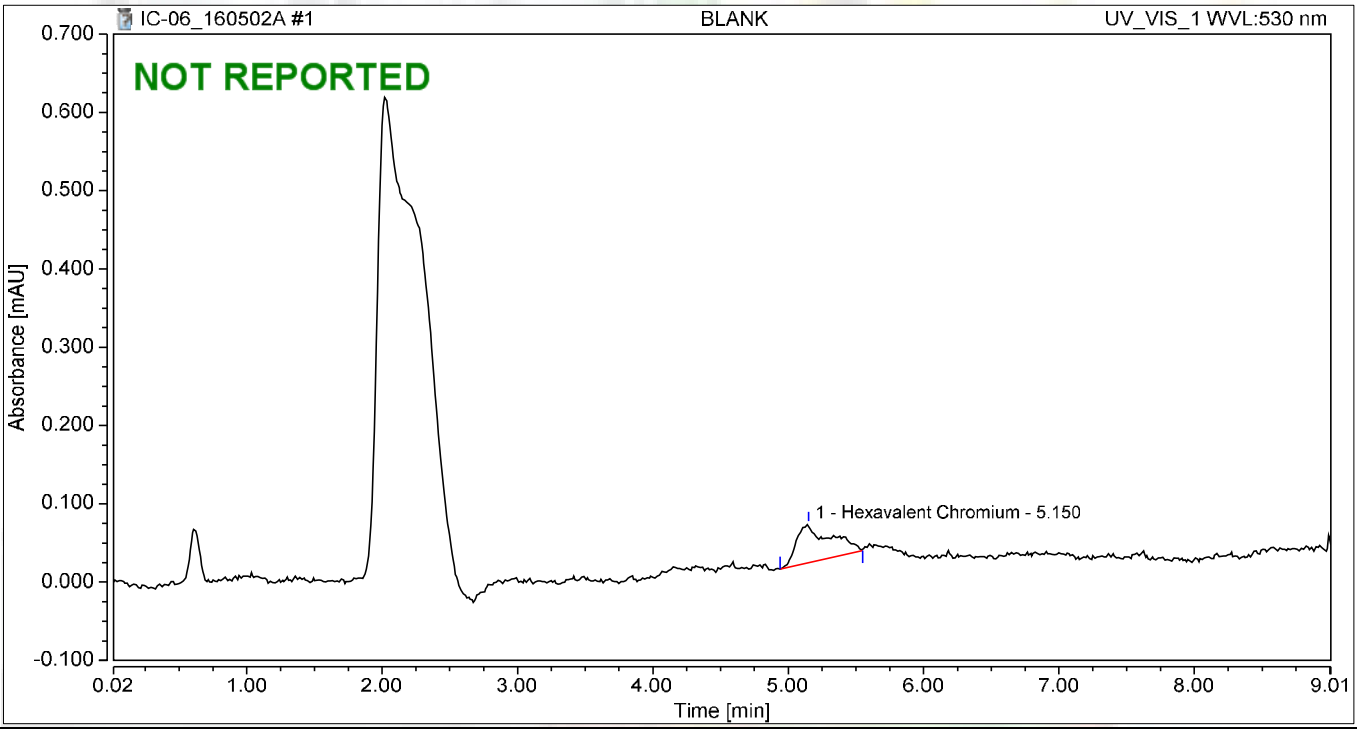
71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

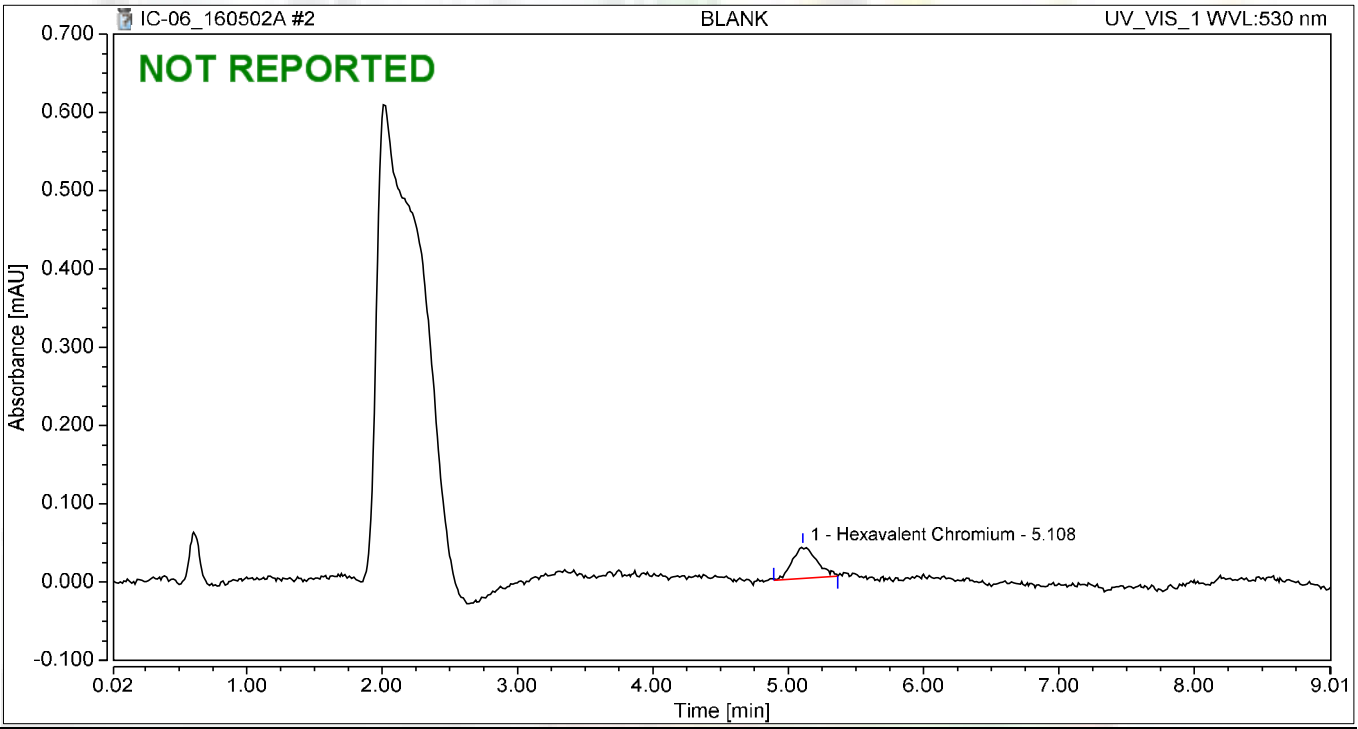
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.014	0.049	100.00	100.00	0.0418
Total:			**0.014**	**0.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

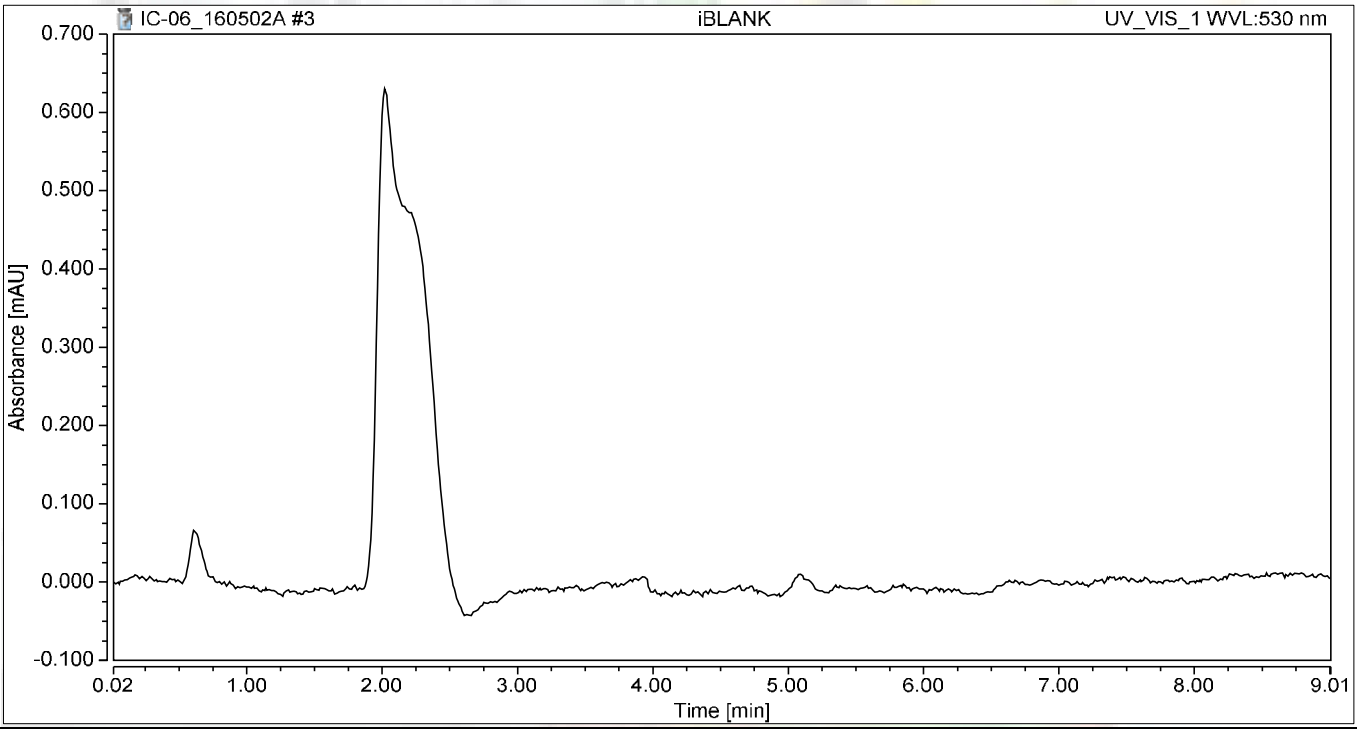
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.008	0.041	100.00	100.00	0.0183
Total:			**0.008**	**0.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

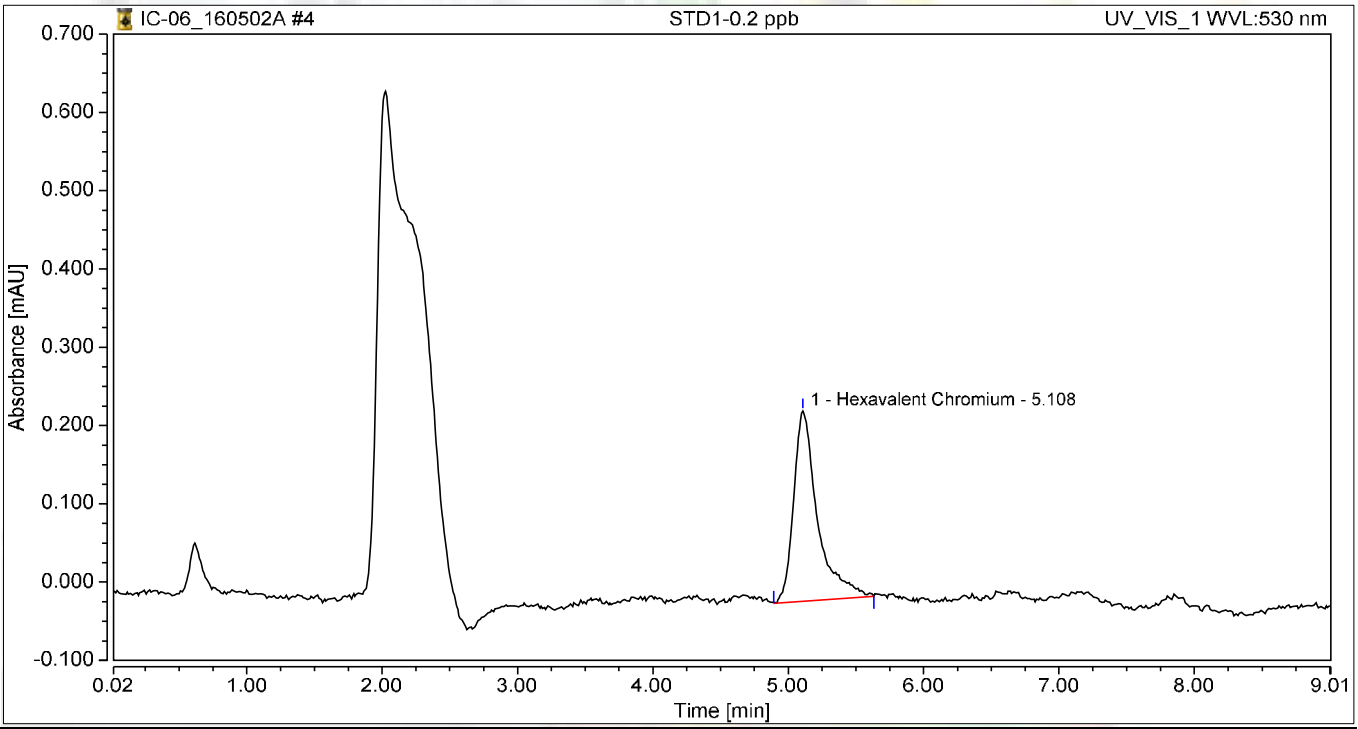
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

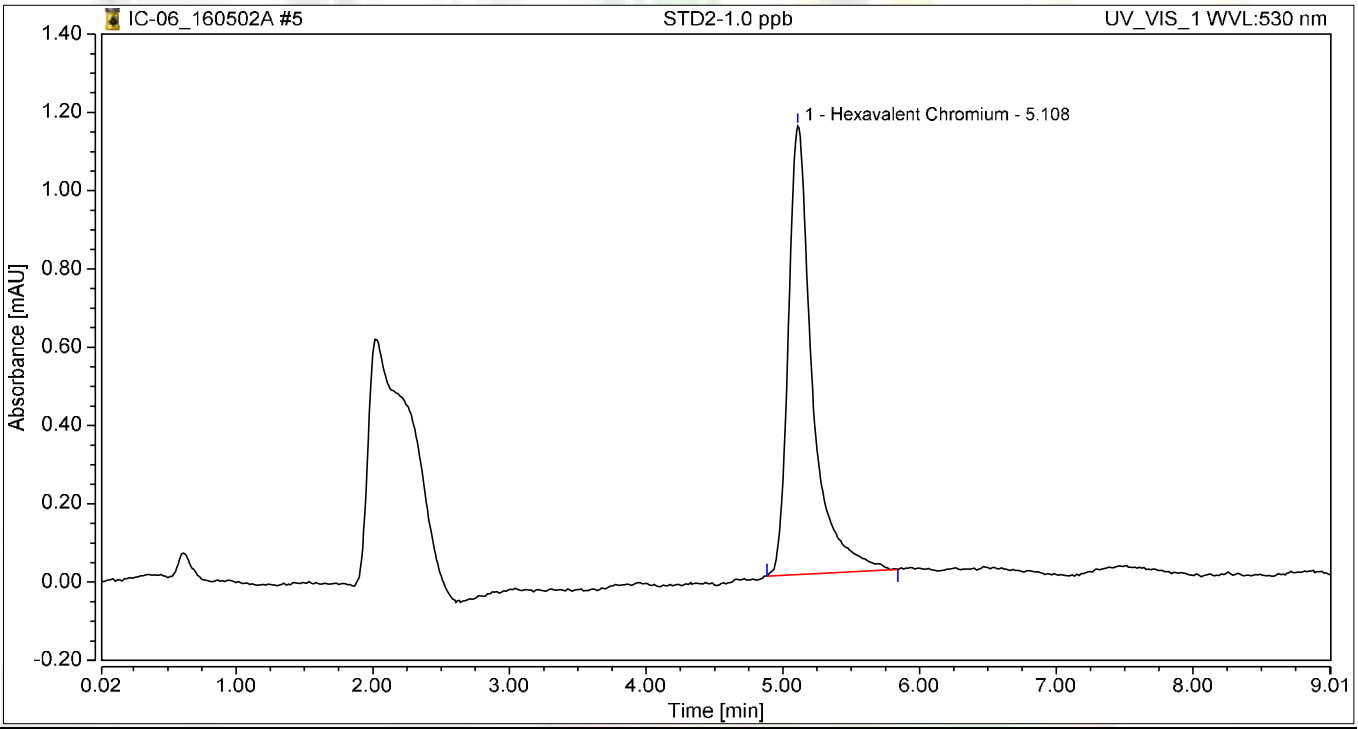
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.050	0.243	100.00	100.00	0.1956
Total:			**0.050**	**0.243**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

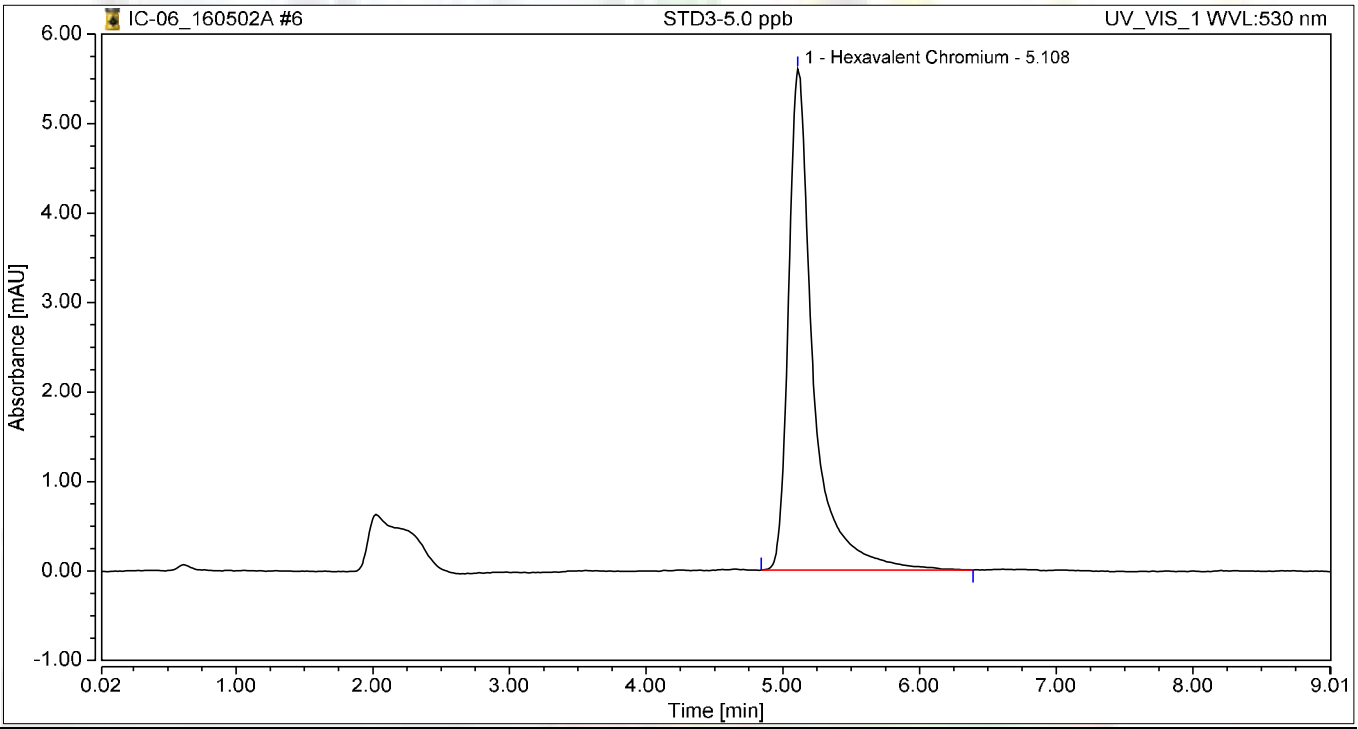
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.234	1.147	100.00	100.00	0.9843
Total:			**0.234**	**1.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

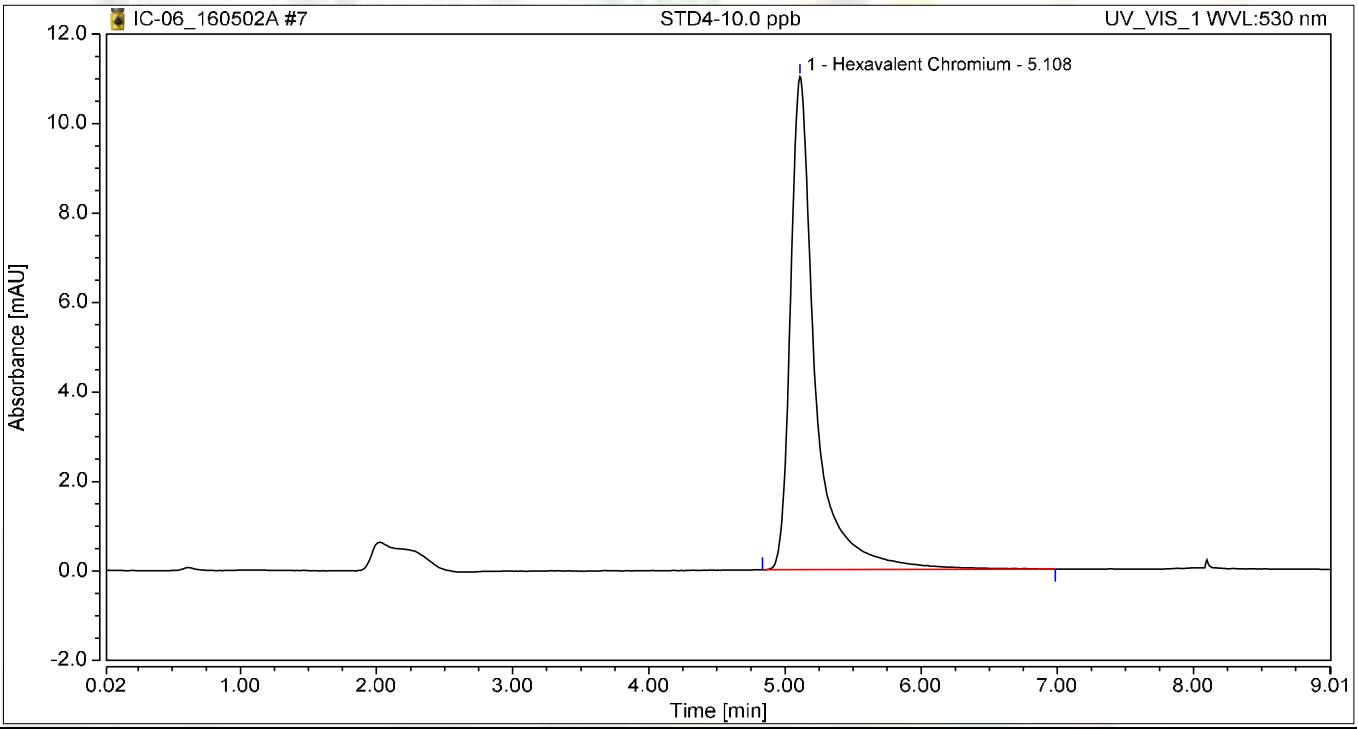
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.173	5.600	100.00	100.00	5.0033
Total:			**1.173**	**5.600**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

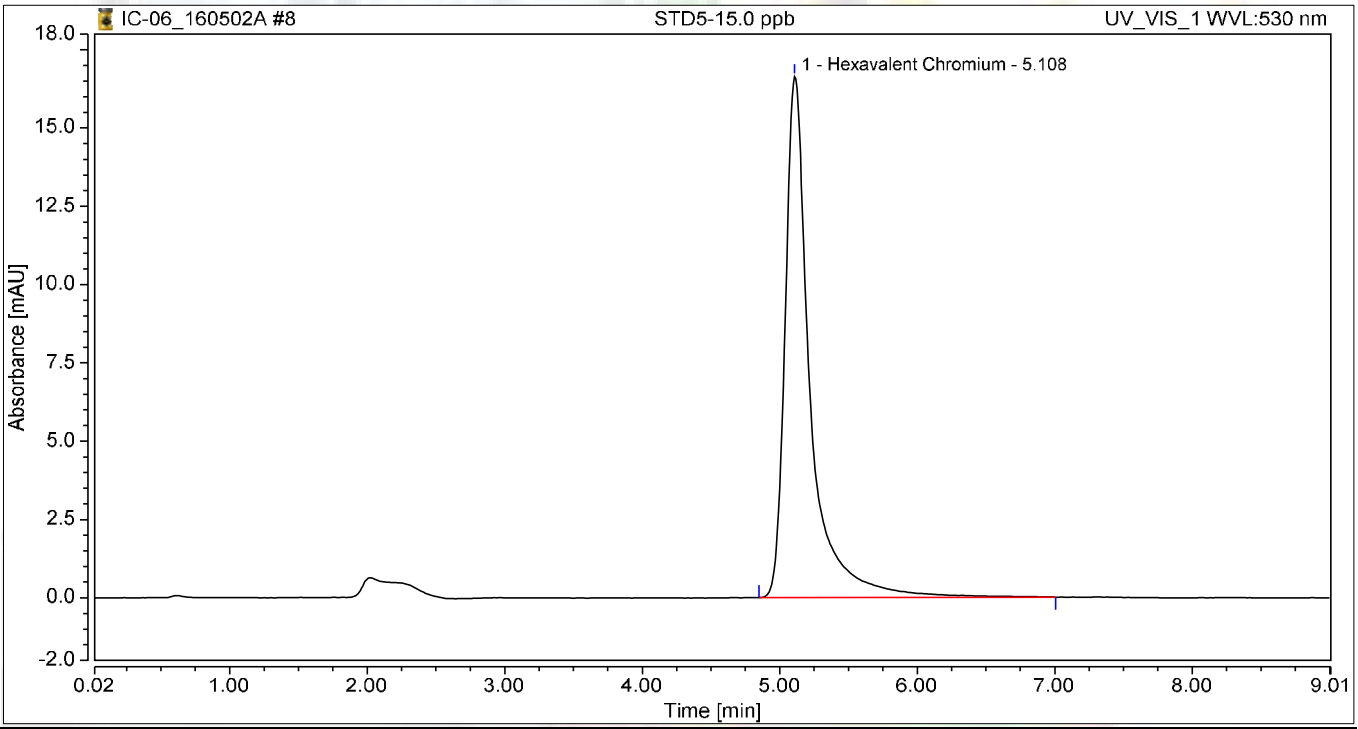
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.340	11.026	100.00	100.00	9.9997
Total:			**2.340**	**11.026**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

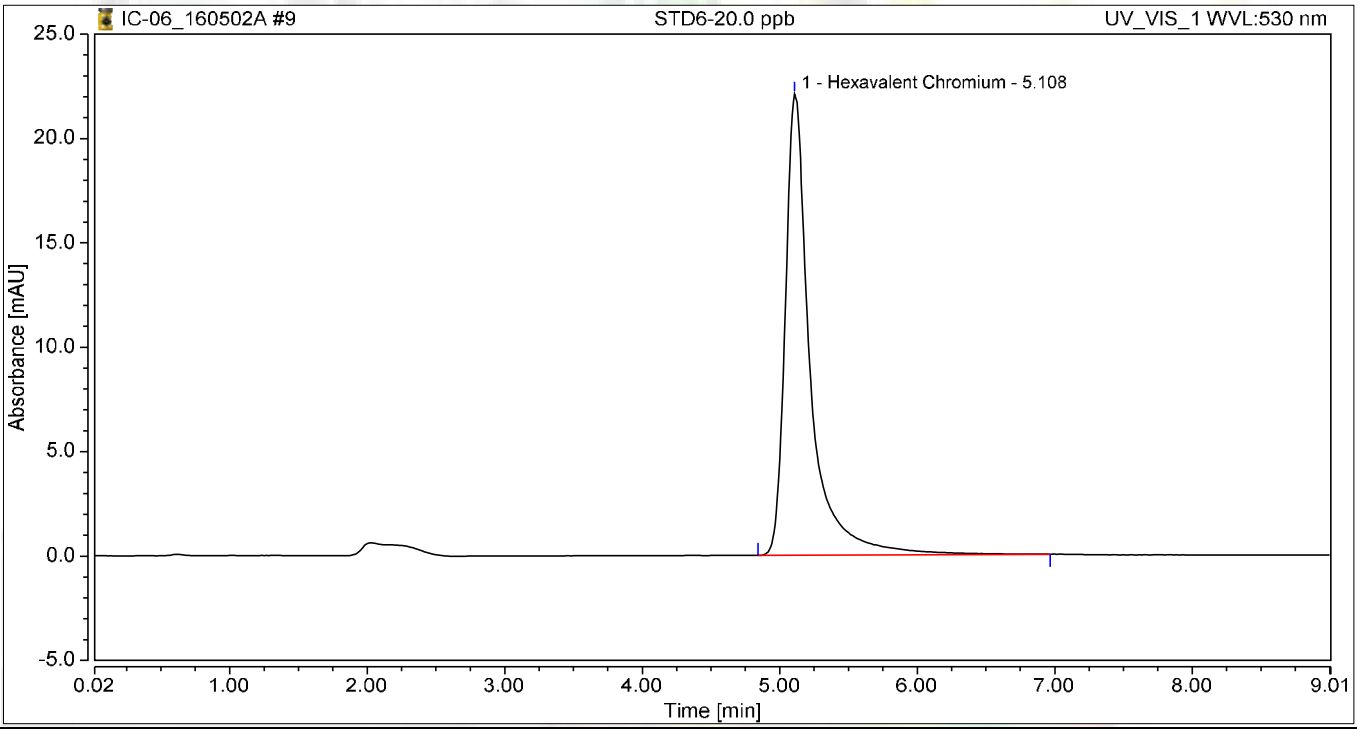
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	3.524	16.642	100.00	100.00	15.0679
Total:			**3.524**	**16.642**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**07**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



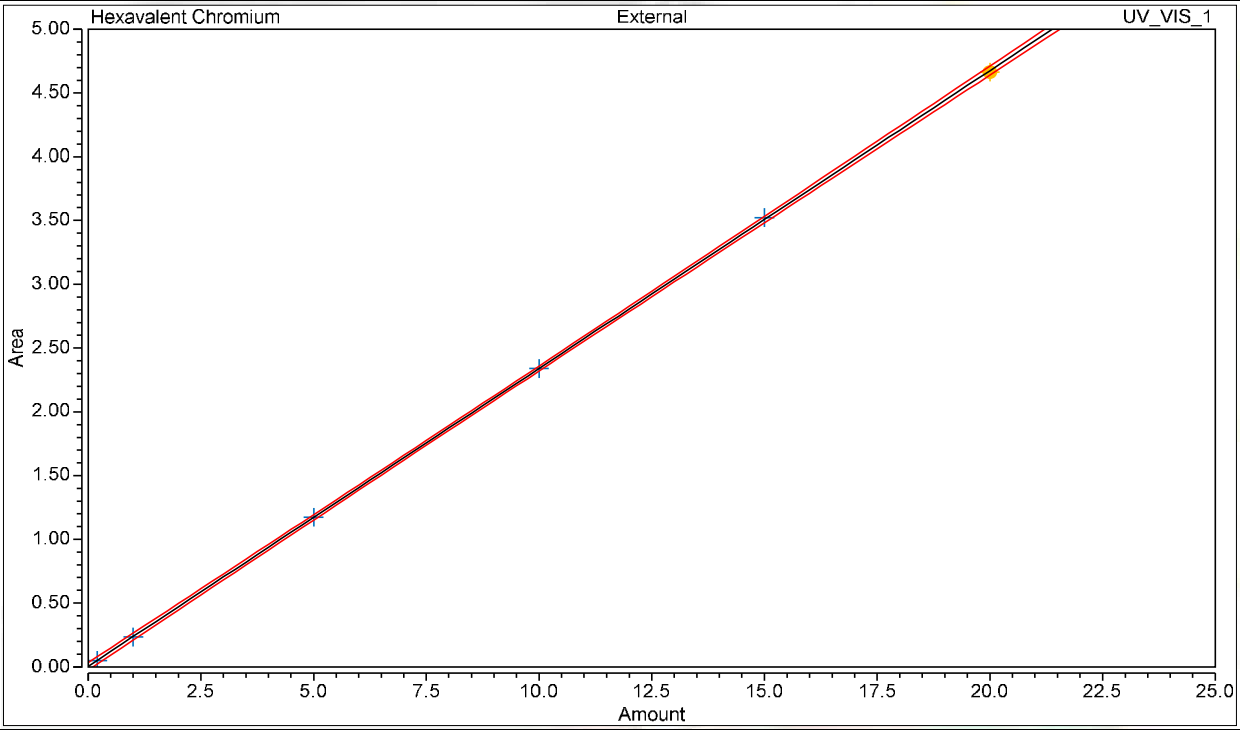
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	4.664	22.077	100.00	100.00	19.9492
Total:			**4.664**	**22.077**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin, WithOffset	*Offset (C0)*	0.0042
Evaluation Type	Area	*Slope (C1)*	0.2336
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

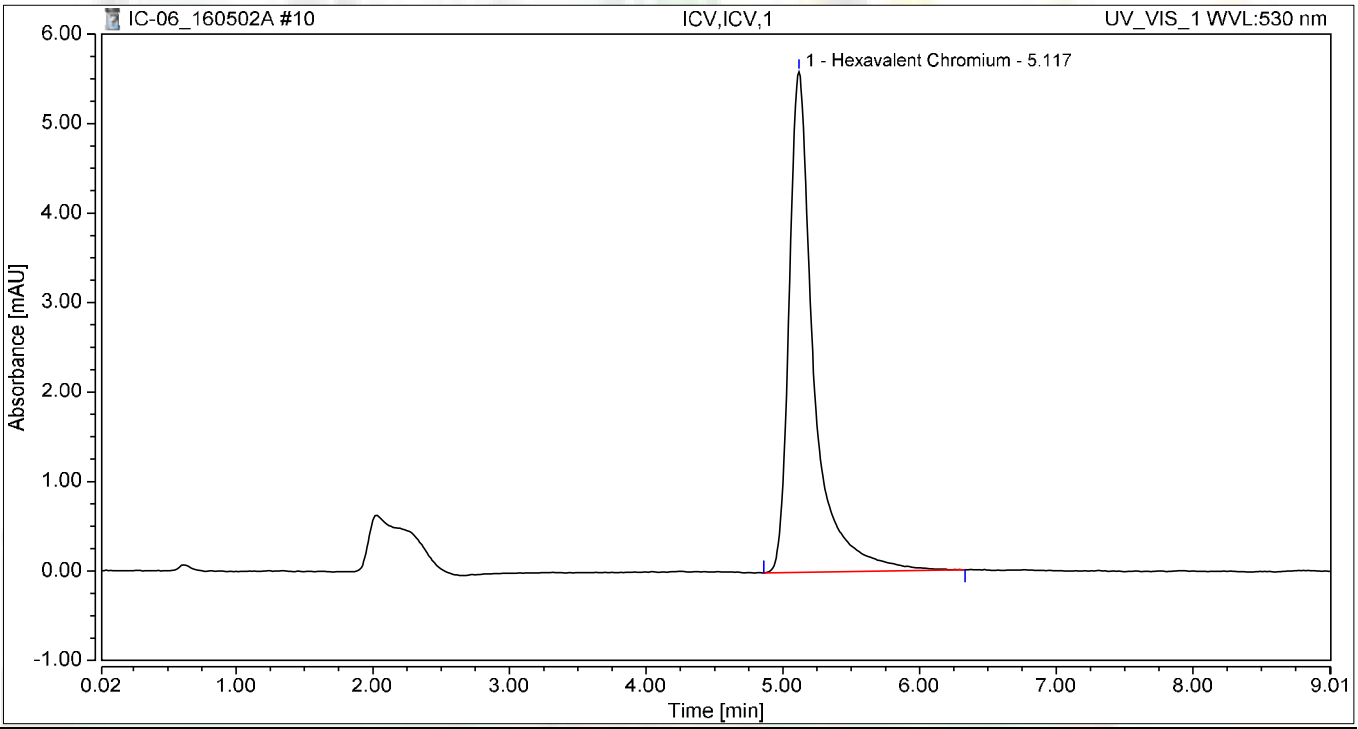
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	02	0.2000	0.0499	0.050	0.243
5	STD2-1.0 ppb	03	1.0000	0.2341	0.234	1.147
6	STD3-5.0 ppb	04	5.0000	1.1728	1.173	5.600
7	STD4-10.0 ppb	05	10.0000	2.3399	2.340	11.026
8	STD5-15.0 ppb	06	15.0000	3.5237	3.524	16.642
9	STD6-20.0 ppb	07	20.0000	4.6638	4.664	22.077

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

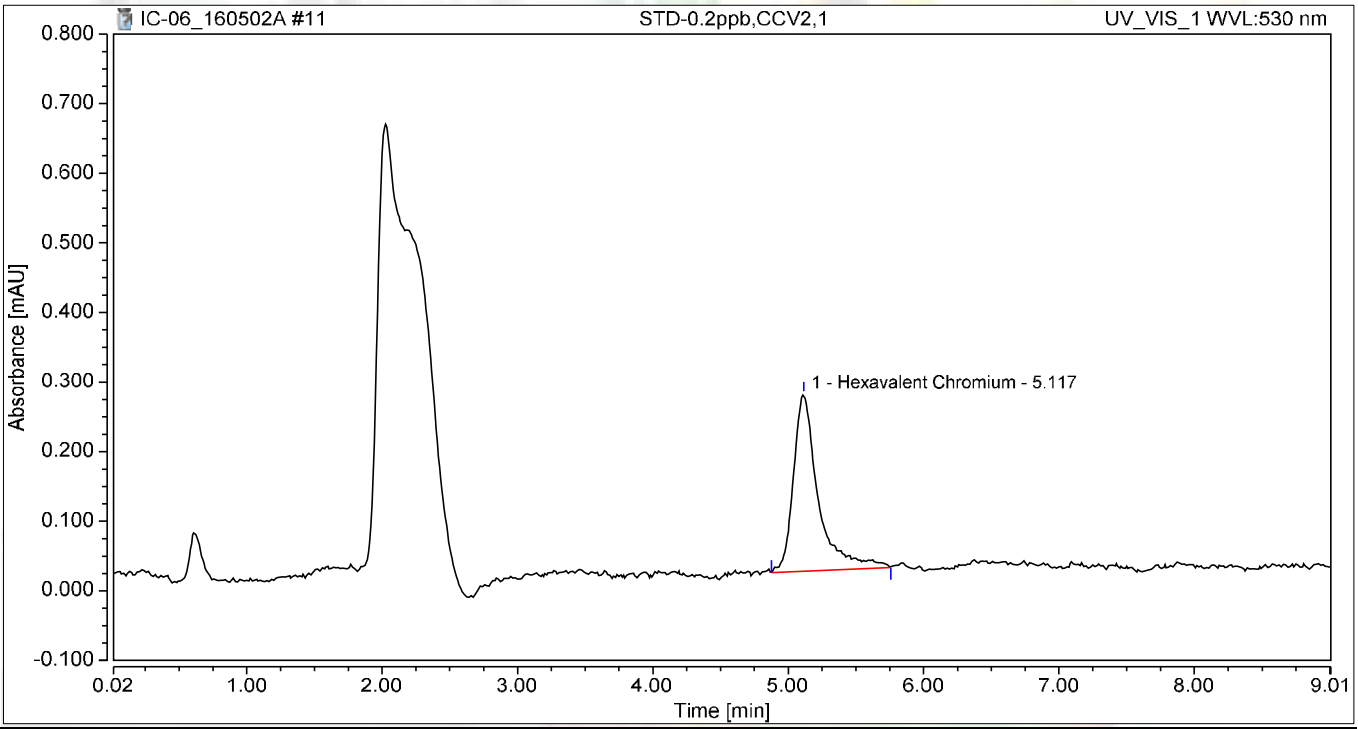
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	1.174	5.596	100.00	100.00	5.0075
Total:			**1.174**	**5.596**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

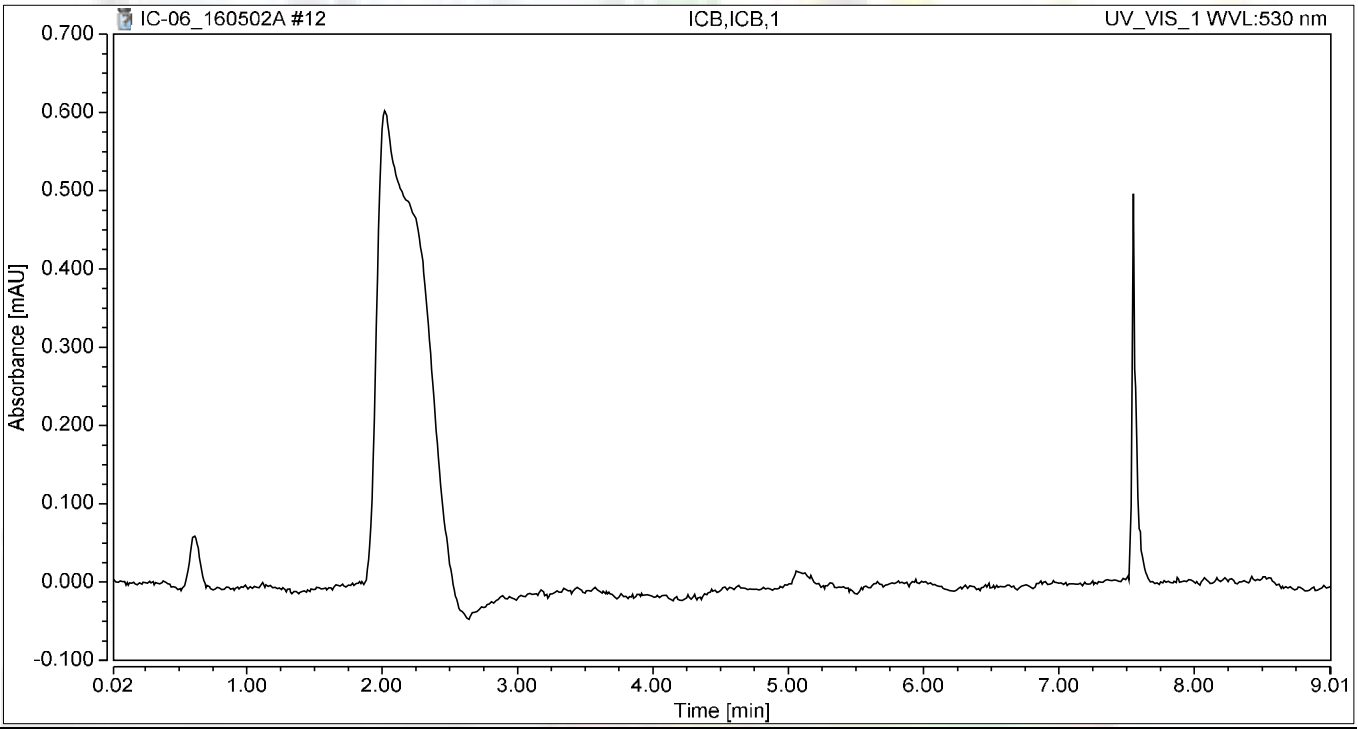
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.054	0.254	100.00	100.00	0.2134
Total:			**0.054**	**0.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160505A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/05/16 9:06 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/05/16 9:18 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/05/16 9:28 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/05/16 9:38 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/05/16 9:48 AM	Reported
15	MB-R108290	MBLK	1	Hexavalent Chromium	05/05/16 9:58 AM	Reported
16	LCS-R108290	LCS	1	Hexavalent Chromium	05/05/16 10:08 AM	Reported
17	N019543-011A	SAMP	1	Hexavalent Chromium	05/05/16 10:18 AM	Reported
18	N019543-011AMS	MS	1	Hexavalent Chromium	05/05/16 10:28 AM	Reported
19	N019559-001A	SAMP	1	Hexavalent Chromium	05/05/16 10:38 AM	Reported
20	N019559-001ADUP	DUP	1	Hexavalent Chromium	05/05/16 10:48 AM	Reported
21	N019559-001AMS	MS	1	Hexavalent Chromium	05/05/16 10:58 AM	Reported
22	N019559-001AMSD	MSD	1	Hexavalent Chromium	05/05/16 11:08 AM	Reported
23	N019559-002A	SAMP	1	Hexavalent Chromium	05/05/16 11:17 AM	Reported
24	N019559-002AMS	MS	1	Hexavalent Chromium	05/05/16 11:27 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/05/16 11:37 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/05/16 11:47 AM	Reported
27	N019559-003A	SAMP	1	Hexavalent Chromium	05/05/16 11:59 AM	Reported
28	N019559-003AMS	MS	1	Hexavalent Chromium	05/05/16 12:11 PM	Not Reported
29	N019559-004A	SAMP	1	Hexavalent Chromium	05/05/16 12:21 PM	Reported
30	N019559-004AMS	MS	1	Hexavalent Chromium	05/05/16 12:31 PM	Reported
31	N019559-005A	SAMP	1	Hexavalent Chromium	05/05/16 12:41 PM	Reported
32	N019559-005AMS	MS	1	Hexavalent Chromium	05/05/16 12:51 PM	Reported
33	N019559-006A	SAMP	1	Hexavalent Chromium	05/05/16 1:01 PM	Reported
34	N019559-006AMS	MS	1	Hexavalent Chromium	05/05/16 1:11 PM	Reported
35	N019559-007A	SAMP	1	Hexavalent Chromium	05/05/16 1:21 PM	Reported
36	N019559-007AMS	MS	1	Hexavalent Chromium	05/05/16 1:31 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/05/16 1:41 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/05/16 1:51 PM	Reported
39	N019559-008A	SAMP	1	Hexavalent Chromium	05/05/16 2:01 PM	Reported
40	N019559-008AMS	MS	1	Hexavalent Chromium	05/05/16 2:11 PM	Reported
41	N019559-009A	SAMP	1	Hexavalent Chromium	05/05/16 2:21 PM	Reported
42	N019559-009AMS	MS	1	Hexavalent Chromium	05/05/16 2:31 PM	Reported
43	N019559-010A	SAMP	1	Hexavalent Chromium	05/05/16 2:41 PM	Reported
44	N019559-010AMS	MS	1	Hexavalent Chromium	05/05/16 2:51 PM	Not Reported
45	N019559-011A	SAMP	1	Hexavalent Chromium	05/05/16 3:01 PM	Reported
46	N019559-011AMS	MS	1	Hexavalent Chromium	05/05/16 3:11 PM	Reported
47	N019559-012A	SAMP	1	Hexavalent Chromium	05/05/16 3:21 PM	Reported
48	N019559-012AMS	MS	1	Hexavalent Chromium	05/05/16 3:31 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/05/16 3:41 PM	Reported

INJECTION LOG: 160505A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-4	CCB	1	Hexavalent Chromium	05/05/16 3:51 PM	Reported
51	N019559-013A	SAMP	1	Hexavalent Chromium	05/05/16 4:01 PM	Reported
52	N019559-013AMS	MS	1	Hexavalent Chromium	05/05/16 4:10 PM	Reported
53	N019559-014A	SAMP	1	Hexavalent Chromium	05/05/16 4:20 PM	Reported
54	N019559-014AMS	MS	1	Hexavalent Chromium	05/05/16 4:30 PM	Reported
55	N019559-003AMS	MS	1	Hexavalent Chromium	05/05/16 4:47 PM	Reported
56	N019559-010AMS	MS	1	Hexavalent Chromium	05/05/16 5:00 PM	Reported
57	CCV-5	CCV	1	Hexavalent Chromium	05/05/16 5:12 PM	Reported
58	CCB-5	CCB	1	Hexavalent Chromium	05/05/16 5:22 PM	Reported
59	MB-R108291	MBLK	1	Hexavalent Chromium	05/05/16 5:32 PM	Reported
60	LCS-R108291	LCS	1	Hexavalent Chromium	05/05/16 5:44 PM	Reported
61	N019560-001A	SAMP	1	Hexavalent Chromium	05/05/16 5:54 PM	Reported
62	N019560-001ADUP	DUP	1	Hexavalent Chromium	05/05/16 6:04 PM	Reported
63	N019560-001AMS	MS	1	Hexavalent Chromium	05/05/16 6:14 PM	Reported
64	N019560-001AMSD	MSD	1	Hexavalent Chromium	05/05/16 6:24 PM	Reported
65	N019560-002A	SAMP	1	Hexavalent Chromium	05/05/16 6:34 PM	Reported
66	N019560-002AMS	MS	1	Hexavalent Chromium	05/05/16 6:44 PM	Reported
67	N019560-003A	SAMP	1	Hexavalent Chromium	05/05/16 6:54 PM	Not Reported
68	N019560-003AMS	MS	1	Hexavalent Chromium	05/05/16 7:04 PM	Not Reported
69	CCV-6	CCV1	1	Hexavalent Chromium	05/05/16 7:14 PM	Reported
70	CCB-6	CCB	1	Hexavalent Chromium	05/05/16 7:24 PM	Reported
71	N019560-004A	SAMP	1	Hexavalent Chromium	05/05/16 7:34 PM	Not Reported
72	N019560-004AMS	MS	1	Hexavalent Chromium	05/05/16 7:44 PM	Not Reported
73	N019560-005A	SAMP	1	Hexavalent Chromium	05/05/16 7:54 PM	Not Reported
74	N019560-005AMS	MS	1	Hexavalent Chromium	05/05/16 8:04 PM	Not Reported
75	N019560-006A	SAMP	100	Hexavalent Chromium	05/05/16 8:14 PM	Reported
76	N019560-006AMS	MS	100	Hexavalent Chromium	05/05/16 8:24 PM	Reported
77	N019560-007A	SAMP	500	Hexavalent Chromium	05/05/16 8:34 PM	Reported
78	N019560-007AMS	MS	500	Hexavalent Chromium	05/05/16 8:44 PM	Reported
79	N019560-008A	SAMP	100	Hexavalent Chromium	05/05/16 8:54 PM	Reported
80	N019560-008AMS	MS	100	Hexavalent Chromium	05/05/16 9:04 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	05/05/16 9:13 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	05/05/16 9:23 PM	Reported
83	N019560-009A	SAMP	1	Hexavalent Chromium	05/05/16 9:33 PM	Not Reported
84	N019560-009AMS	MS	1	Hexavalent Chromium	05/05/16 9:43 PM	Not Reported
85	N019560-010A	SAMP	1	Hexavalent Chromium	05/05/16 9:53 PM	Not Reported
86	N019560-010AMS	MS	1	Hexavalent Chromium	05/05/16 10:03 PM	Not Reported
87	N019560-011A	SAMP	20	Hexavalent Chromium	05/05/16 10:13 PM	Reported
88	N019560-011AMS	MS	20	Hexavalent Chromium	05/05/16 10:23 PM	Reported
89	N019560-012A	SAMP	200	Hexavalent Chromium	05/05/16 10:33 PM	Reported
90	N019560-012AMS	MS	200	Hexavalent Chromium	05/05/16 10:43 PM	Reported
91	N019560-013	SAMP	1	Hexavalent Chromium	05/05/16 10:53 PM	Reported
92	N019560-013AMS	MS	1	Hexavalent Chromium	05/05/16 11:03 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	05/05/16 11:13 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	05/05/16 11:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160505A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**06/May/16 10:59:20**
No. of Injections:	**97**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/05/2016 09:06	Finished	CCV @ 5ppb, IWST-160401A
11	BLANK	2	1000	Unknown		05/05/2016 09:18	Finished	CCV @ 5ppb, IWST-160401A
12	CCV-1,CCV,1	3	1000	Unknown		05/05/2016 09:28	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/05/2016 09:38	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/05/2016 09:48	Finished	CCB R160501A
15	MB-H2O,MBLK,1	6	1000	Unknown		05/05/2016 09:58	Finished	MB R160426A
16	LCS-H2O,LCS,1	7	1000	Unknown		05/05/2016 10:08	Finished	LCS(5ppb), IWST-160401B
17	N019543-011A,SAMP,1	8	1000	Unknown		05/05/2016 10:18	Finished	SAMP, 10mL
18	N019543-011AMS,MS,1	9	1000	Unknown		05/05/2016 10:28	Finished	MS (1ppb), IWST-160401B, 10 ml
19	N019559-001A,SAMP,1	10	1000	Unknown		05/05/2016 10:38	Finished	SAMP, 10mL
20	N019559-001ADUP,DUP,1	11	1000	Unknown		05/05/2016 10:48	Finished	DUP, 10mL
21	N019559-001AMS,MS,1	12	1000	Unknown		05/05/2016 10:58	Finished	MS (1ppb), IWST-160401B, 10 ml
22	N019559-001AMSD,MSD,1	13	1000	Unknown		05/05/2016 11:08	Finished	MSD (1ppb), IWST-160401B, 10 r
23	N019559-002A,SAMP,1	14	1000	Unknown		05/05/2016 11:17	Finished	SAMP, 10mL
24	N019559-002AMS,MS,1	15	1000	Unknown		05/05/2016 11:27	Finished	MS (1ppb), IWST-160401B, 10 ml
25	CCV-2,CCV1,1	16	1000	Unknown		05/05/2016 11:37	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/05/2016 11:47	Finished	CCB R160426G
27	N019559-003A,SAMP,1	18	1000	Unknown		05/05/2016 11:59	Finished	SAMP, 10mL
28	N019559-003AMS,MS,1	19	1000	Unknown		05/05/2016 12:11	Finished	MS (1ppb), IWST-160401B, 10 ml
29	N019559-004A,SAMP,1	20	1000	Unknown		05/05/2016 12:21	Finished	SAMP, 10mL
30	N019559-004AMS,MS,1	21	1000	Unknown		05/05/2016 12:31	Finished	MS (1ppb), IWST-160401B, 10 ml
31	N019559-005A,SAMP,1	22	1000	Unknown		05/05/2016 12:41	Finished	SAMP, 10mL
32	N019559-005AMS,MS,1	23	1000	Unknown		05/05/2016 12:51	Finished	MS (1ppb), IWST-160401B, 10 ml
33	N019559-006A,SAMP,1	24	1000	Unknown		05/05/2016 13:01	Finished	SAMP, 10mL
34	N019559-006AMS,MS,1	25	1000	Unknown		05/05/2016 13:11	Finished	MS (1ppb), IWST-160401B, 10 ml
35	N019559-007A,SAMP,1	26	1000	Unknown		05/05/2016 13:21	Finished	SAMP, 10mL
36	N019559-007AMS,MS,1	27	1000	Unknown		05/05/2016 13:31	Finished	MS (1ppb), IWST-160401B, 10 ml
37	CCV-3,CCV,1	28	1000	Unknown		05/05/2016 13:41	Finished	CCV @ 5ppb, IWST-160401A
38	CCB-3,CCB,1	29	1000	Unknown		05/05/2016 13:51	Finished	CCB
39	N019559-008A,SAMP,1	30	1000	Unknown		05/05/2016 14:01	Finished	SAMP, 10mL
40	N019559-008AMS,MS,1	31	1000	Unknown		05/05/2016 14:11	Finished	MS (1ppb), IWST-160401B, 10 ml
41	N019559-009A,SAMP,1	32	1000	Unknown		05/05/2016 14:21	Finished	SAMP, 10mL
42	N019559-009AMS,MS,1	33	1000	Unknown		05/05/2016 14:31	Finished	MS (1ppb), IWST-160401B, 10 ml
43	N019559-010A,SAMP,1	34	1000	Unknown		05/05/2016 14:41	Finished	SAMP, 10mL
44	N019559-010AMS,MS,1	35	1000	Unknown		05/05/2016 14:51	Finished	MS (1ppb), IWST-160401B, 10 ml
45	N019559-011A,SAMP,1	36	1000	Unknown		05/05/2016 15:01	Finished	SAMP, 10mL
46	N019559-011AMS,MS,1	37	1000	Unknown		05/05/2016 15:11	Finished	MS (1ppb), IWST-160401B, 10 ml
47	N019559-012A,SAMP,1	38	1000	Unknown		05/05/2016 15:21	Finished	SAMP, 10mL
48	N019559-012AMS,MS,1	39	1000	Unknown		05/05/2016 15:31	Finished	MS (1ppb), IWST-160401B, 10 ml
49	CCV-4,CCV1,1	40	1000	Unknown		05/05/2016 15:41	Finished	CCV @ 10ppb, IWST-160401A
50	CCB-4,CCB,1	41	1000	Unknown		05/05/2016 15:51	Finished	CCB R160331B
51	N019559-013A,SAMP,1	42	1000	Unknown		05/05/2016 16:01	Finished	SAMP, 10mL
52	N019559-013AMS,MS,1	43	1000	Unknown		05/05/2016 16:10	Finished	MS (1ppb), IWST-160401B, 10 ml
53	N019559-014A,SAMP,1	44	1000	Unknown		05/05/2016 16:20	Finished	SAMP, 10mL
54	N019559-014AMS,MS,1	45	1000	Unknown		05/05/2016 16:30	Finished	MS (1ppb), IWST-160401B, 10 ml
55	N019559-003AMS,MS,1	46	1000	Unknown		05/05/2016 16:47	Finished	MS (1ppb), IWST-160401B, 10 ml
56	N019559-010AMS,MS,1	47	1000	Unknown		05/05/2016 17:00	Finished	MS (1ppb), IWST-160401B, 10 ml
57	CCV-5,CCV,1	48	1000	Unknown		05/05/2016 17:12	Finished	CCV @ 5ppb, IWST-160401A
58	CCB-5,CCB,1	49	1000	Unknown		05/05/2016 17:22	Finished	CCB
59	MB-H2O,MBLK,1	1	1000	Unknown		05/05/2016 17:32	Finished	MB R160426G
60	LCS-H2O,LCS,1	2	1000	Unknown		05/05/2016 17:44	Finished	LCS(5ppb), IWST-160401B
61	N019560-001A,SAMP,1	3	1000	Unknown		05/05/2016 17:54	Finished	SAMP, 10mL
62	N019560-001ADUP,DUP,1	4	1000	Unknown		05/05/2016 18:04	Finished	DUP, 10mL
63	N019560-001AMS,MS,1	5	1000	Unknown		05/05/2016 18:14	Finished	MS (1ppb), IWST-160401B, 10 ml
64	N019560-001AMSD,MSD,1	6	1000	Unknown		05/05/2016 18:24	Finished	MSD (1ppb), IWST-160401B, 10 r
65	N019560-002A,SAMP,1	7	1000	Unknown		05/05/2016 18:34	Finished	SAMP, 10mL
66	N019560-002AMS,MS,1	8	1000	Unknown		05/05/2016 18:44	Finished	MS (1ppb), IWST-160401B, 10 ml
67	N019560-003A,SAMP,1	9	1000	Unknown		05/05/2016 18:54	Finished	SAMP, 10mL
68	N019560-003AMS,MS,1	10	1000	Unknown		05/05/2016 19:04	Finished	MS (1ppb), IWST-160401B, 10 ml
69	CCV-6,CCV1,1	11	1000	Unknown		05/05/2016 19:14	Finished	CCV @ 10ppb, IWST-160401A
70	CCB-6,CCB,1	12	1000	Unknown		05/05/2016 19:24	Finished	CCB

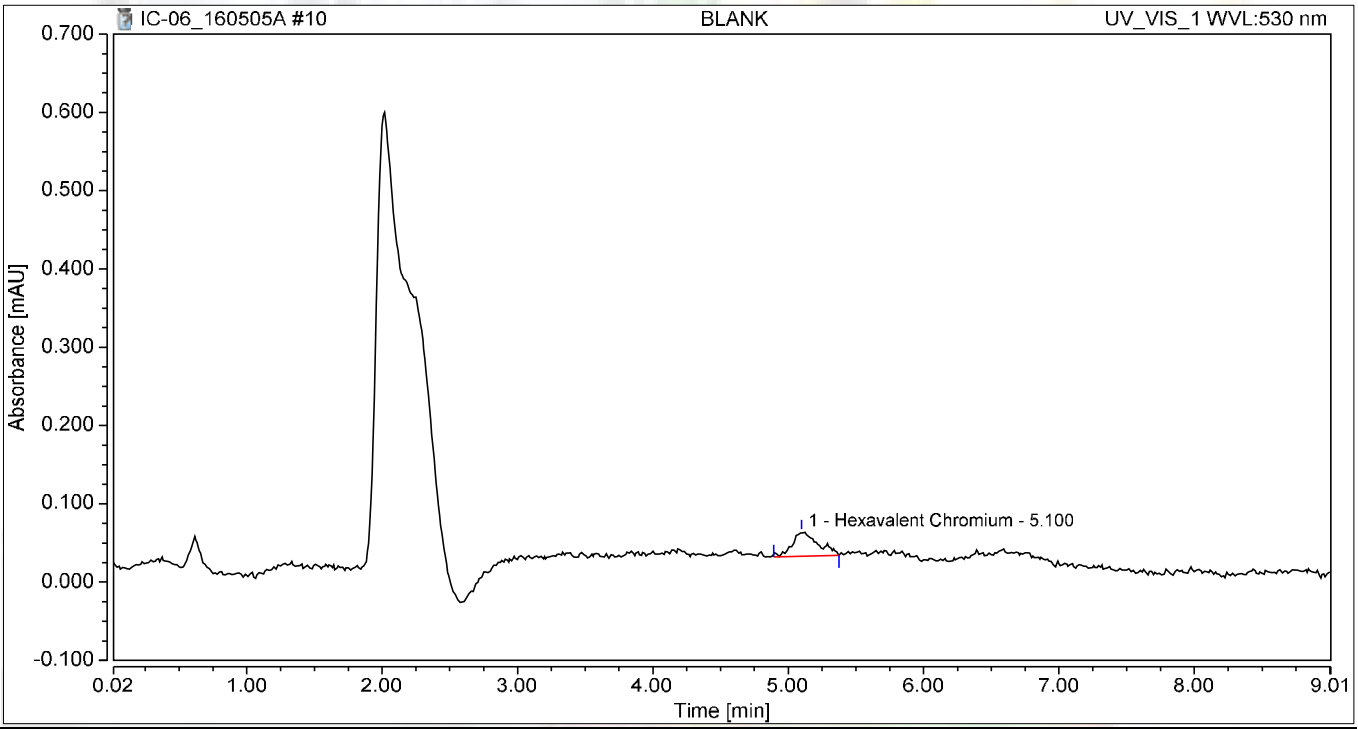
71	N019560-004A,SAMP,1	13	1000	Unknown		05/05/2016 19:34	Finished	SAMP, 10mL
72	N019560-004AMS,MS,1	14	1000	Unknown		05/05/2016 19:44	Finished	MS (1ppb), IWST-160401B, 10 mL
73	N019560-005A,SAMP,1	15	1000	Unknown		05/05/2016 19:54	Finished	SAMP, 10mL
74	N019560-005AMS,MS,1	16	1000	Unknown		05/05/2016 20:04	Finished	MS (1ppb), IWST-160401B, 10 mL
75	N019560-006A,SAMP,100	17	1000	Unknown		05/05/2016 20:14	Finished	SAMP, 0.10>10mL
76	N019560-006AMS,MS,100	18	1000	Unknown		05/05/2016 20:24	Finished	MS (5ppb), IWST-160401B, 0.10>
77	N019560-007A,SAMP,500	19	1000	Unknown		05/05/2016 20:34	Finished	SAMP, 20uL>10mL
78	N019560-007AMS,MS,500	20	1000	Unknown		05/05/2016 20:44	Finished	MS (5ppb), IWST-160401B, 20uL>
79	N019560-008A,SAMP,100	21	1000	Unknown		05/05/2016 20:54	Finished	SAMP, 0.10>10mL
80	N019560-008AMS,MS,100	22	1000	Unknown		05/05/2016 21:04	Finished	MS (5ppb), IWST-160401B, 0.10>
81	CCV-7,CCV,1	23	1000	Unknown		05/05/2016 21:13	Finished	CCV @ 5ppb, IWST-160401A
82	CCB-7,CCB,1	24	1000	Unknown		05/05/2016 21:23	Finished	CCB
83	N019560-009A,SAMP,1	25	1000	Unknown		05/05/2016 21:33	Finished	SAMP, 10mL
84	N019560-009AMS,MS,1	26	1000	Unknown		05/05/2016 21:43	Finished	MS (5ppb), IWST-160401B, 10 mL
85	N019560-010A,SAMP,1	27	1000	Unknown		05/05/2016 21:53	Finished	SAMP, 10mL
86	N019560-010AMS,MS,1	28	1000	Unknown		05/05/2016 22:03	Finished	MS (5ppb), IWST-160401B, 10 mL
87	N019560-011A,SAMP,20	29	1000	Unknown		05/05/2016 22:13	Finished	SAMP, 0.5> 10mL
88	N019560-011AMS,MS,20	30	1000	Unknown		05/05/2016 22:23	Finished	MS (5ppb), IWST-160401B, 0.5>1
89	N019560-012A,SAMP,200	31	1000	Unknown		05/05/2016 22:33	Finished	SAMP, 50uL>10mL
90	N019560-012AMS,MS,200	32	1000	Unknown		05/05/2016 22:43	Finished	MS (5ppb), IWST-160401B, 50uL>
91	N019560-013,SAMP,1	33	1000	Unknown		05/05/2016 22:53	Finished	SAMP, 10mL
92	N019560-013AMS,MS,1	34	1000	Unknown		05/05/2016 23:03	Finished	MS (1ppb), IWST-160401B, 10 mL
93	CCV-8-CCV1,1	35	1000	Unknown		05/05/2016 23:13	Finished	CCV @ 10ppb, IWST-160401A
94	CCB-8-CCB,1	36	1000	Unknown		05/05/2016 23:23	Finished	CCB
95	SHUTDOWN	37	1000	Unknown		05/05/2016 23:33	Finished	
96	Eluent: R160503A	38	1000	Unknown		n.a.	Finished	Eluent
97	PCR: R160504A	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.007	0.031	100.00	100.00	0.0114
Total:			**0.007**	**0.031**	**100.00**	**100.00**	

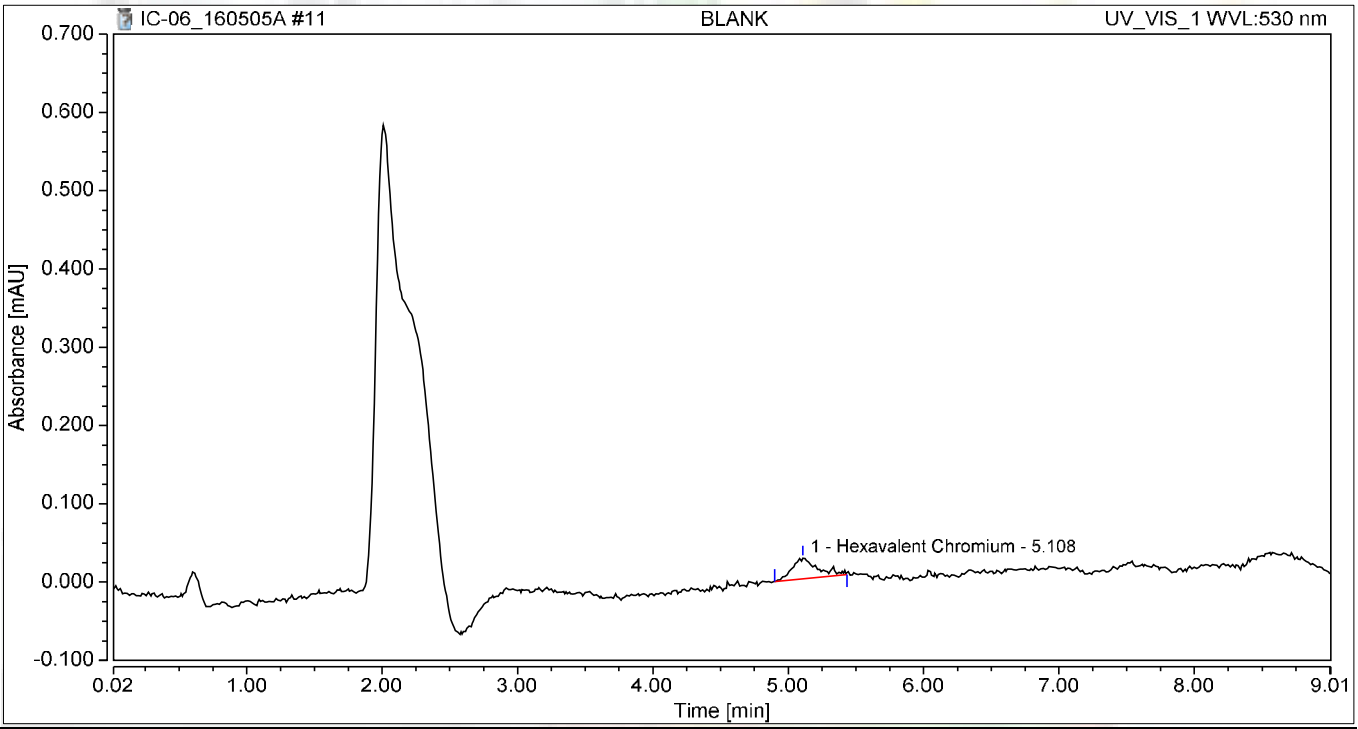
not reported

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.006	0.026	100.00	100.00	0.0064
Total:			**0.006**	**0.026**	**100.00**	**100.00**	

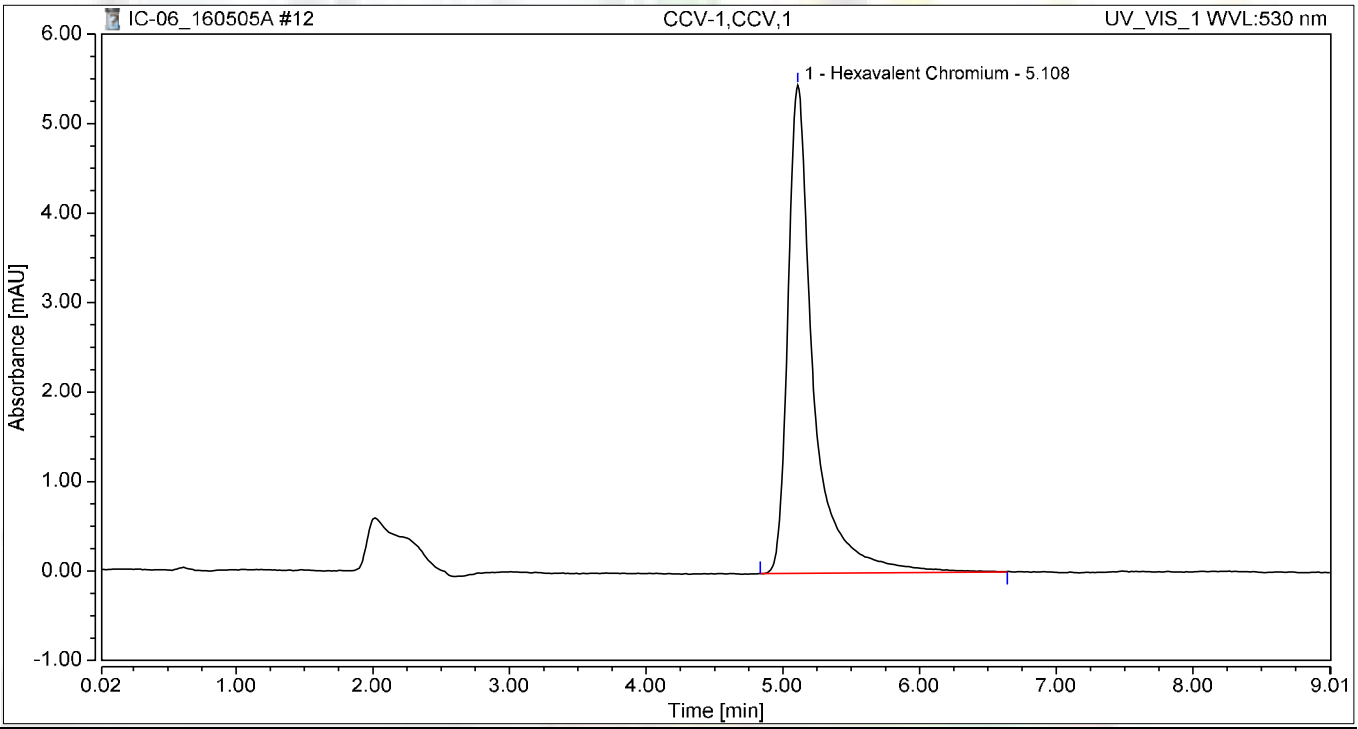
not reported

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

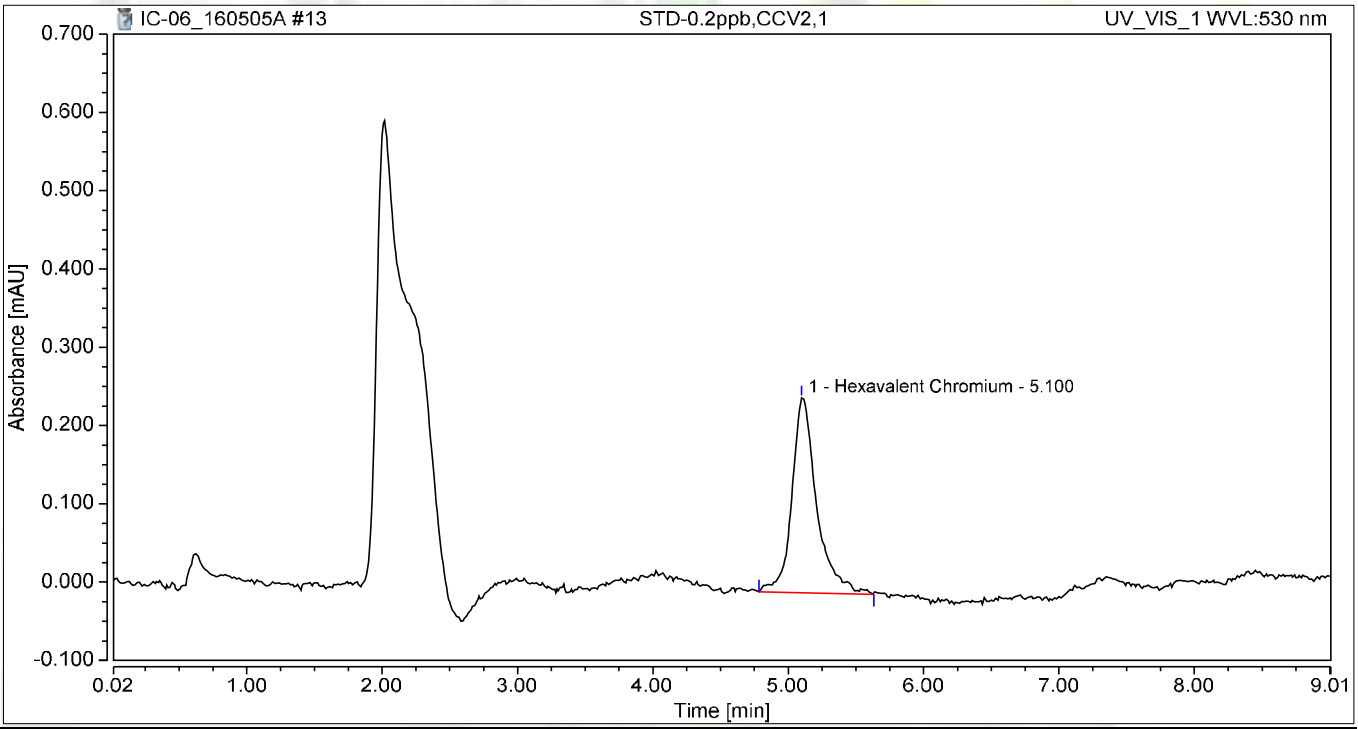
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.186	5.458	100.00	100.00	5.0592
Total:			**1.186**	**5.458**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

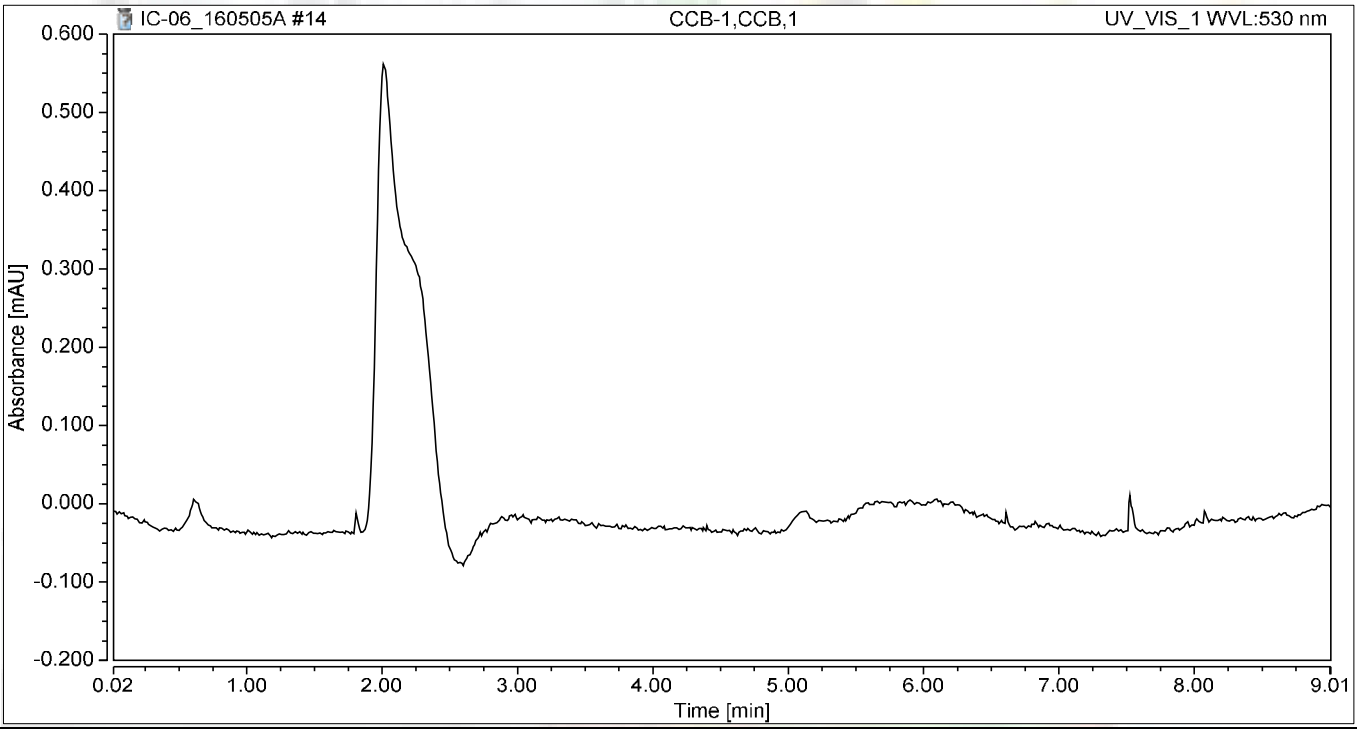
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.053	0.249	100.00	100.00	0.2087
Total:			**0.053**	**0.249**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

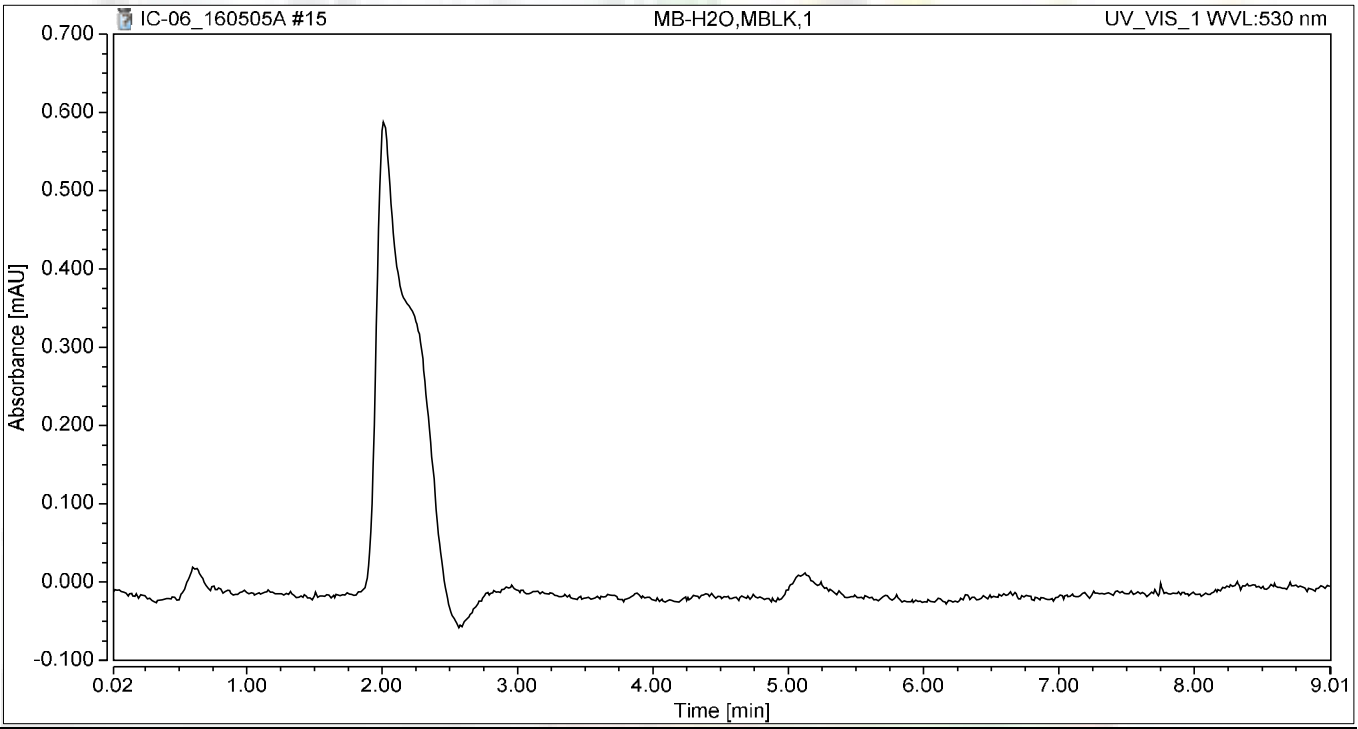
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 09:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

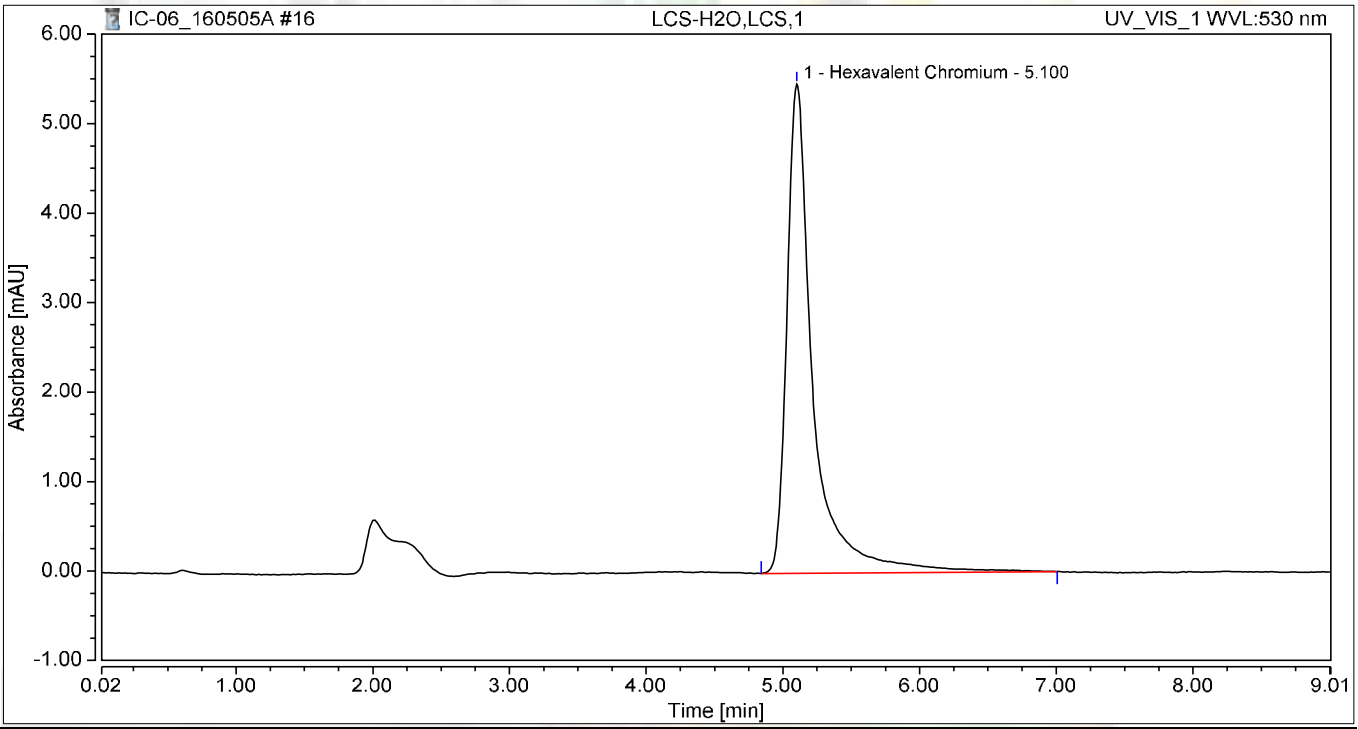
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

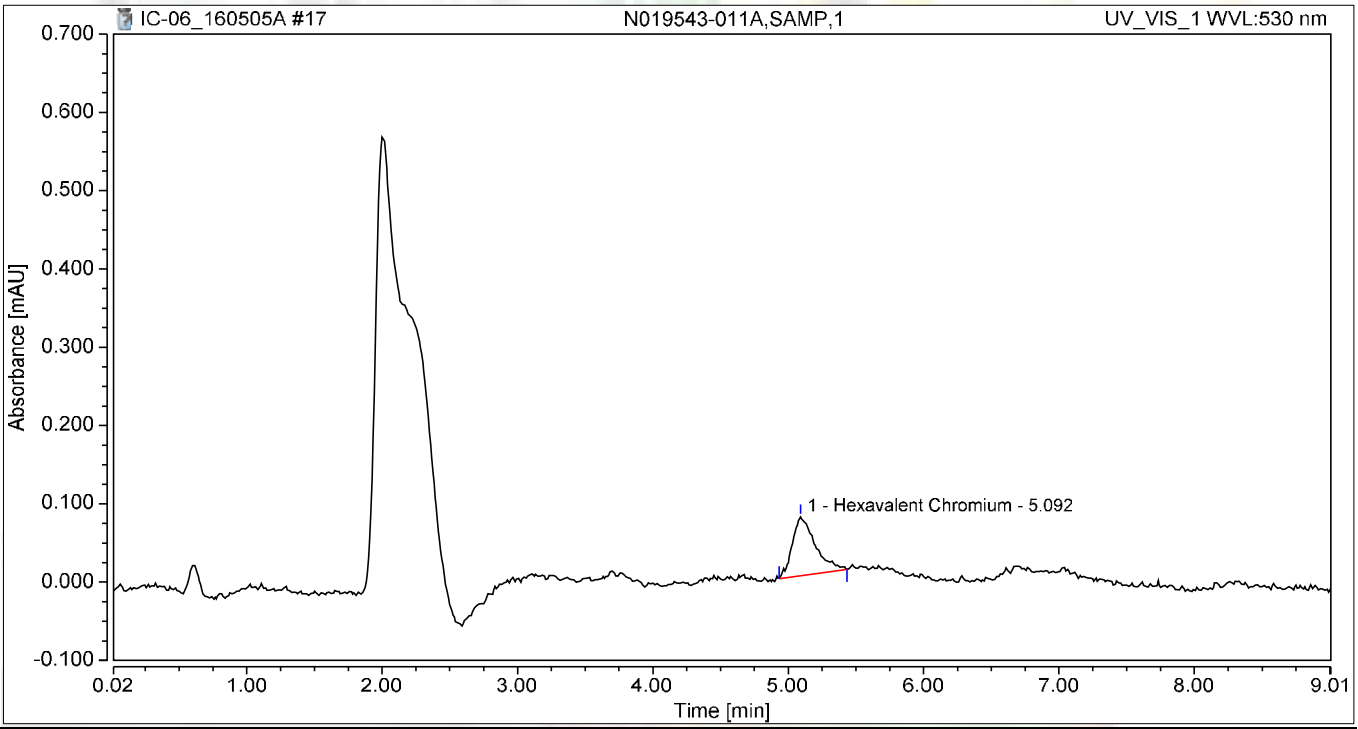
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.214	5.465	100.00	100.00	5.1786
Total:			**1.214**	**5.465**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-011A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

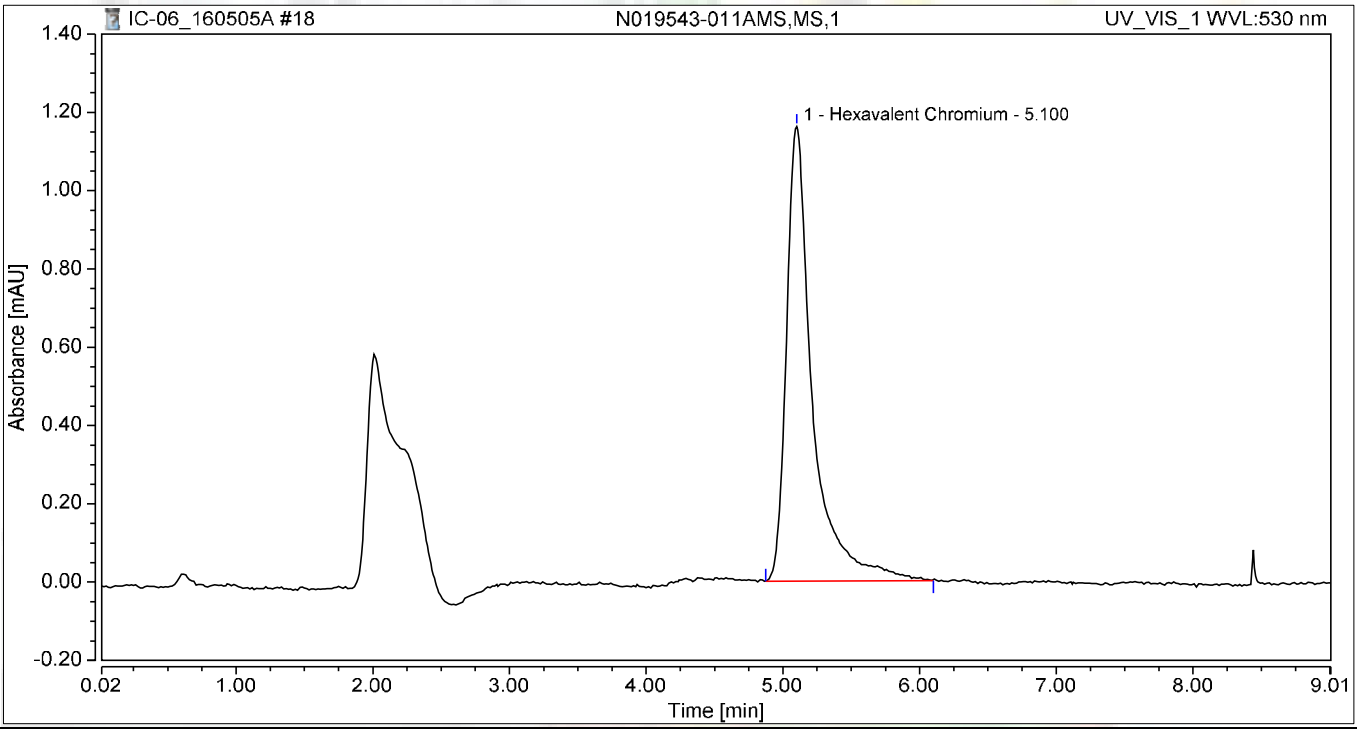
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.015	0.075	100.00	100.00	0.0458
Total:			**0.015**	**0.075**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019543-011AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

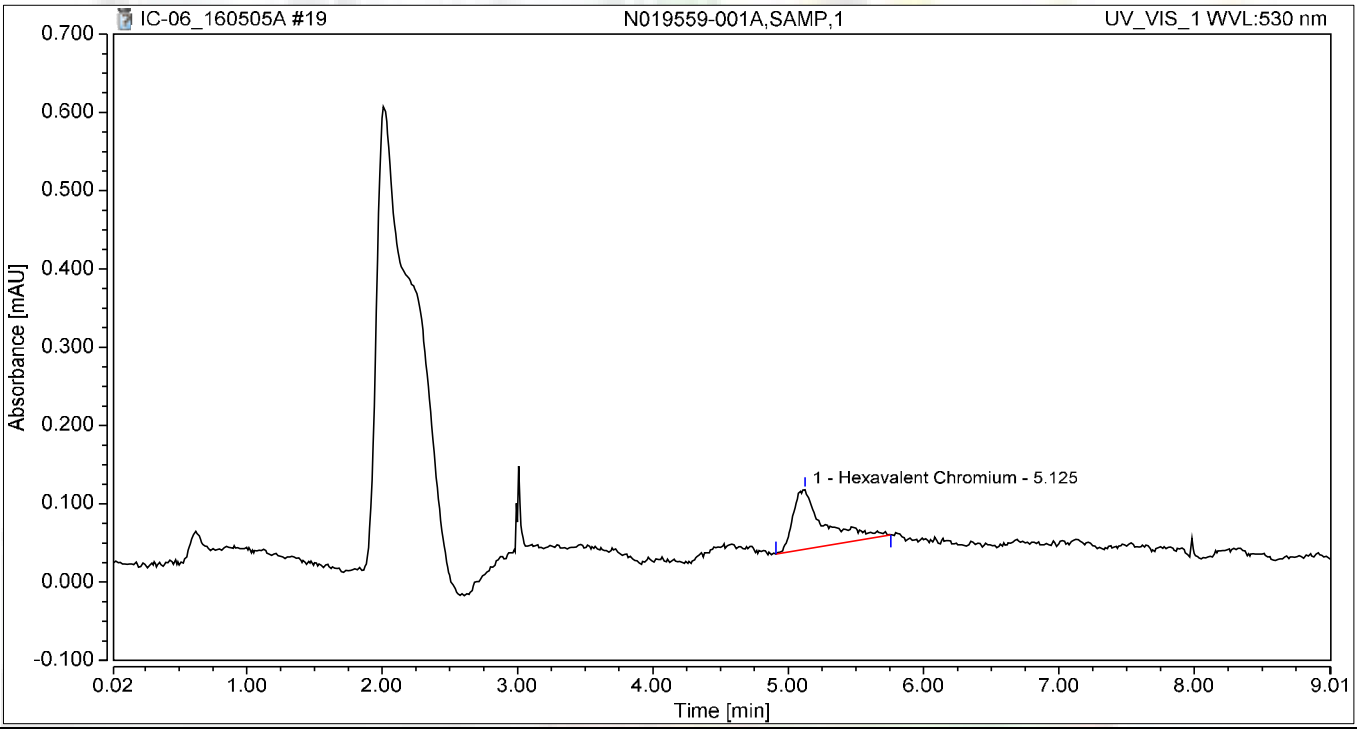
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.256	1.161	100.00	100.00	1.0774
Total:			**0.256**	**1.161**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

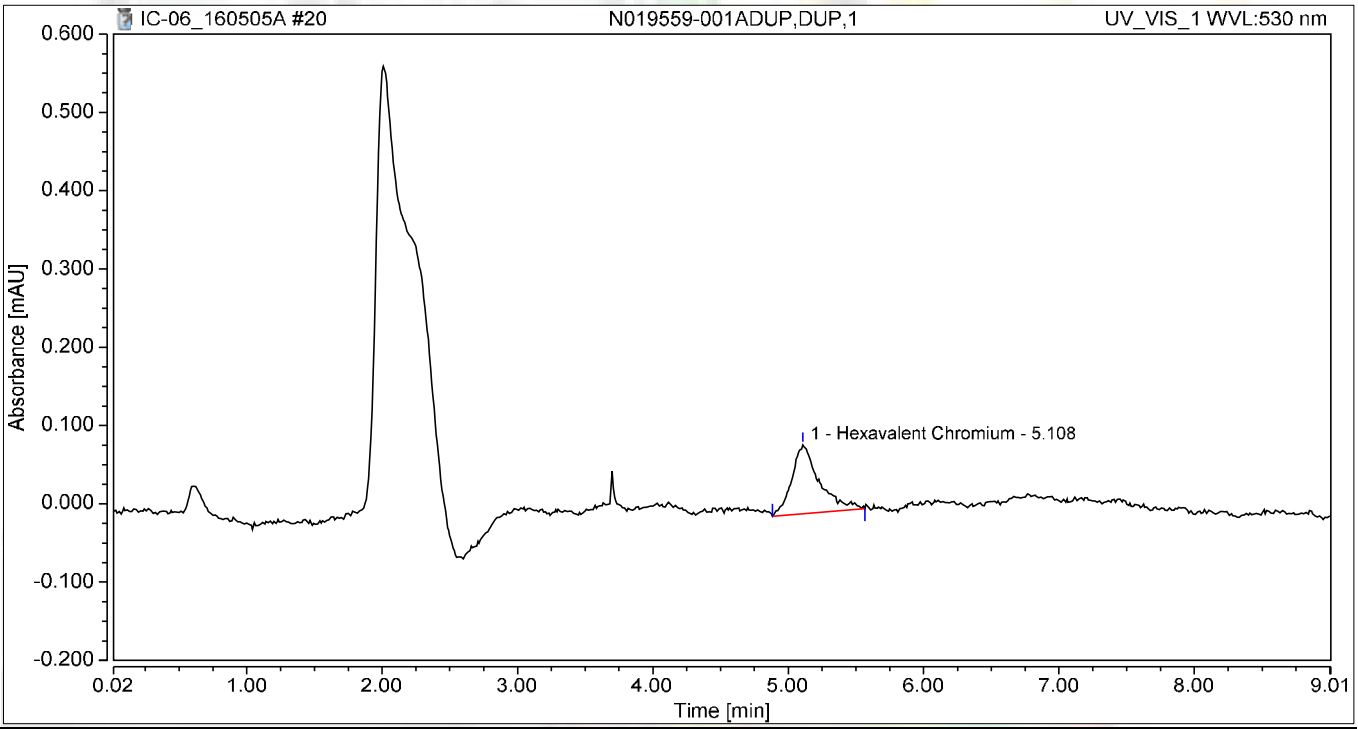
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.125	0.020	0.076	100.00	100.00	0.0690
Total:			**0.020**	**0.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-001ADUP,DUP,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

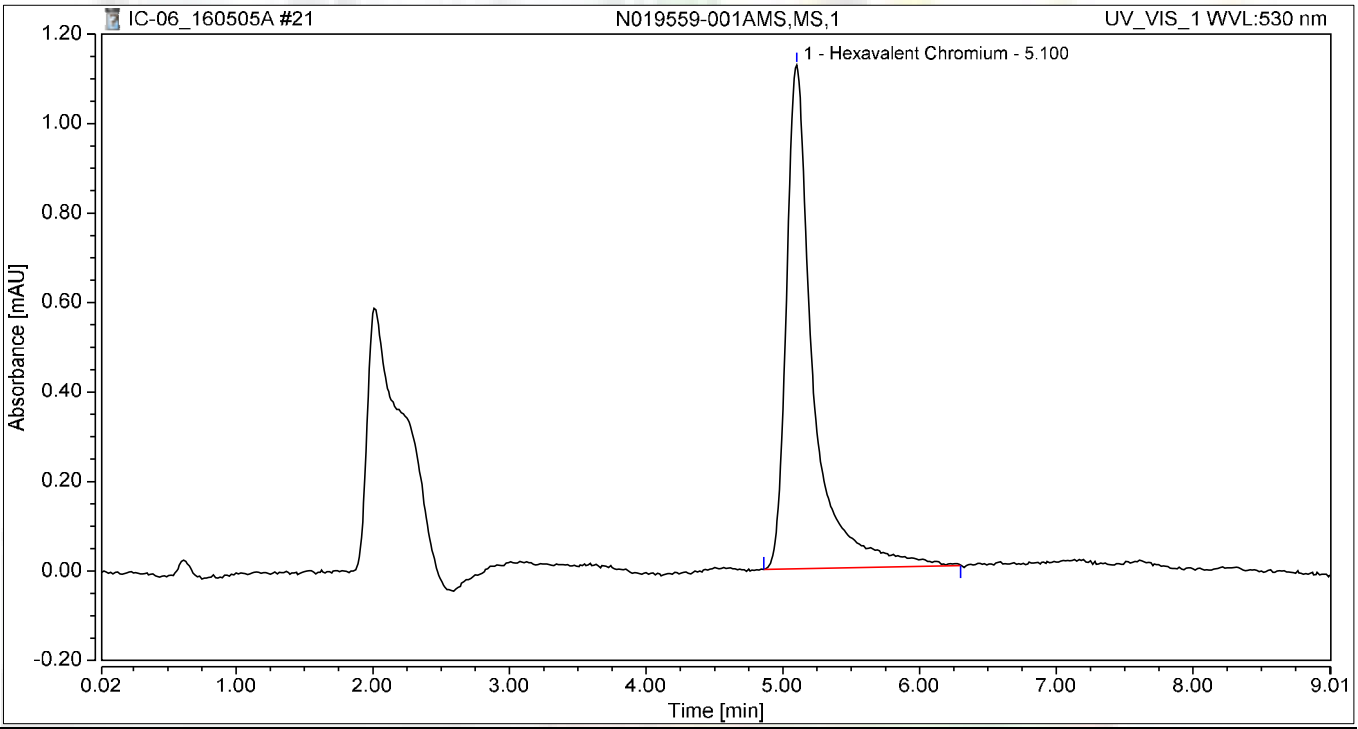
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.021	0.088	100.00	100.00	0.0711
Total:			**0.021**	**0.088**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

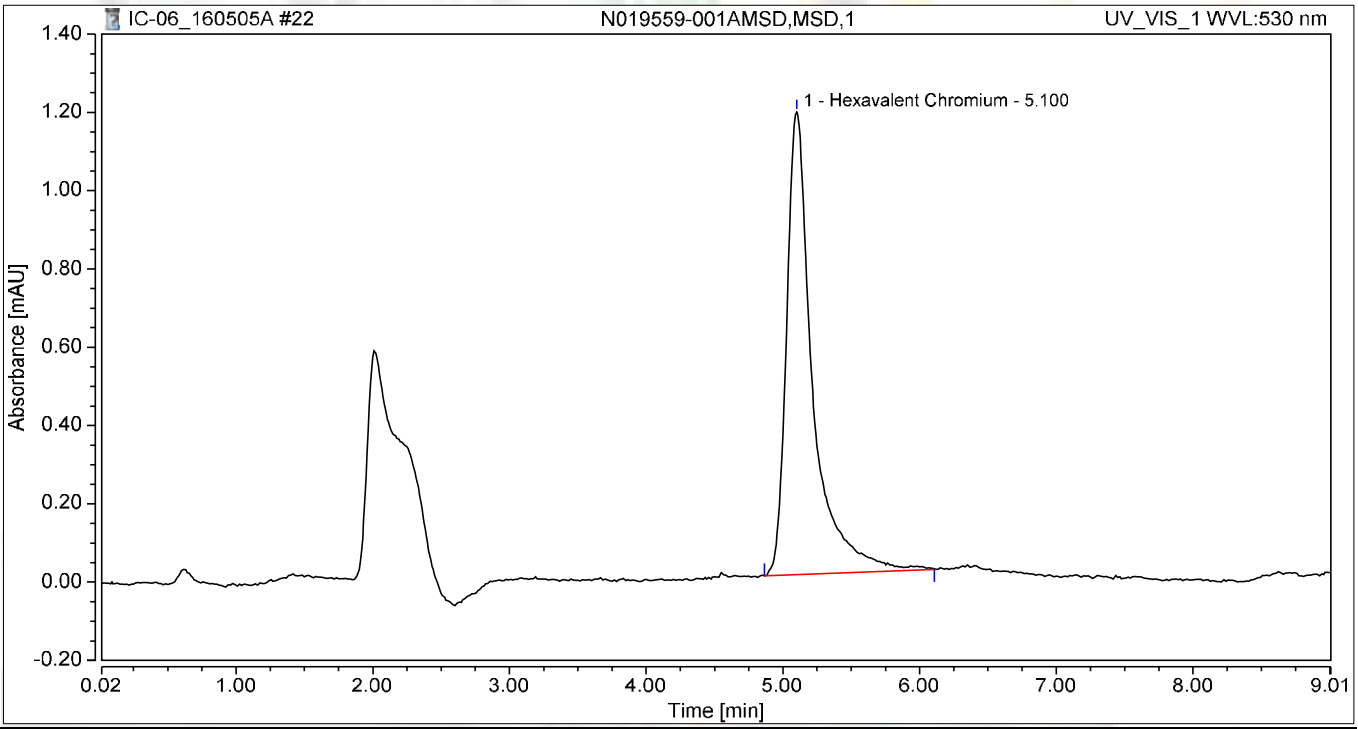
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.254	1.126	100.00	100.00	1.0698
Total:			**0.254**	**1.126**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-001AMSD,MSD,1**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

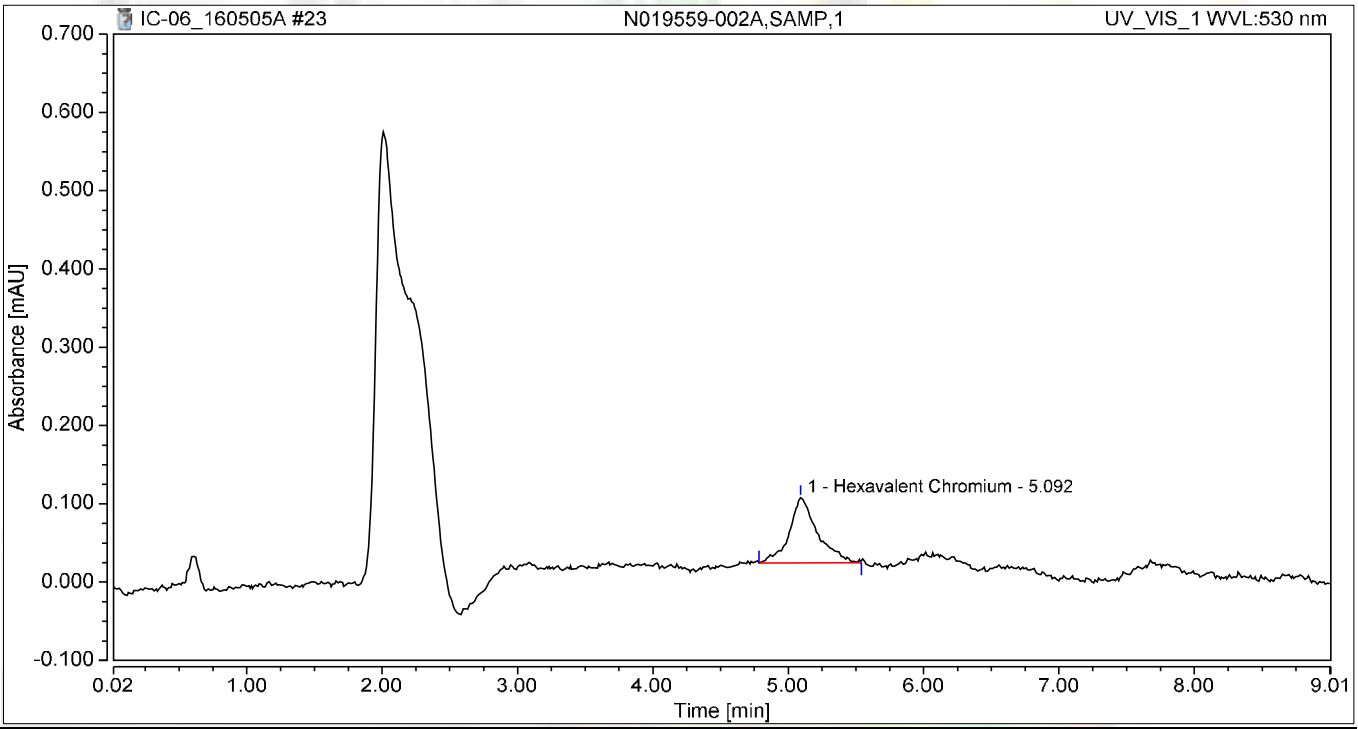
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.262	1.182	100.00	100.00	1.1041
Total:			**0.262**	**1.182**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-002A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

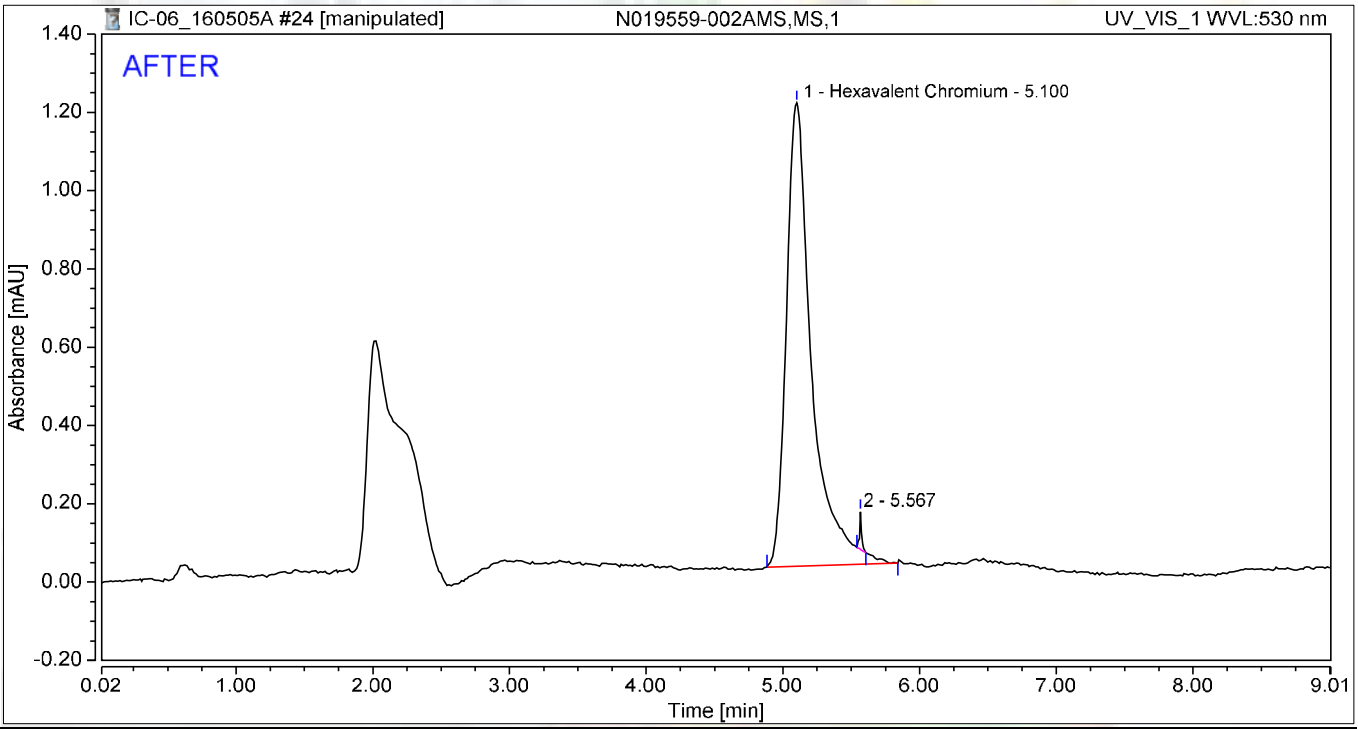
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.020	0.083	100.00	100.00	0.0684
Total:			**0.020**	**0.083**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-002AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.254	1.183	99.30	92.48	1.0680
2		5.567	0.002	0.096	0.70	7.52	n.a.
Total:			**0.255**	**1.280**	**100.00**	**100.00**	

JAS 5/10/2016

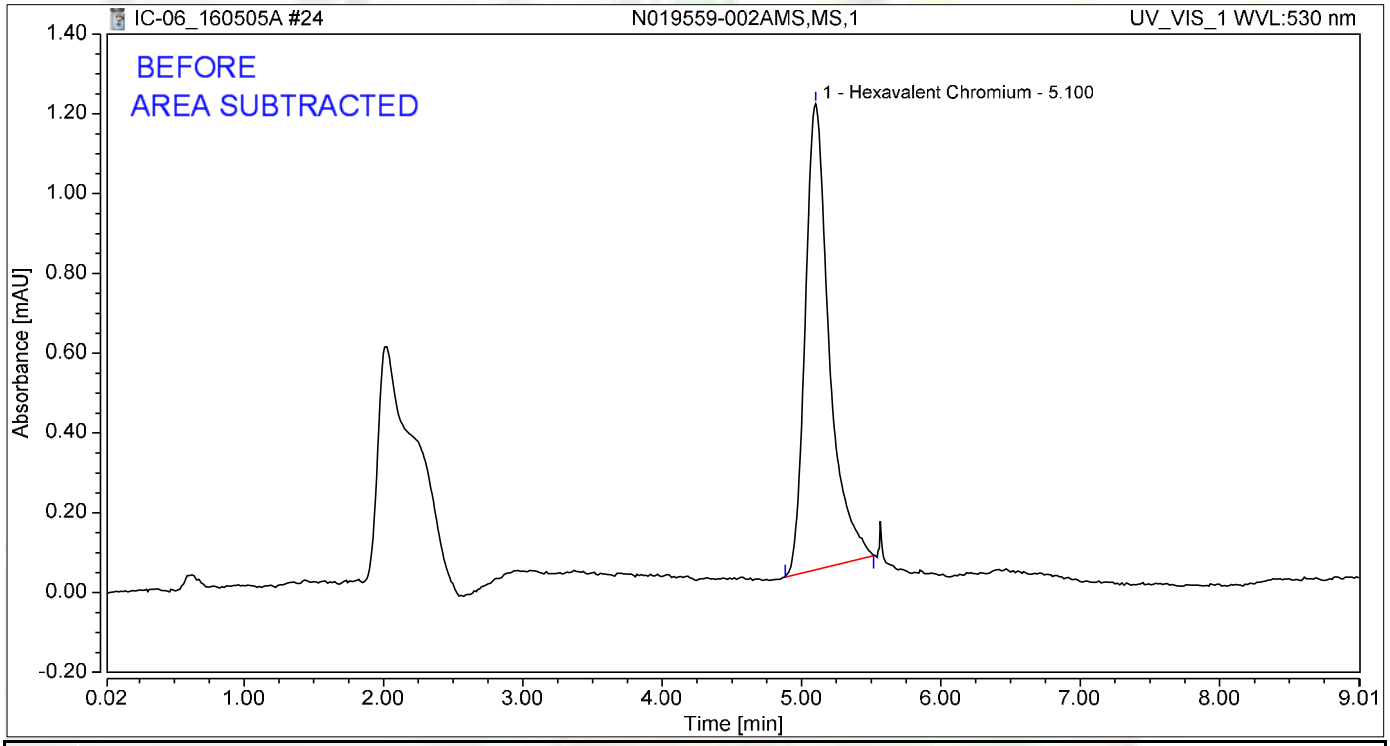
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019559-002AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.233	1.167	100.00	100.00	0.9781
Total:			**0.233**	**1.167**	**100.00**	**100.00**	

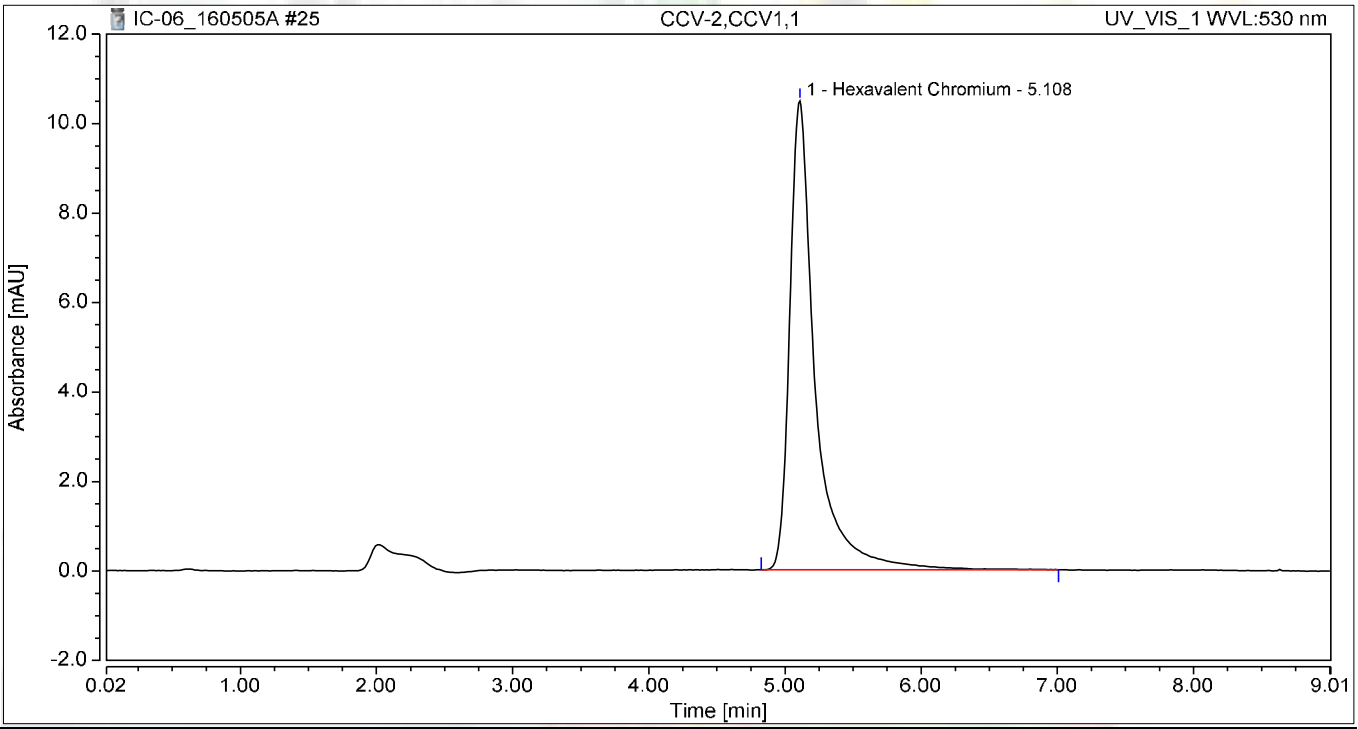
JAS 5/10/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

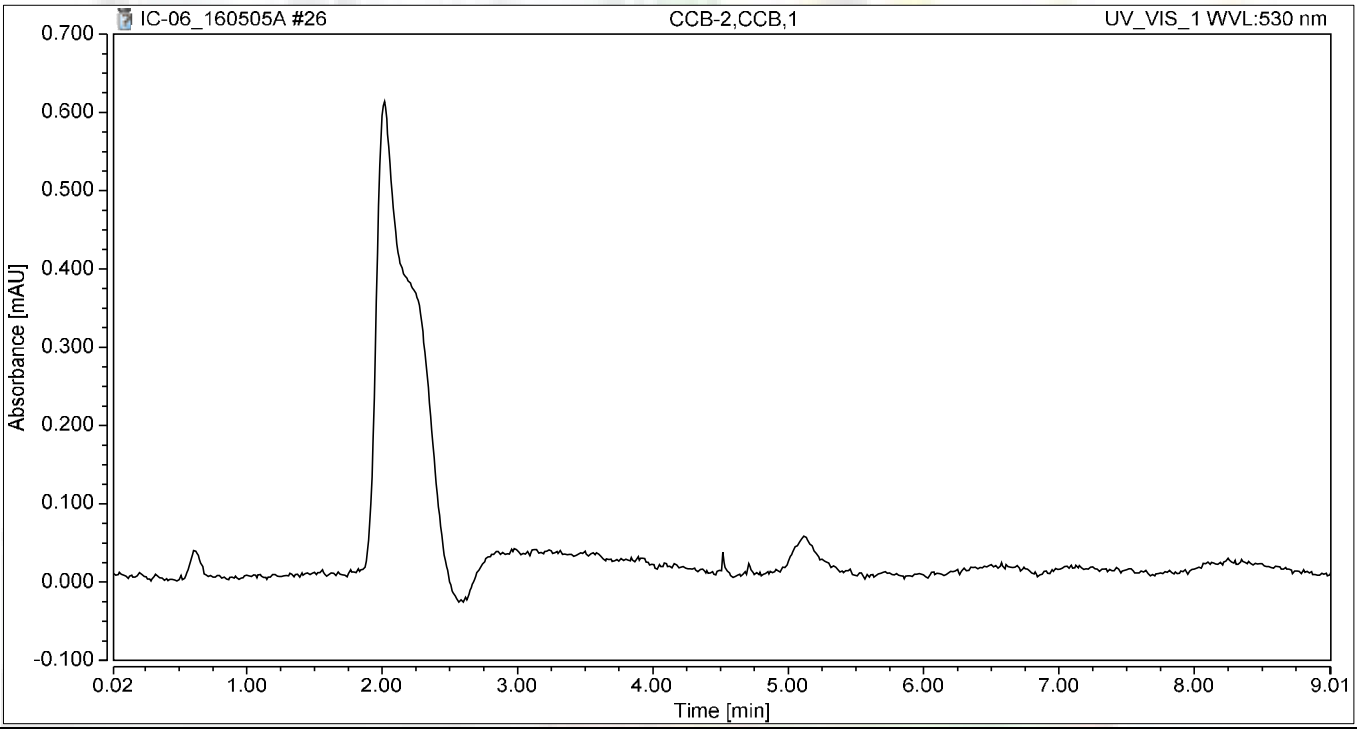
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.282	10.488	100.00	100.00	9.7528
Total:			**2.282**	**10.488**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

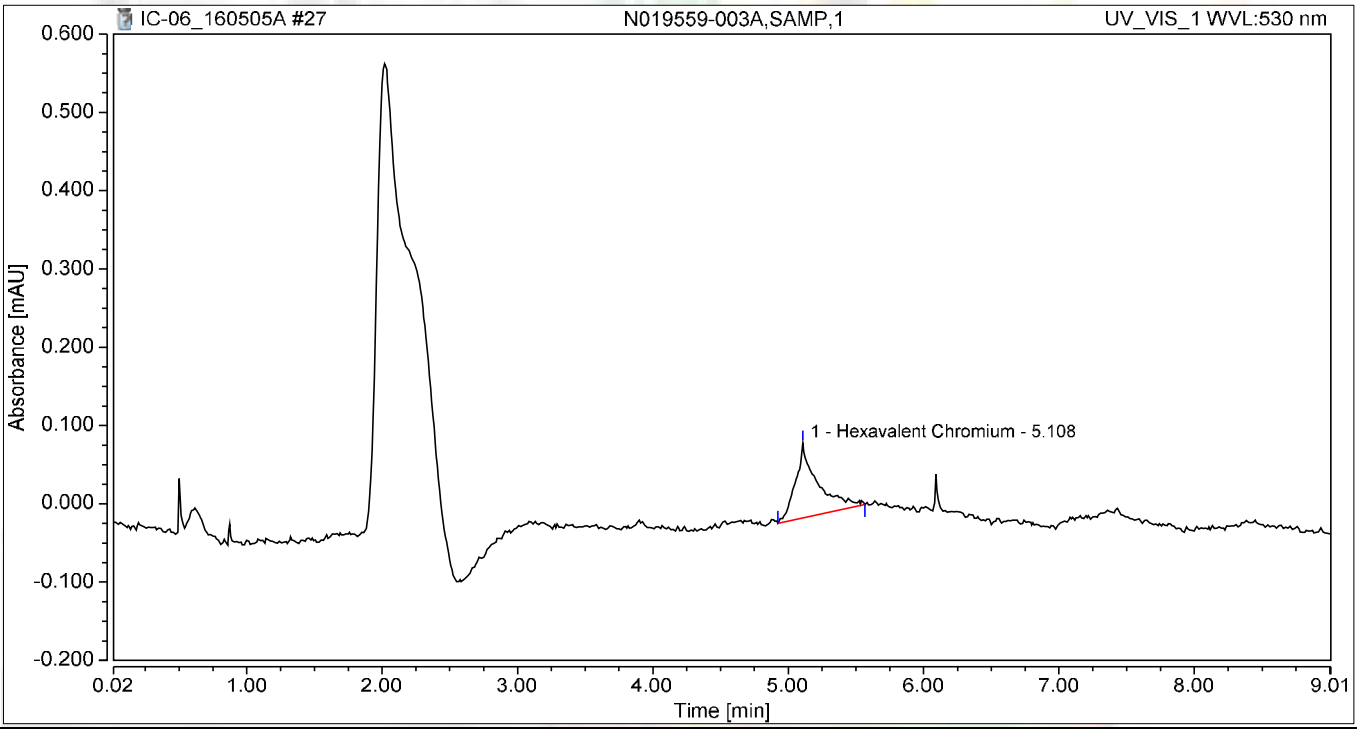
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

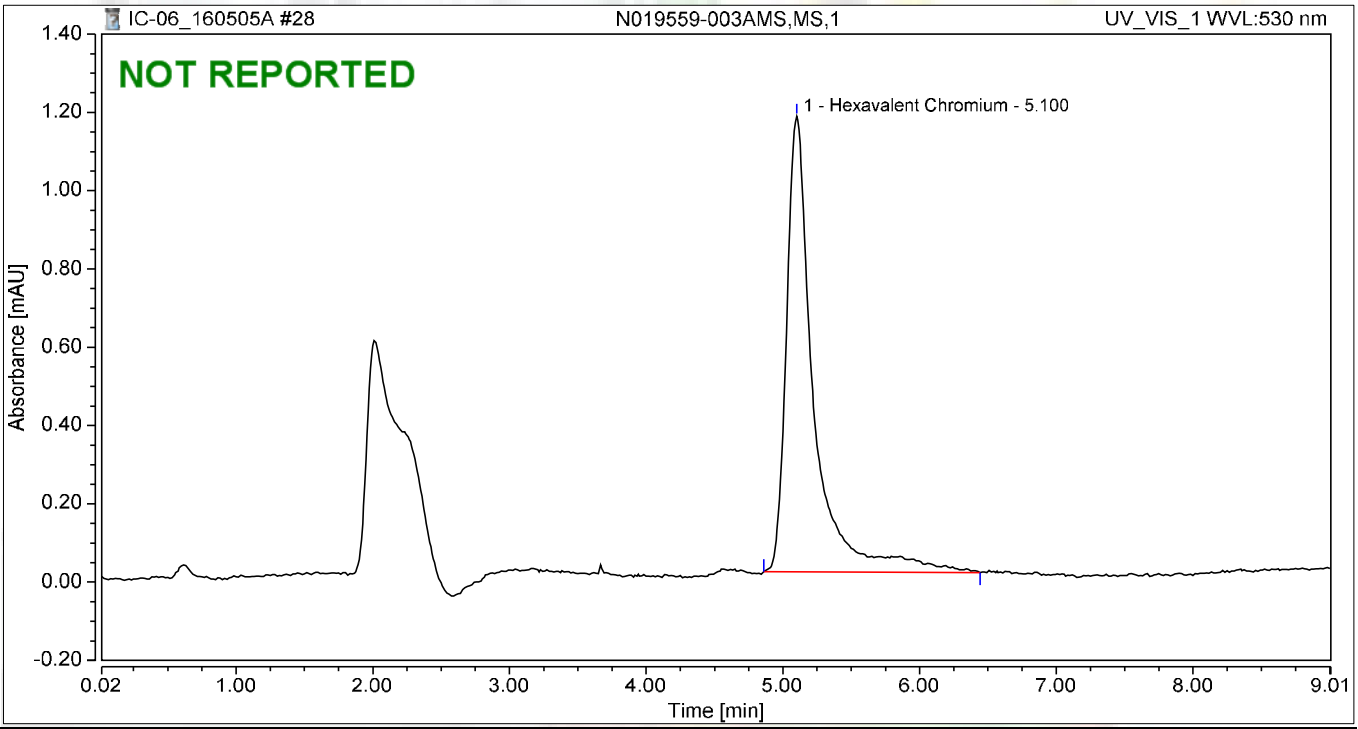
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.018	0.096	100.00	100.00	0.0596
Total:			**0.018**	**0.096**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-003AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

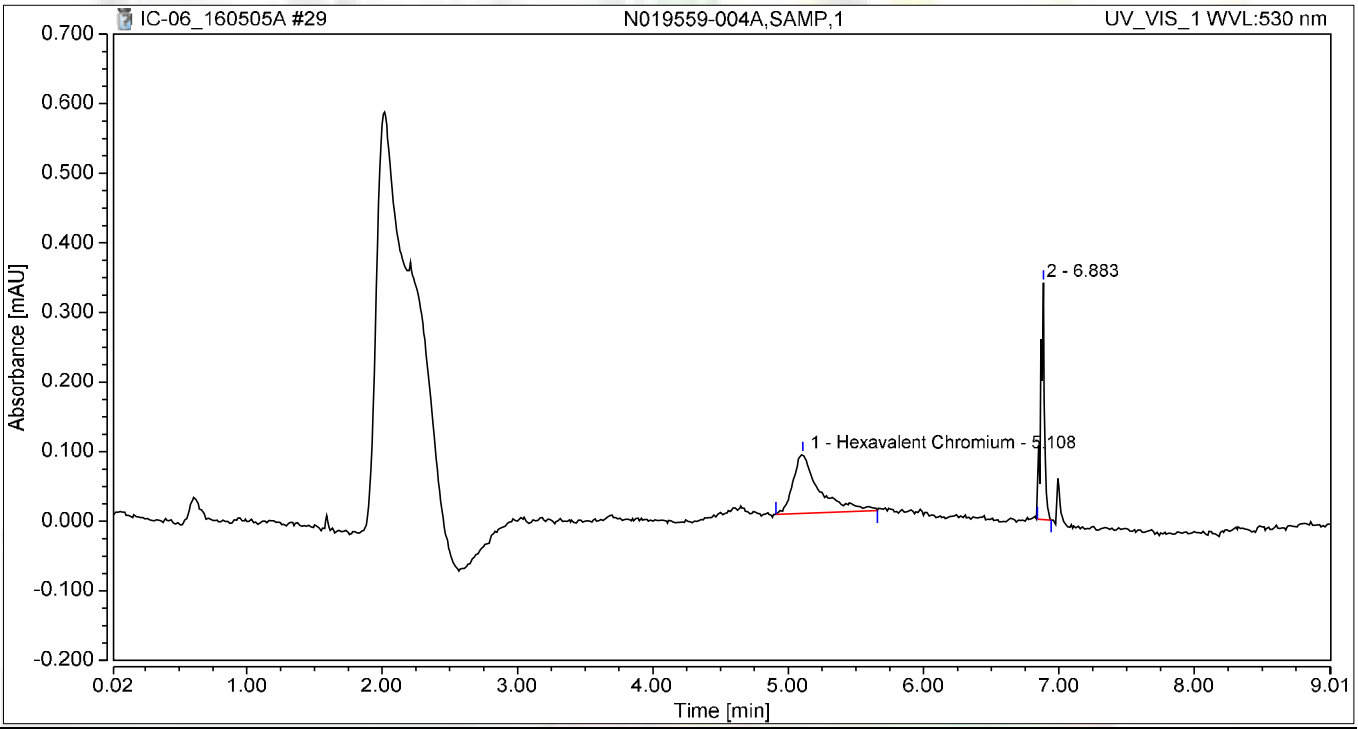
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.270	1.163	100.00	100.00	1.1376
Total:			**0.270**	**1.163**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-004A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

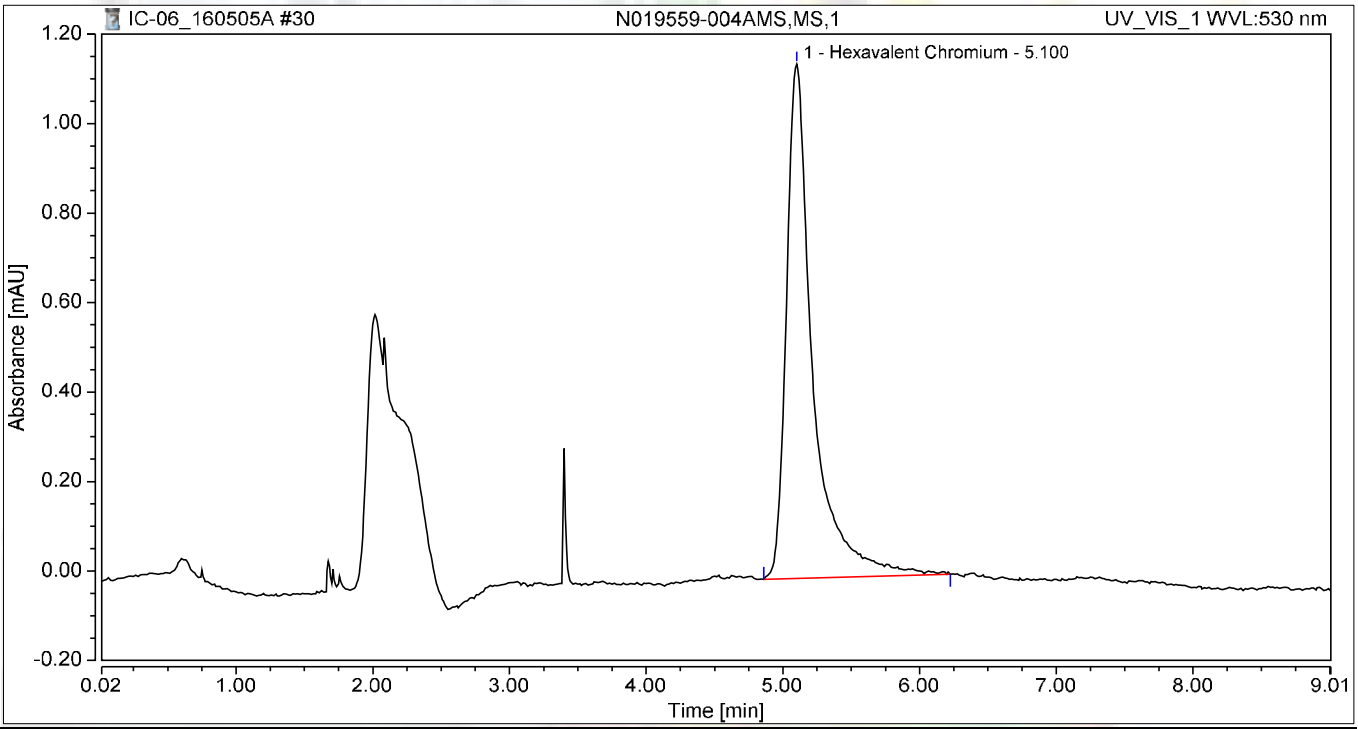
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.019	0.085	64.43	19.99	0.0647
2		6.883	0.011	0.340	35.57	80.01	n.a.
Total:			**0.030**	**0.425**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-004AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

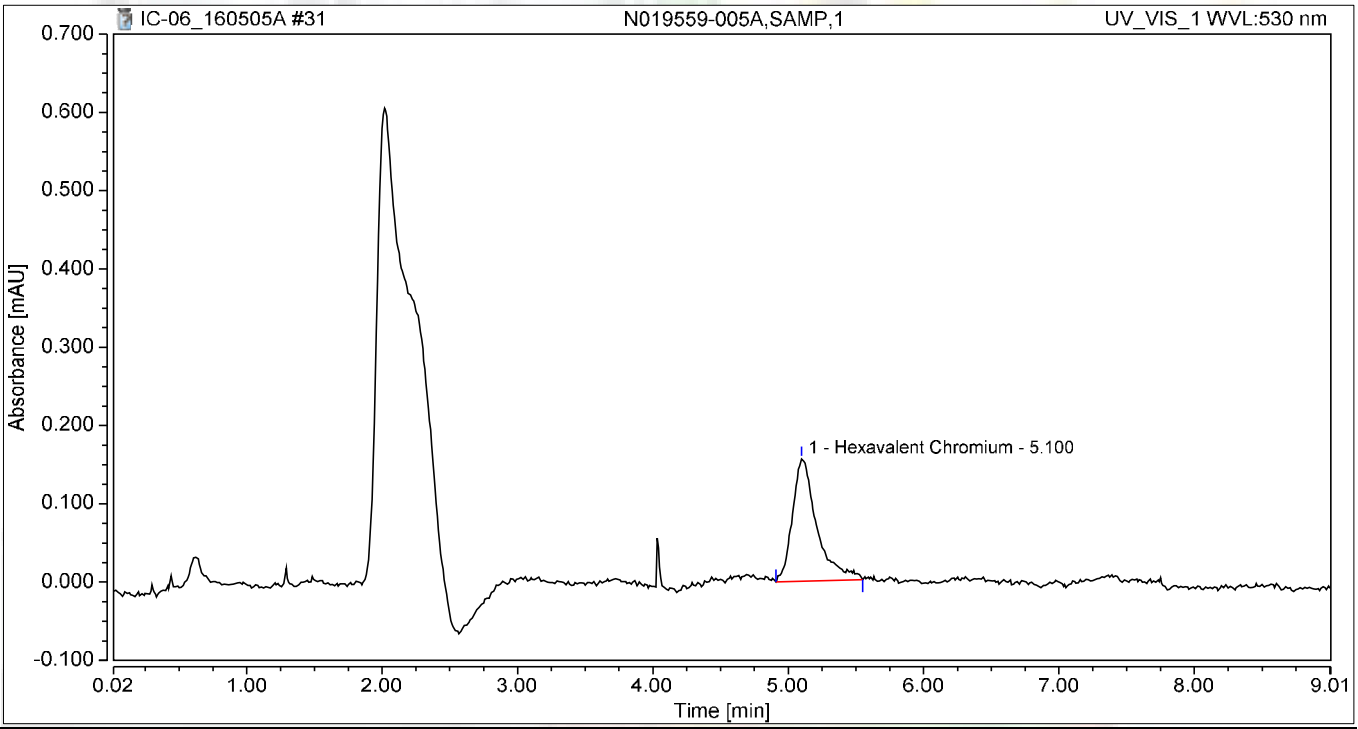
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.257	1.149	100.00	100.00	1.0819
Total:			**0.257**	**1.149**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-005A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

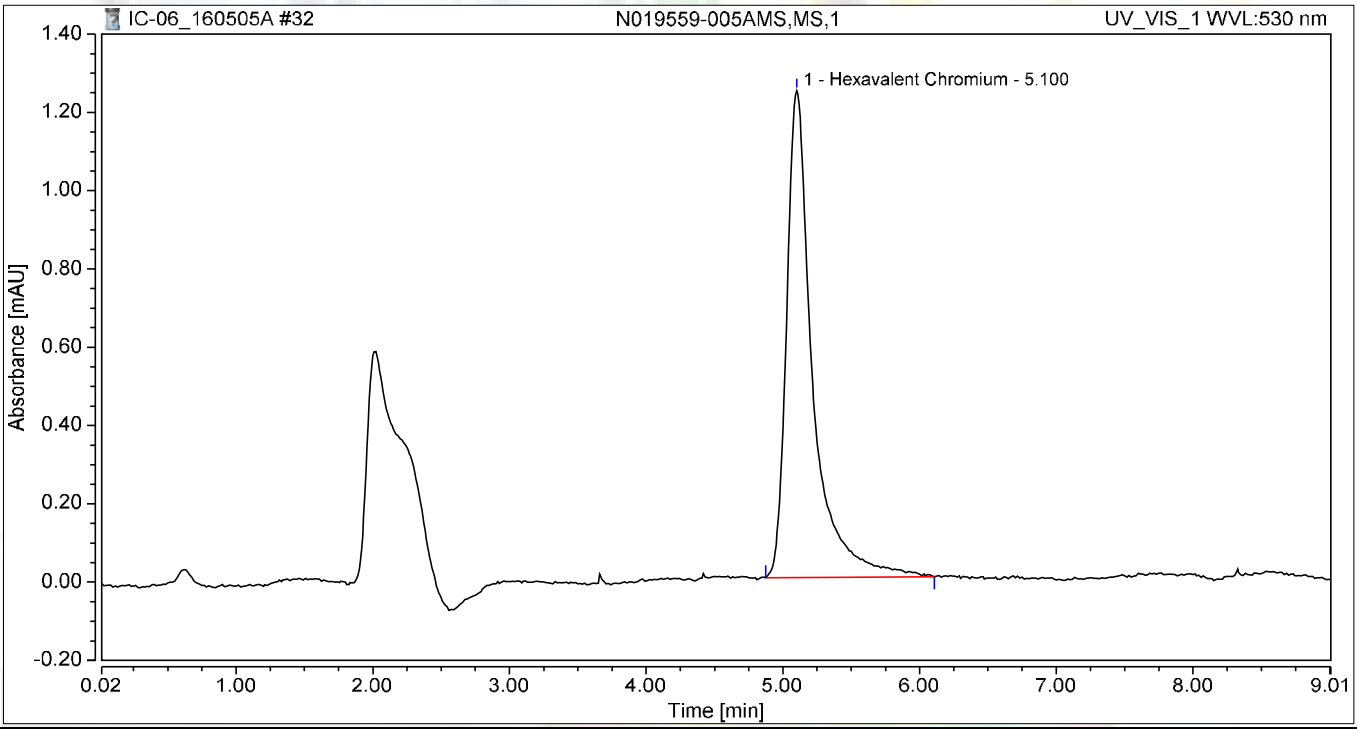
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.033	0.156	100.00	100.00	0.1224
Total:			**0.033**	**0.156**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-005AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

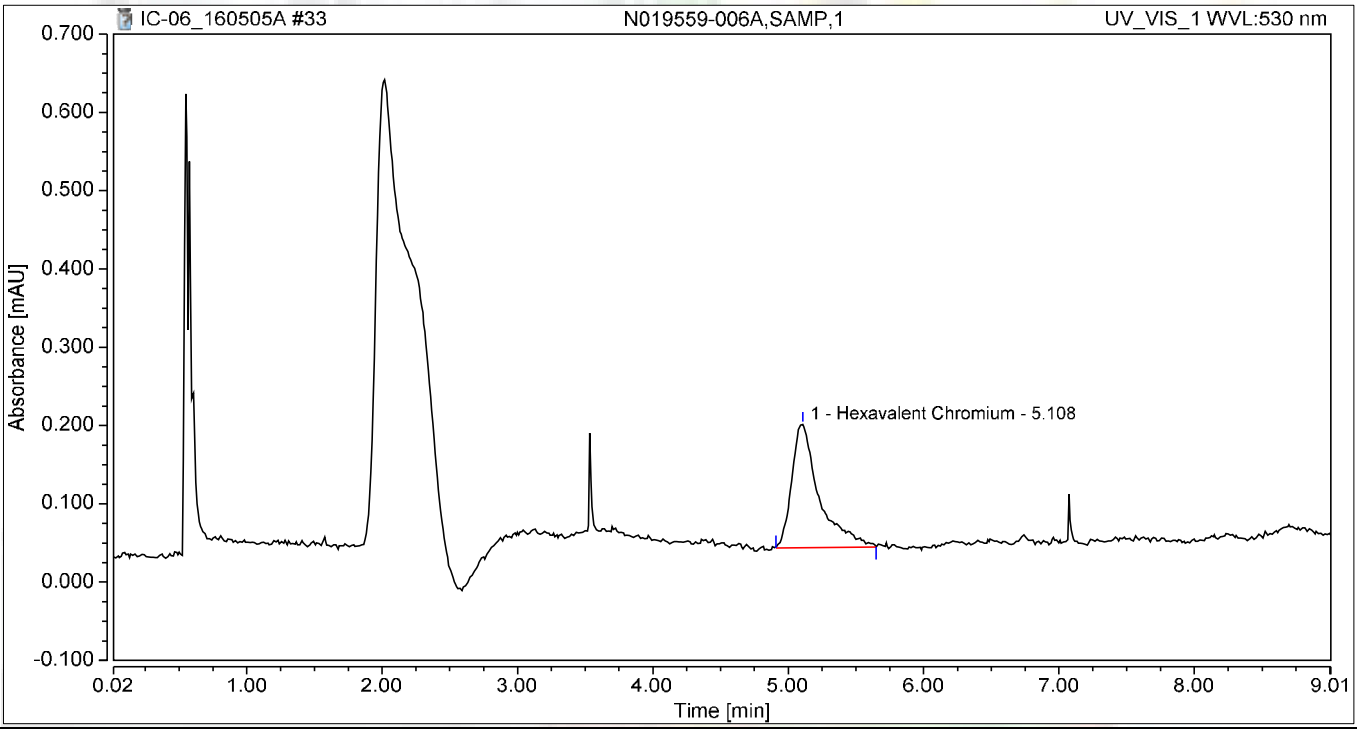
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.274	1.243	100.00	100.00	1.1545
Total:			**0.274**	**1.243**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-006A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

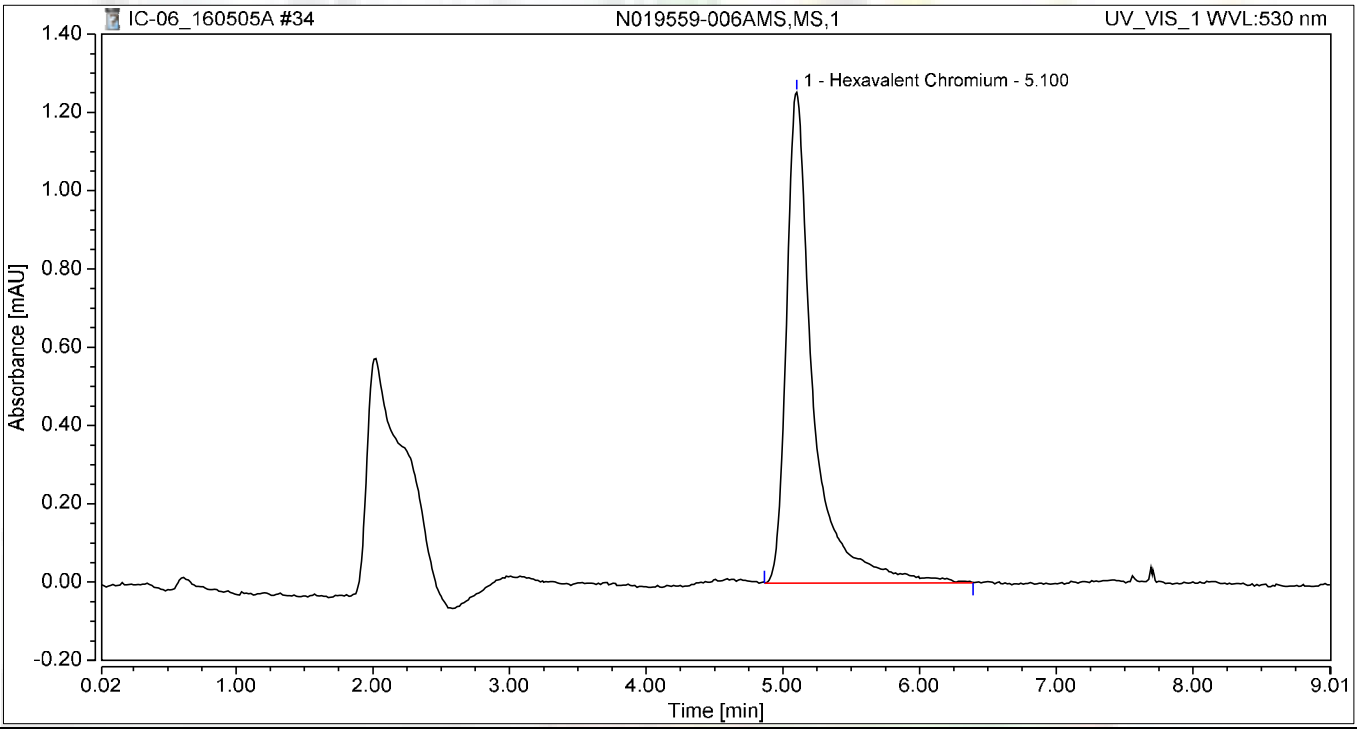
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.037	0.157	100.00	100.00	0.1407
Total:			**0.037**	**0.157**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-006AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

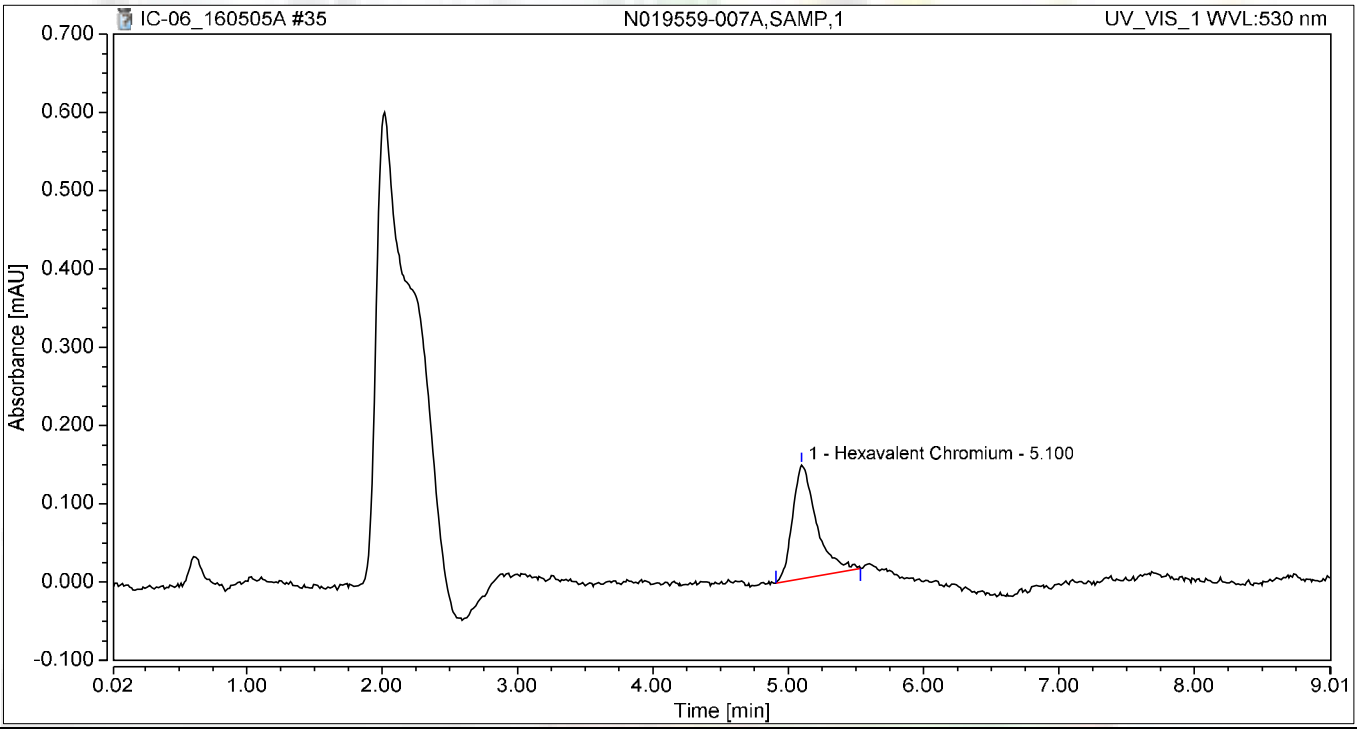
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.285	1.254	100.00	100.00	1.2006
Total:			**0.285**	**1.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-007A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

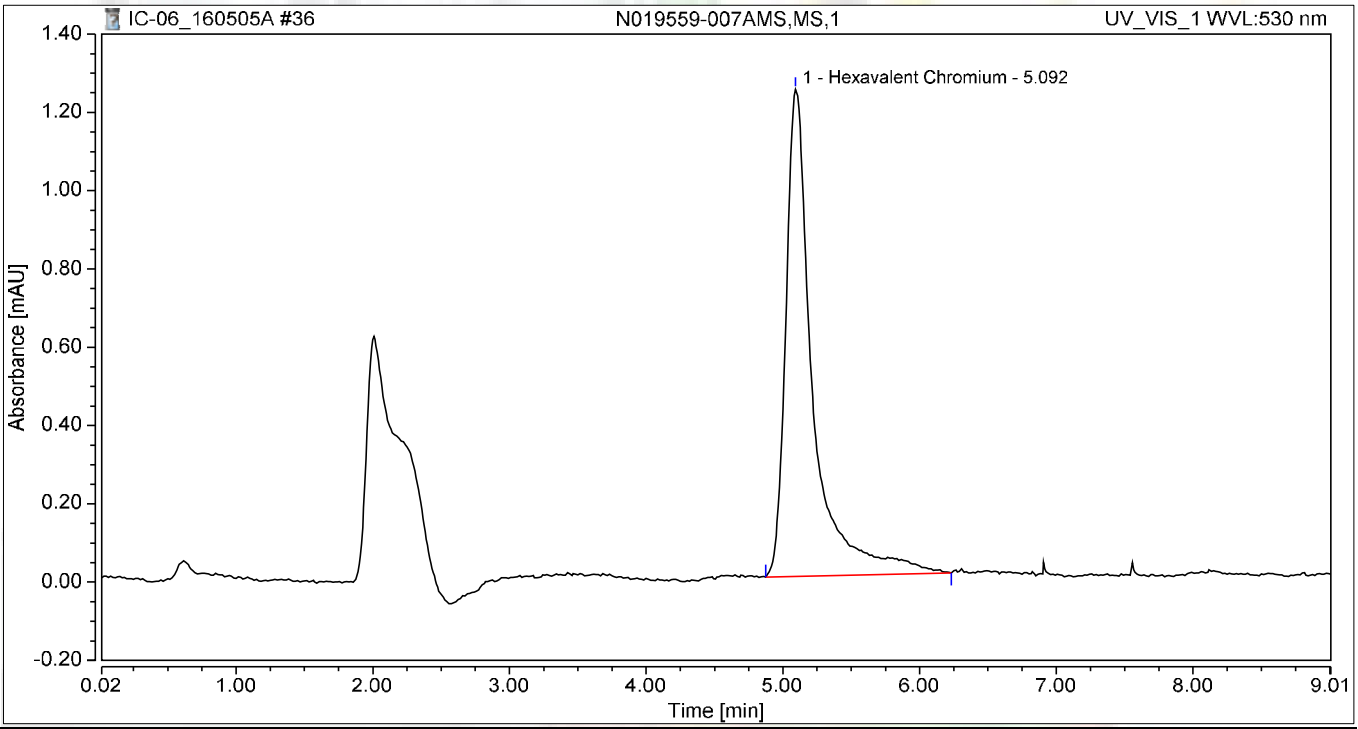
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.030	0.145	100.00	100.00	0.1106
Total:			**0.030**	**0.145**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-007AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

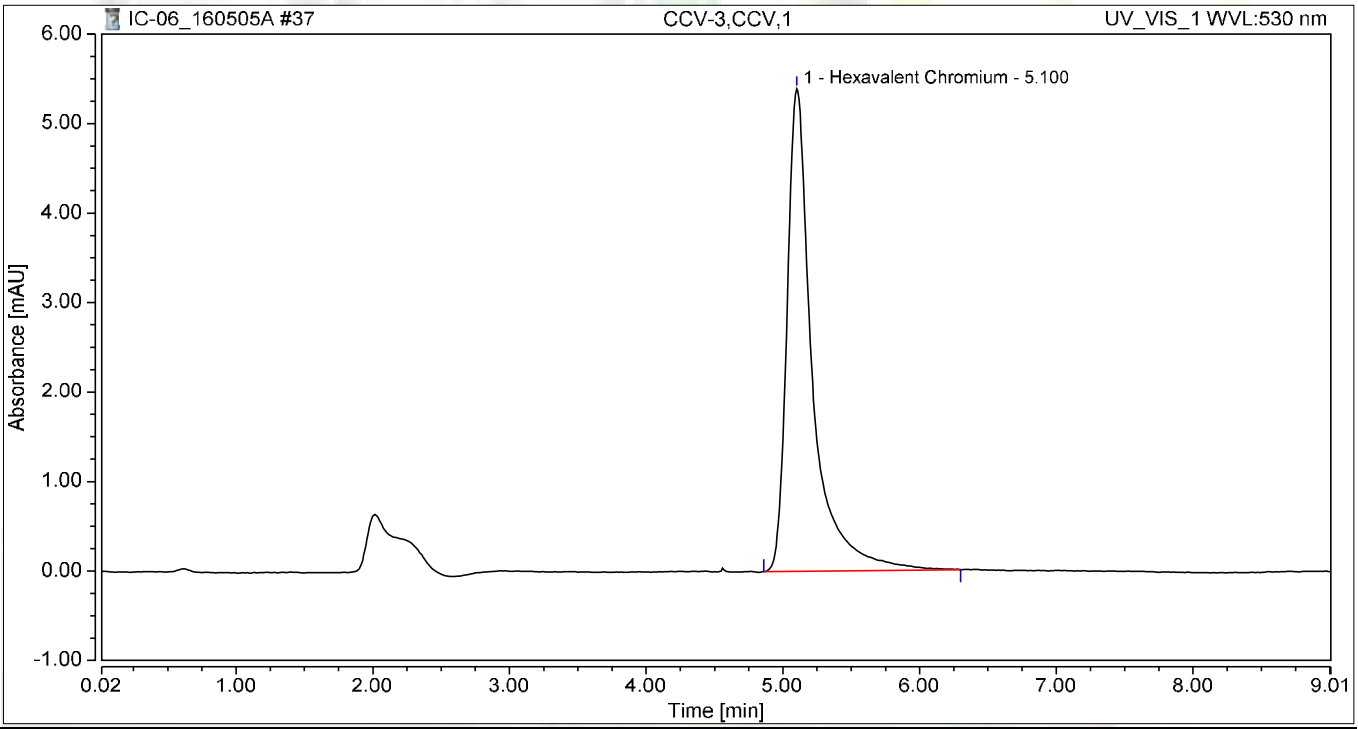
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.285	1.244	100.00	100.00	1.2020
Total:			**0.285**	**1.244**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

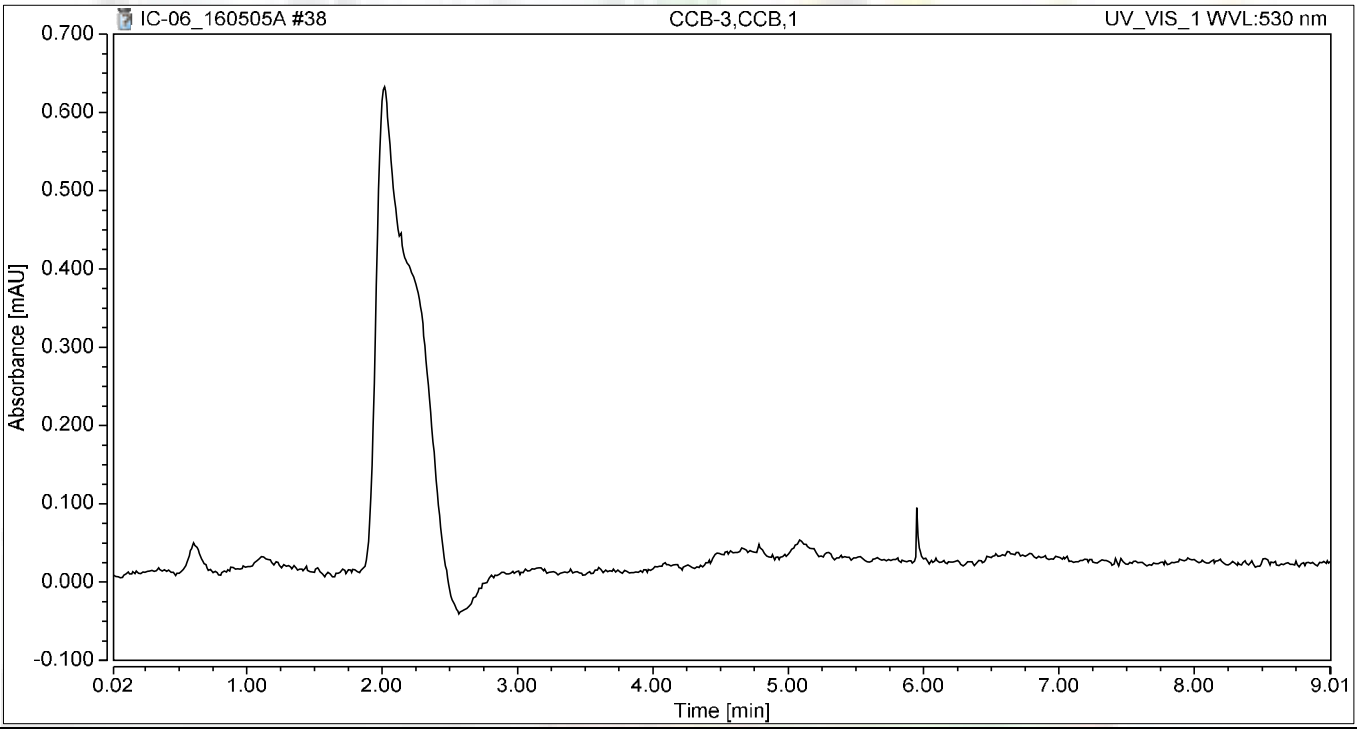
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.165	5.394	100.00	100.00	4.9702
Total:			**1.165**	**5.394**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

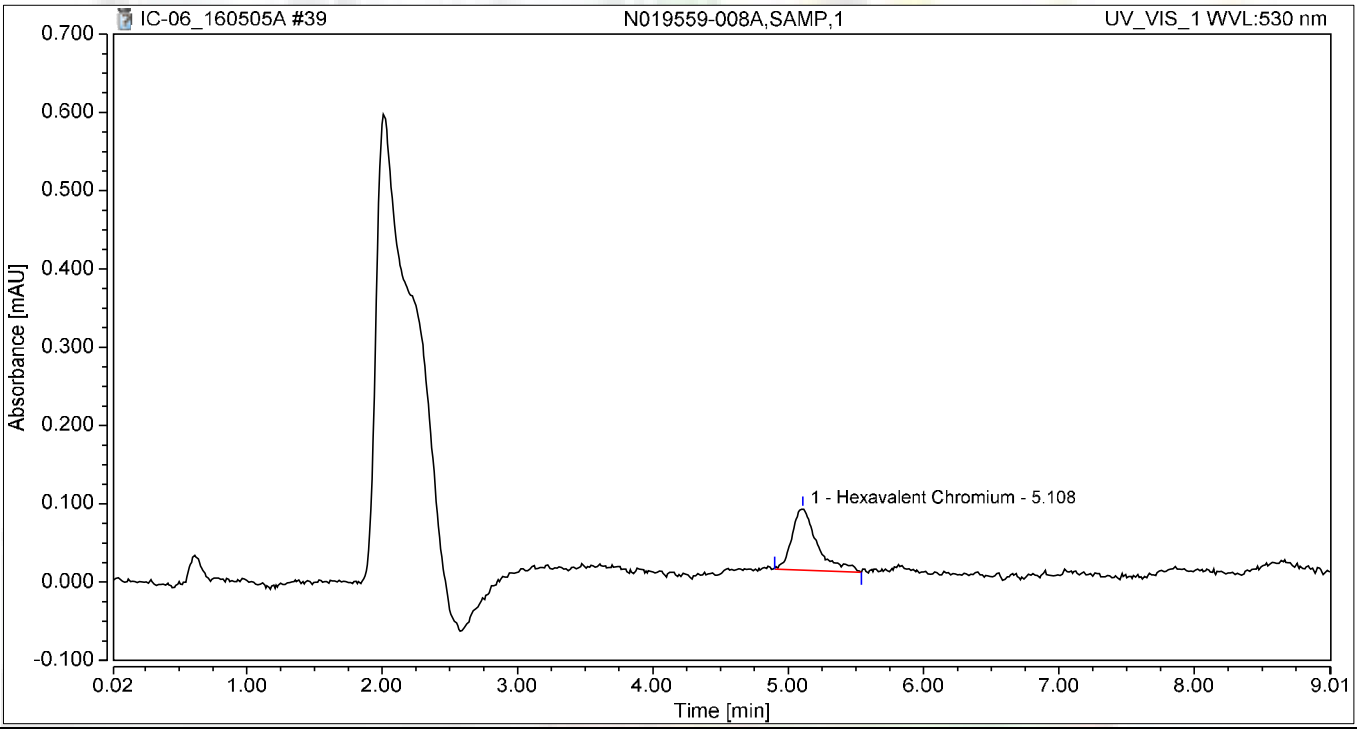
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-008A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

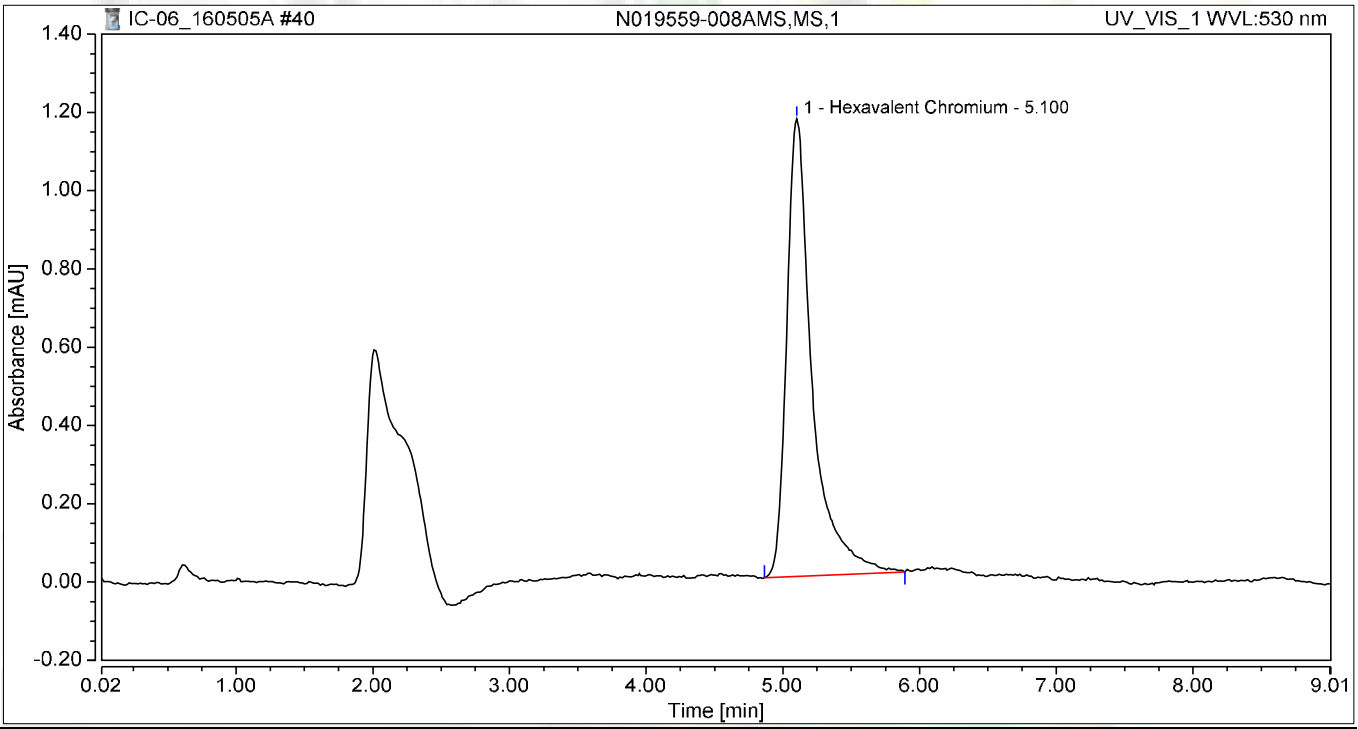
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.017	0.078	100.00	100.00	0.0551
Total:			**0.017**	**0.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-008AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

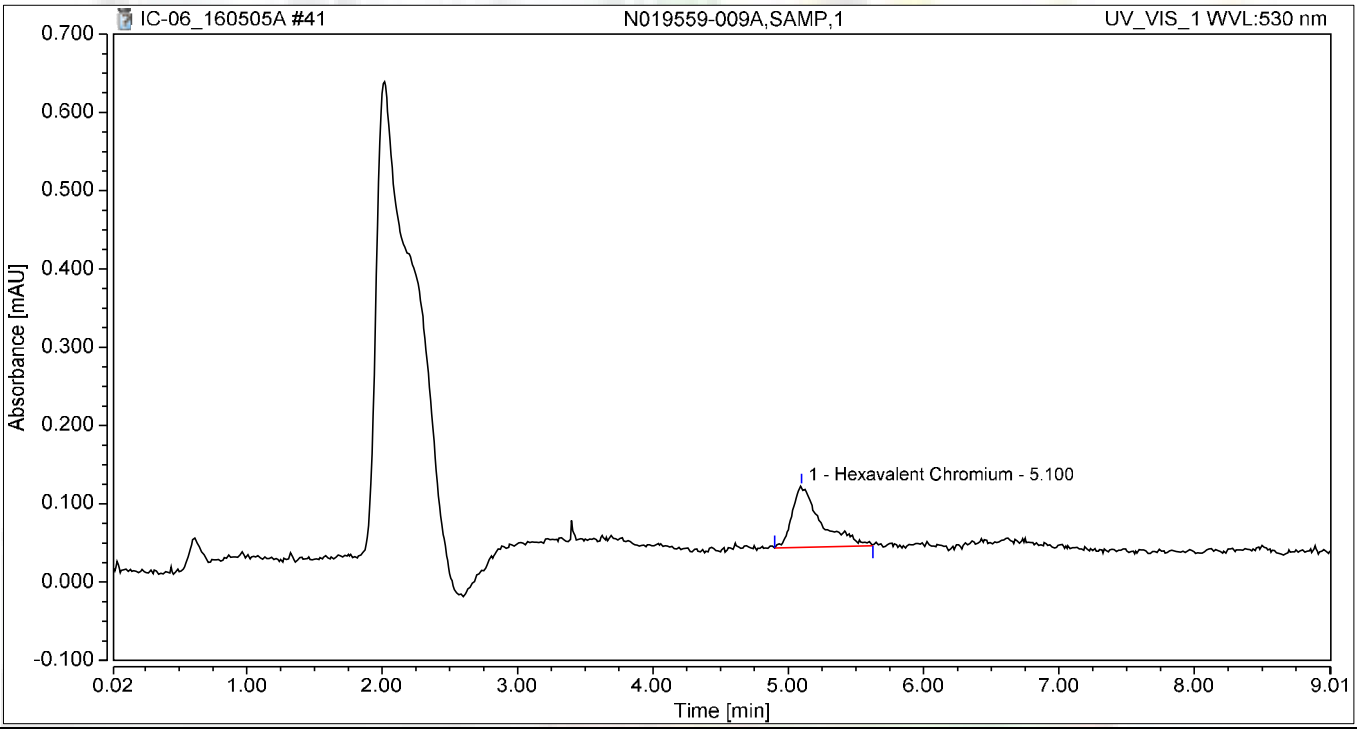
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.252	1.169	100.00	100.00	1.0626
Total:			**0.252**	**1.169**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-009A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

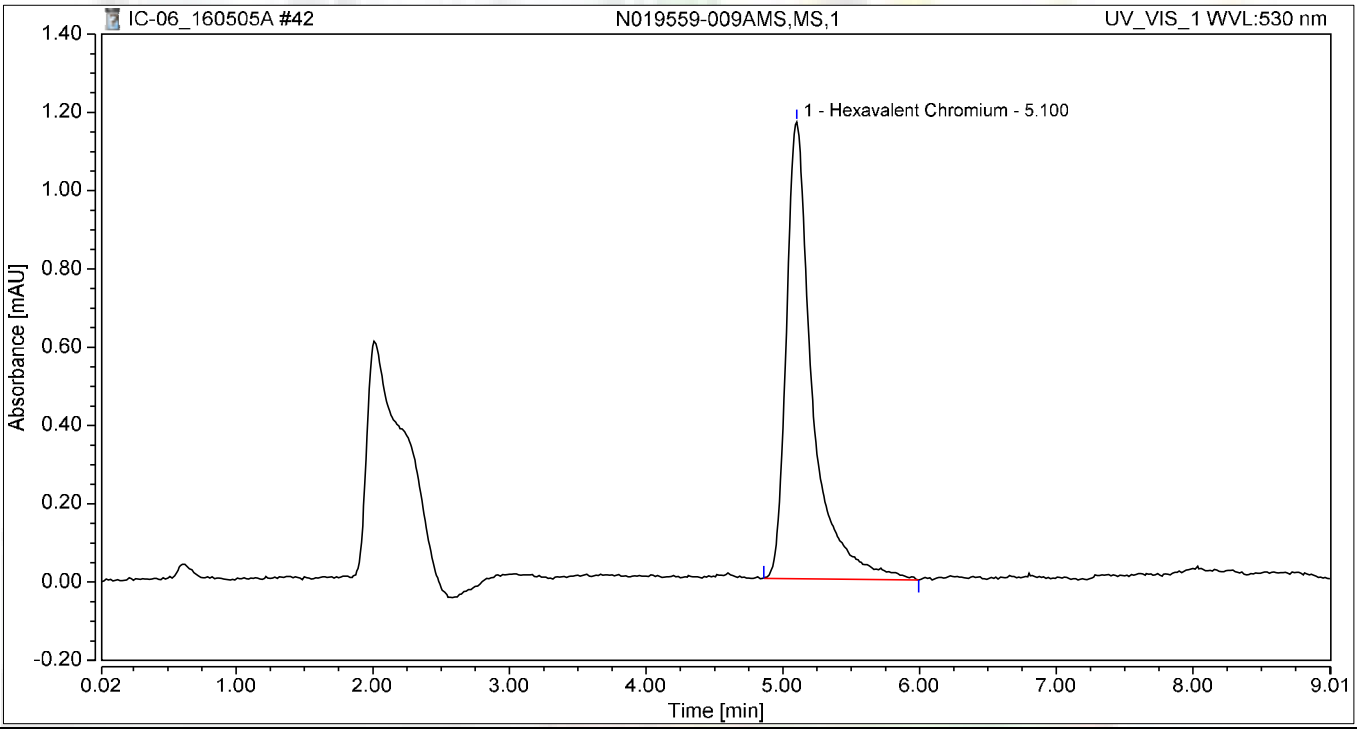
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.020	0.078	100.00	100.00	0.0656
Total:			**0.020**	**0.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-009AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

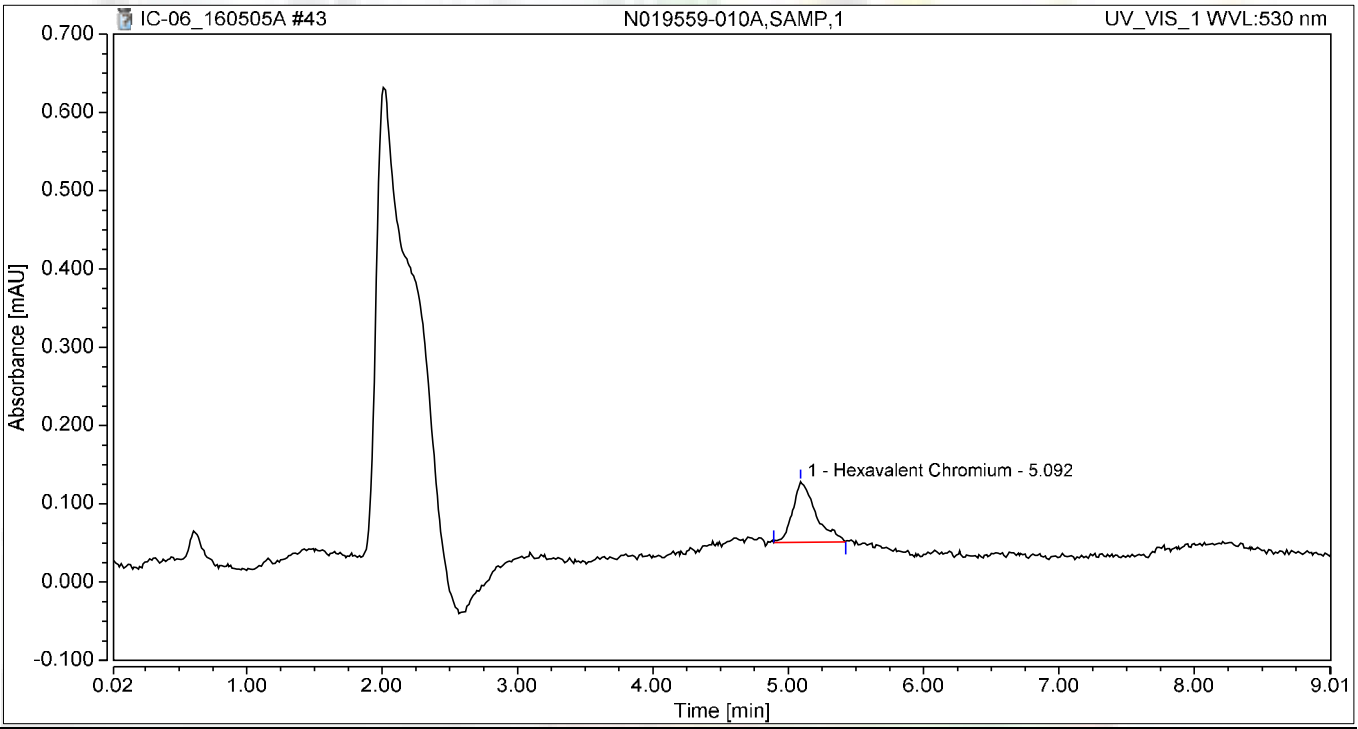
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.258	1.166	100.00	100.00	1.0851
Total:			**0.258**	**1.166**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-010A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

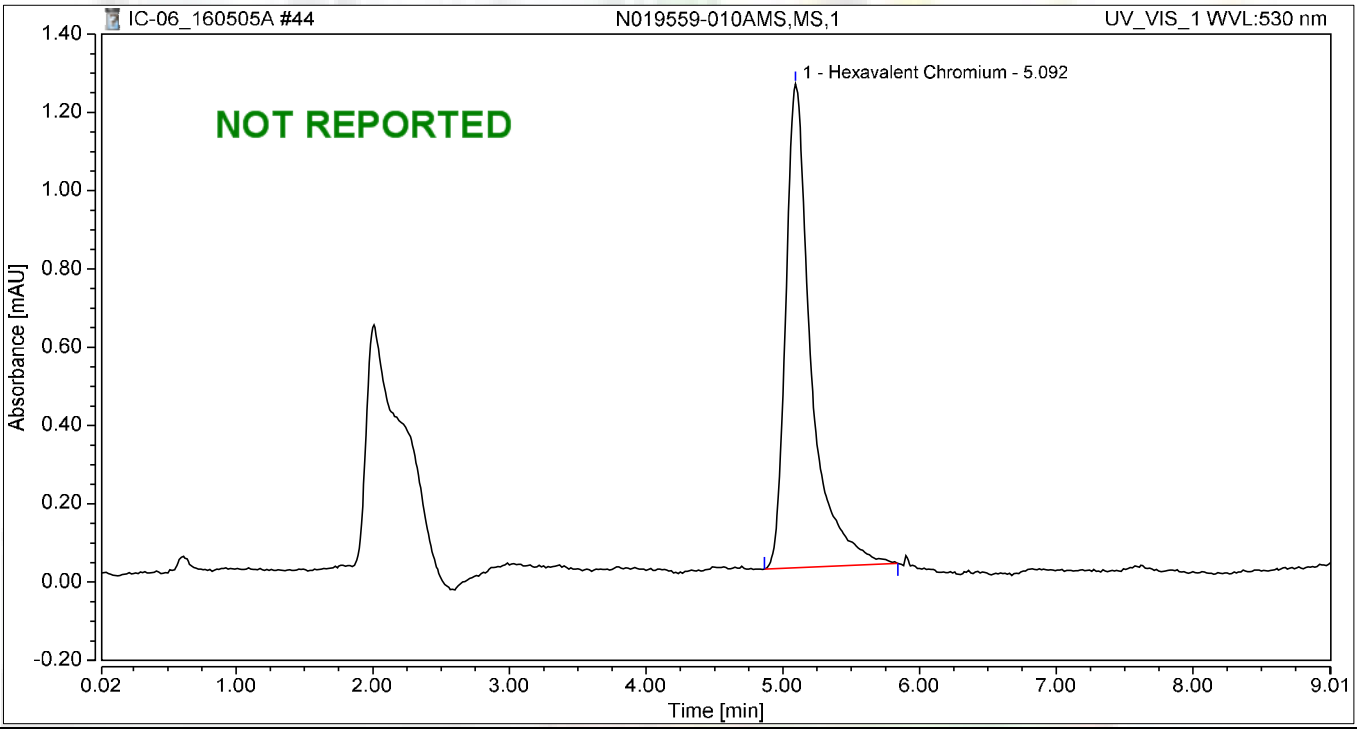
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.015	0.077	100.00	100.00	0.0479
Total:			**0.015**	**0.077**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-010AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

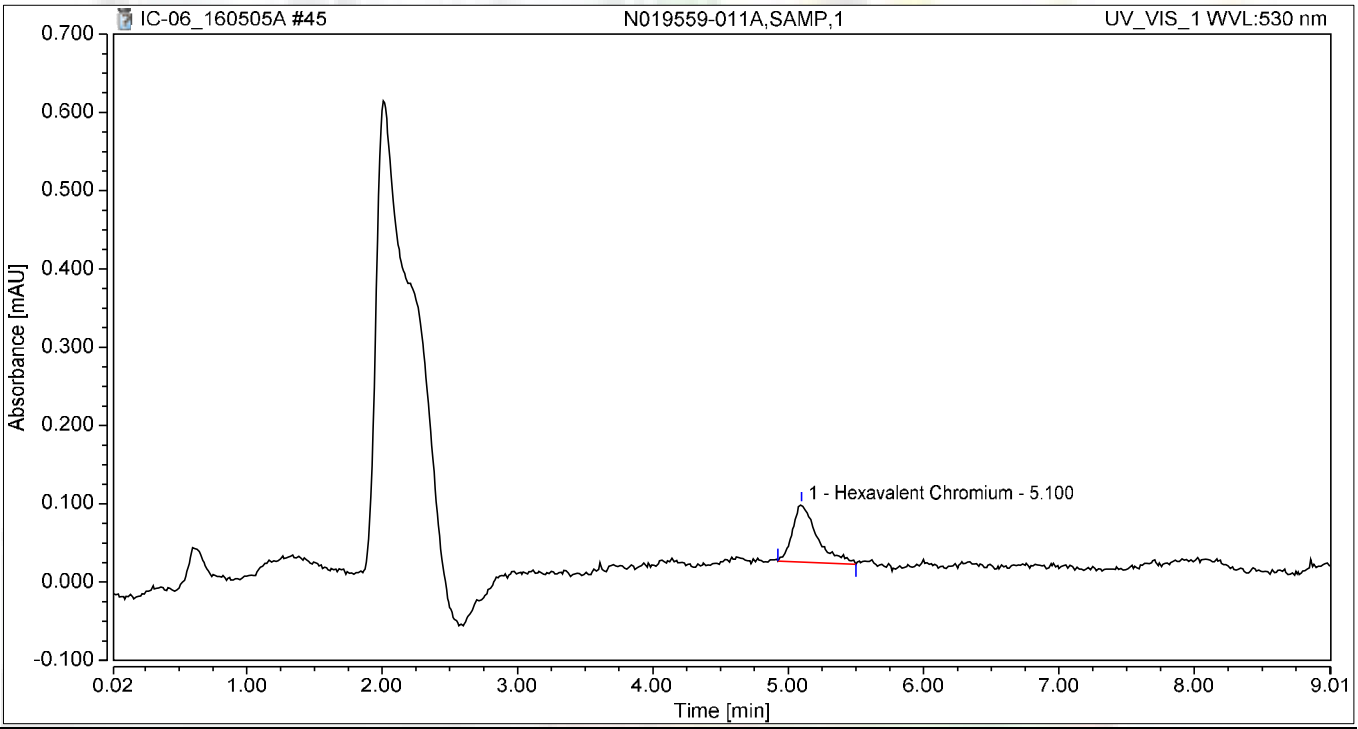
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.265	1.236	100.00	100.00	1.1173
Total:			**0.265**	**1.236**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-011A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

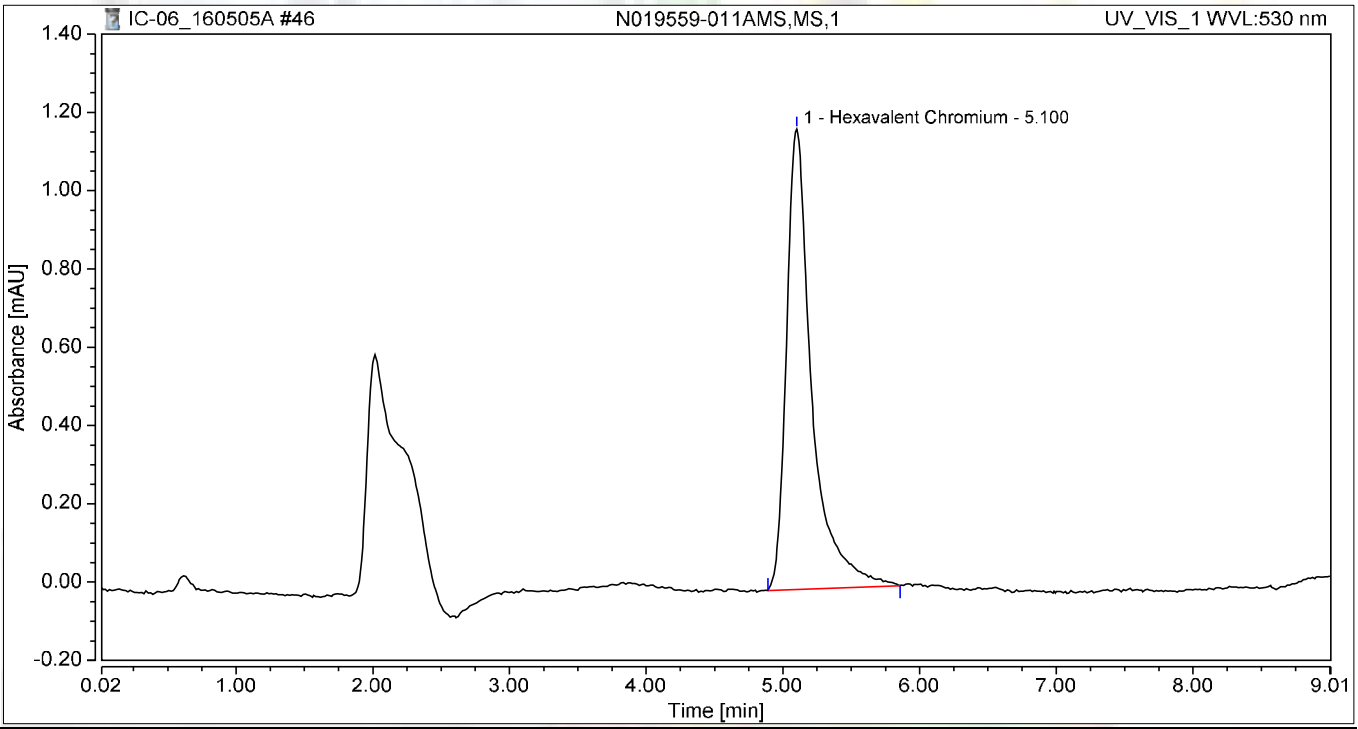
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.016	0.074	100.00	100.00	0.0489
Total:			**0.016**	**0.074**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-011AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

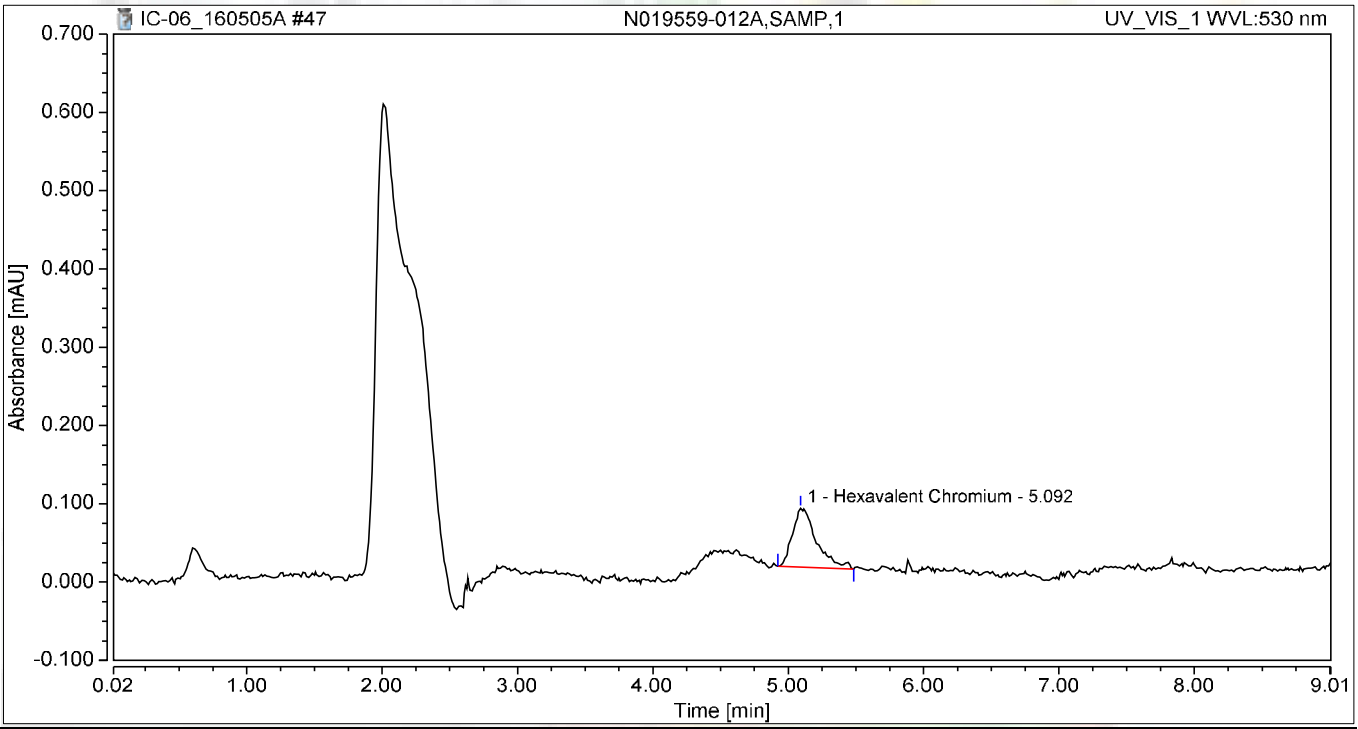
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.253	1.176	100.00	100.00	1.0636
Total:			**0.253**	**1.176**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-012A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

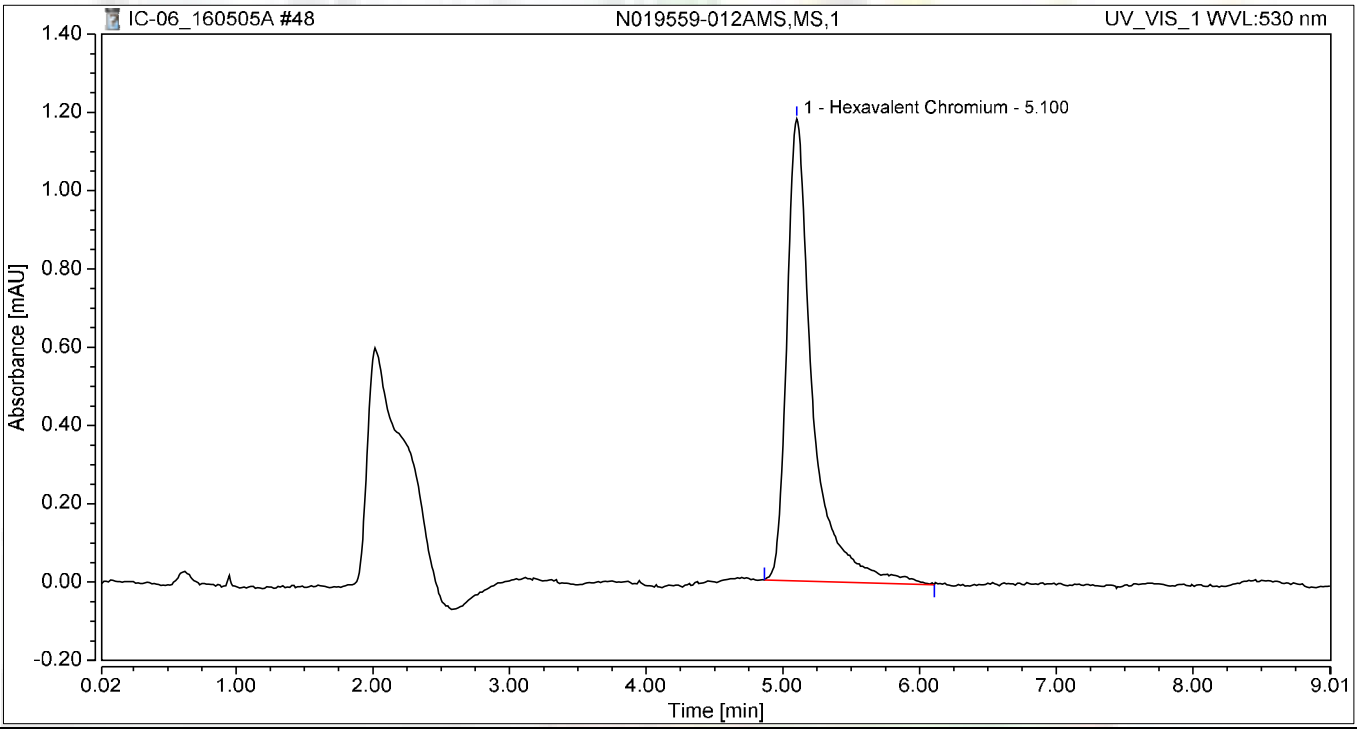
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.015	0.075	100.00	100.00	0.0482
Total:			**0.015**	**0.075**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-012AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

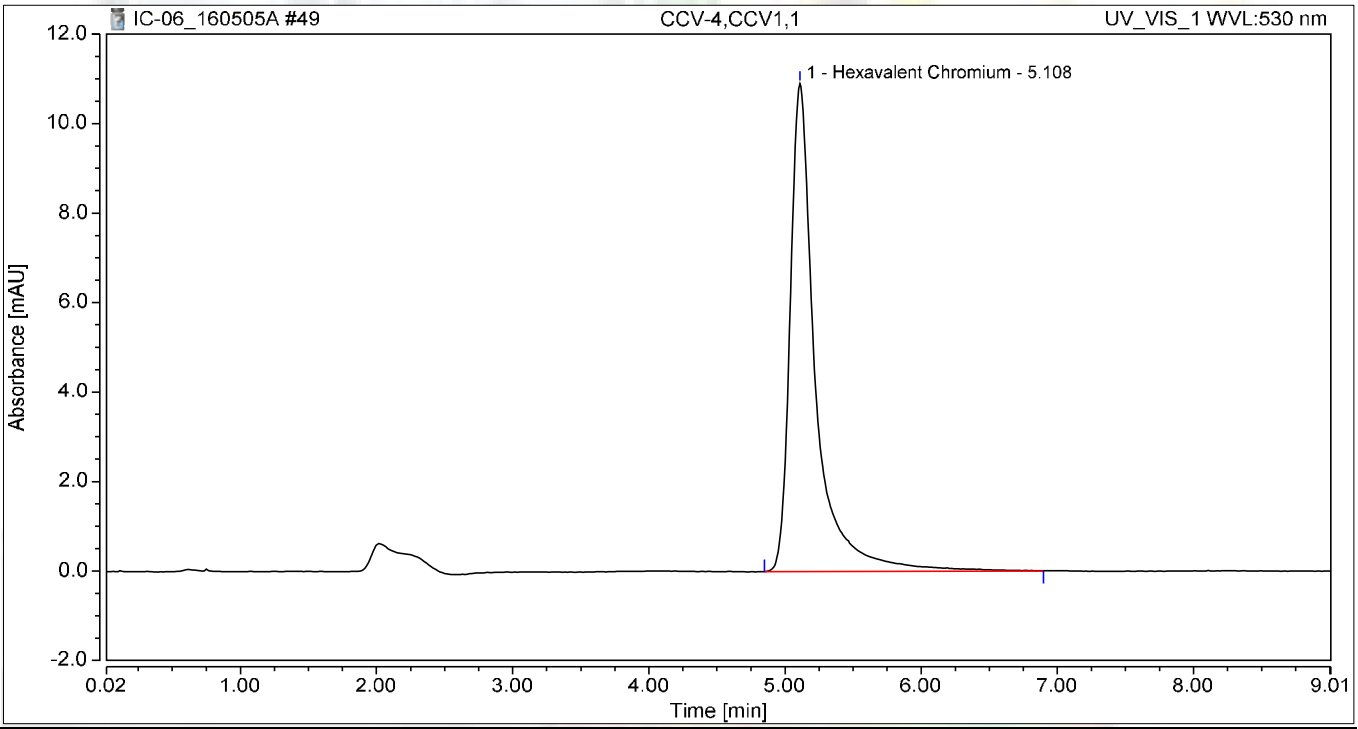
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.257	1.180	100.00	100.00	1.0841
Total:			**0.257**	**1.180**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

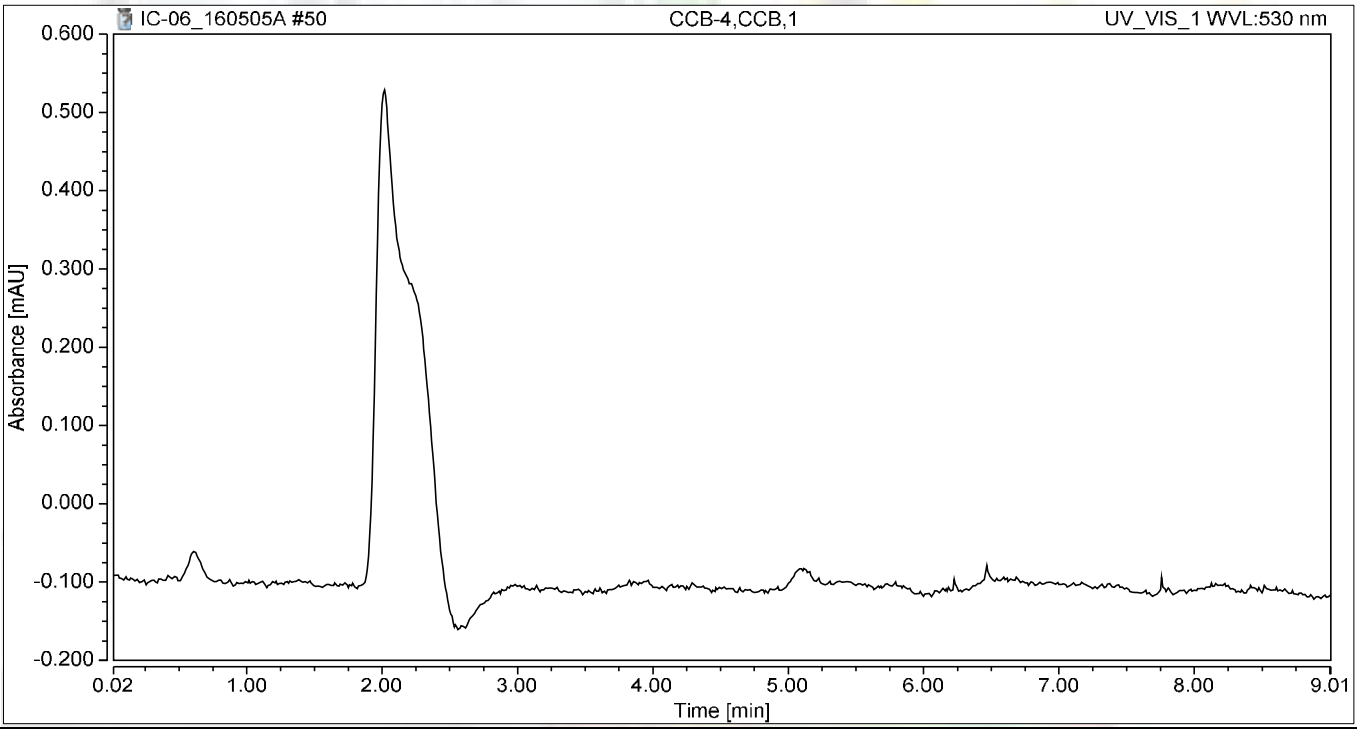
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.360	10.908	100.00	100.00	10.0872
Total:			**2.360**	**10.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 15:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

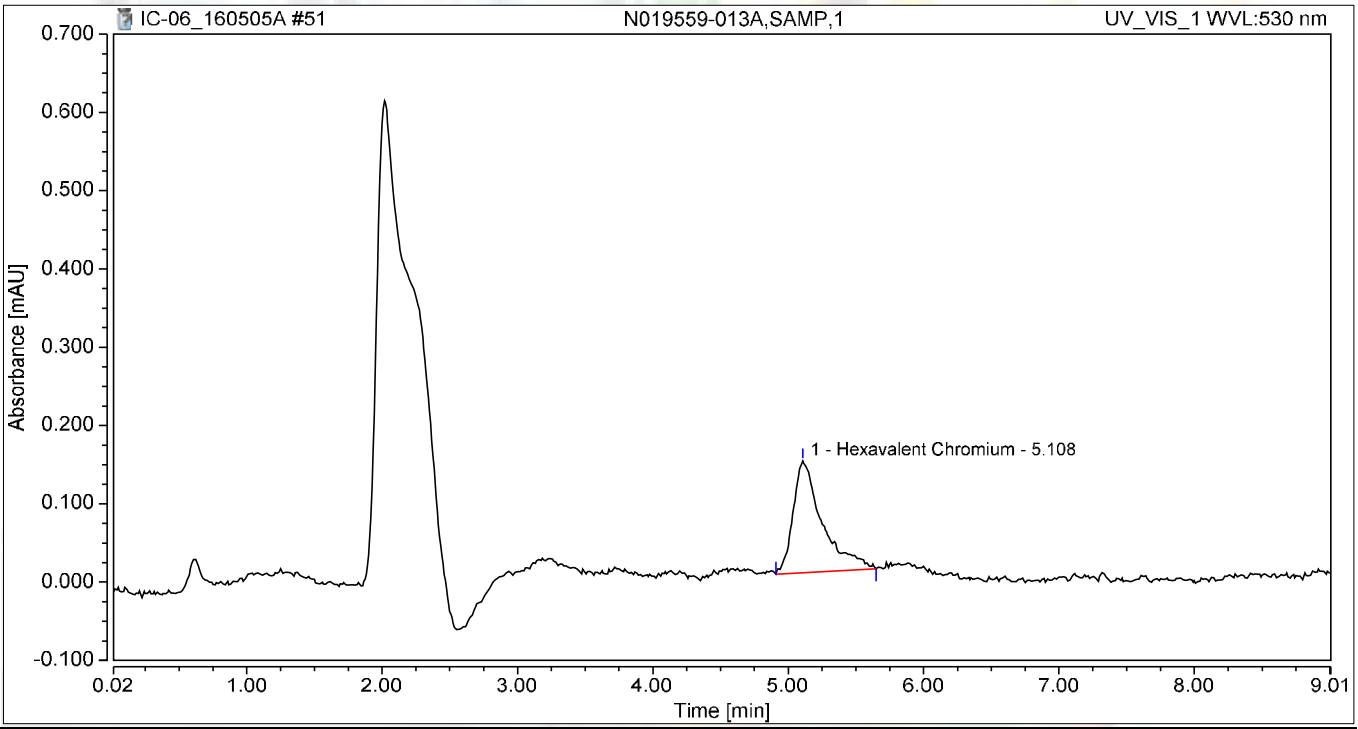
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-013A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

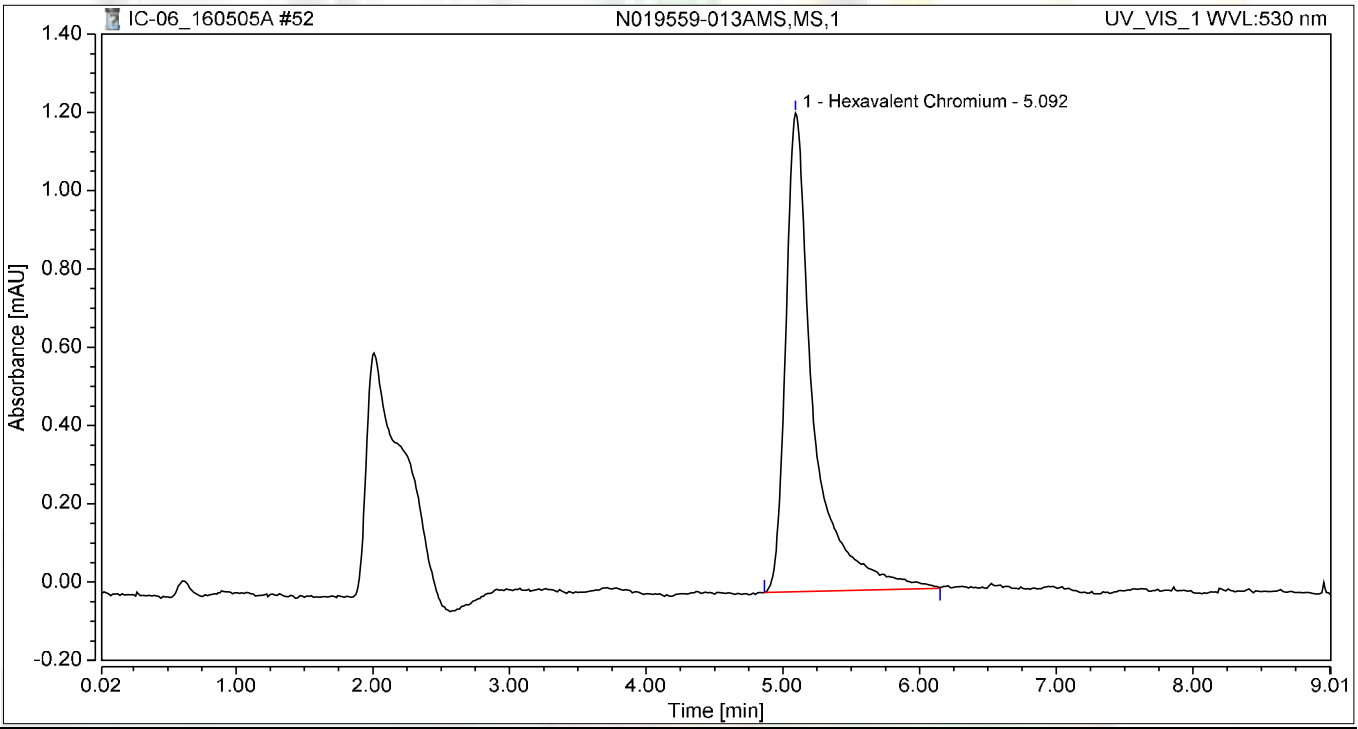
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.036	0.143	100.00	100.00	0.1347
Total:			**0.036**	**0.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-013AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

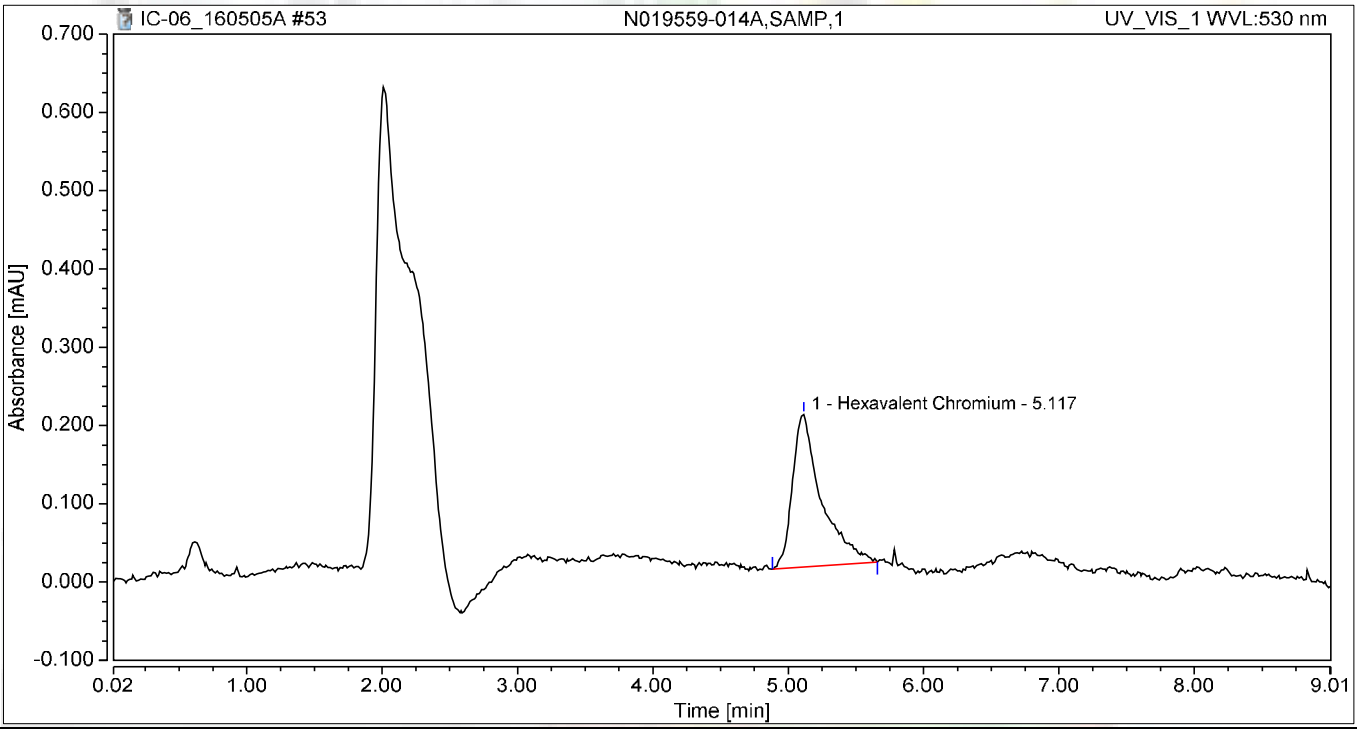
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.288	1.222	100.00	100.00	1.2146
Total:			**0.288**	**1.222**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-014A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

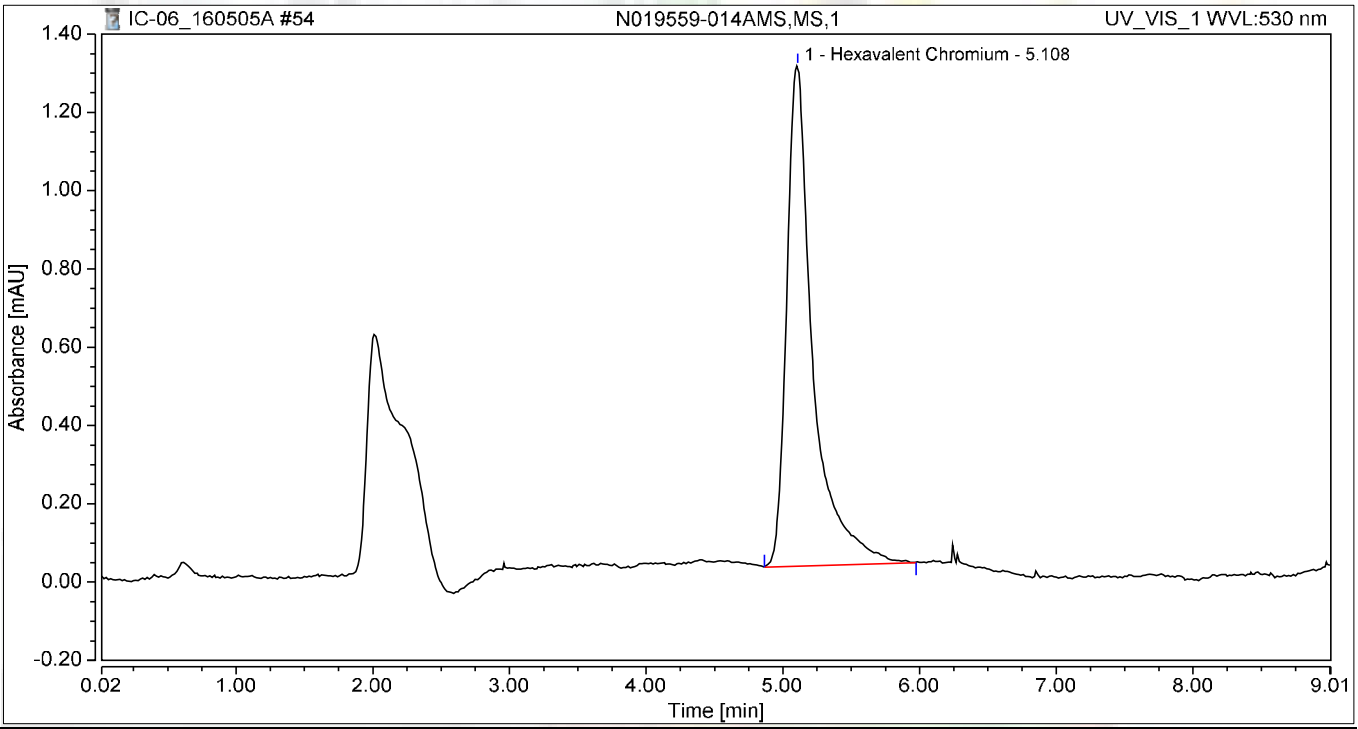
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.049	0.194	100.00	100.00	0.1899
Total:			**0.049**	**0.194**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-014AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

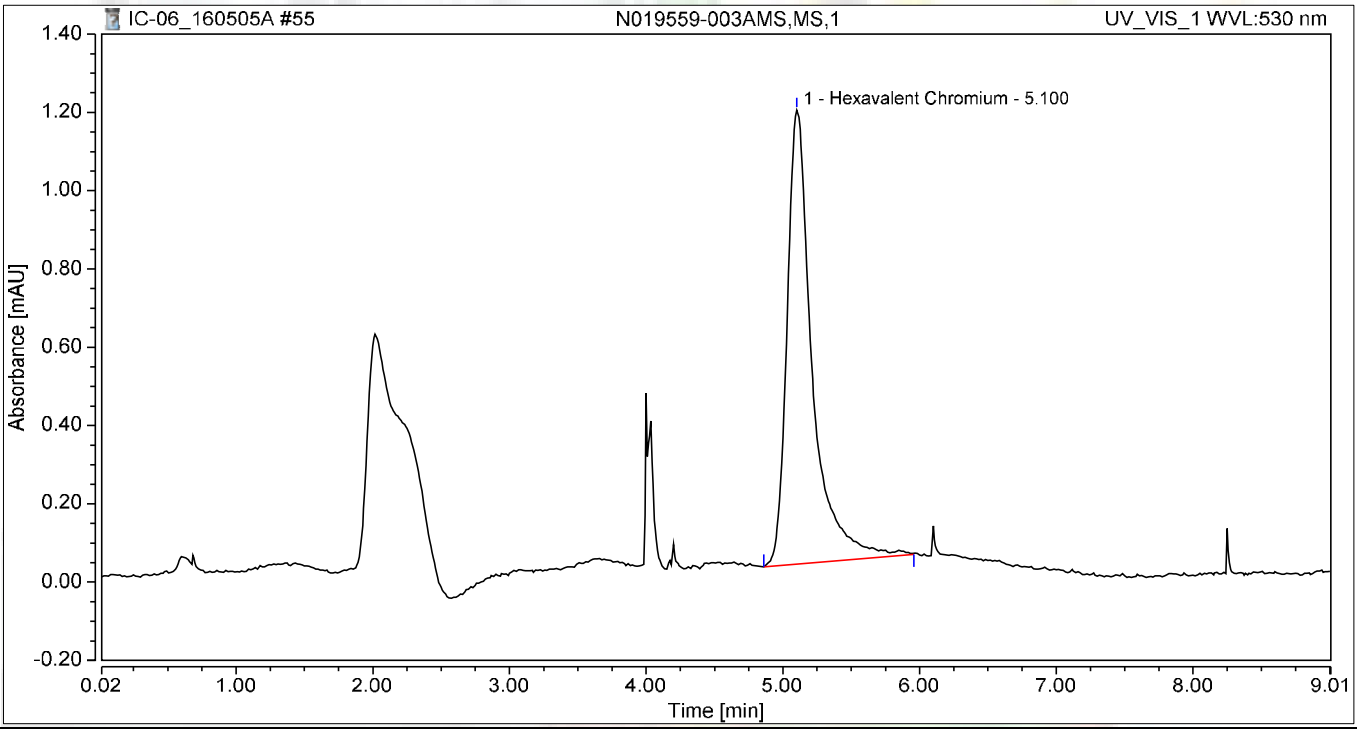
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.284	1.278	100.00	100.00	1.1971
Total:			**0.284**	**1.278**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-003AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 16:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

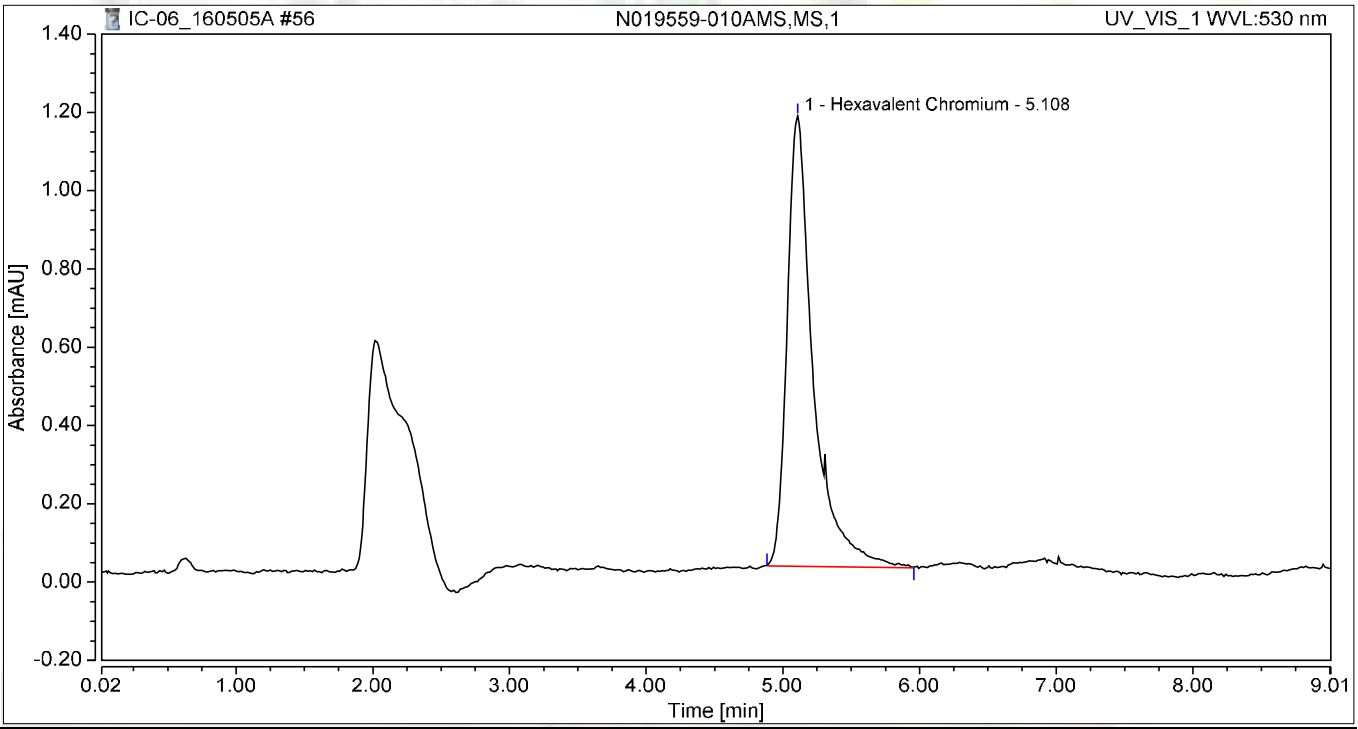
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.248	1.159	100.00	100.00	1.0435
Total:			**0.248**	**1.159**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019559-010AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 17:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

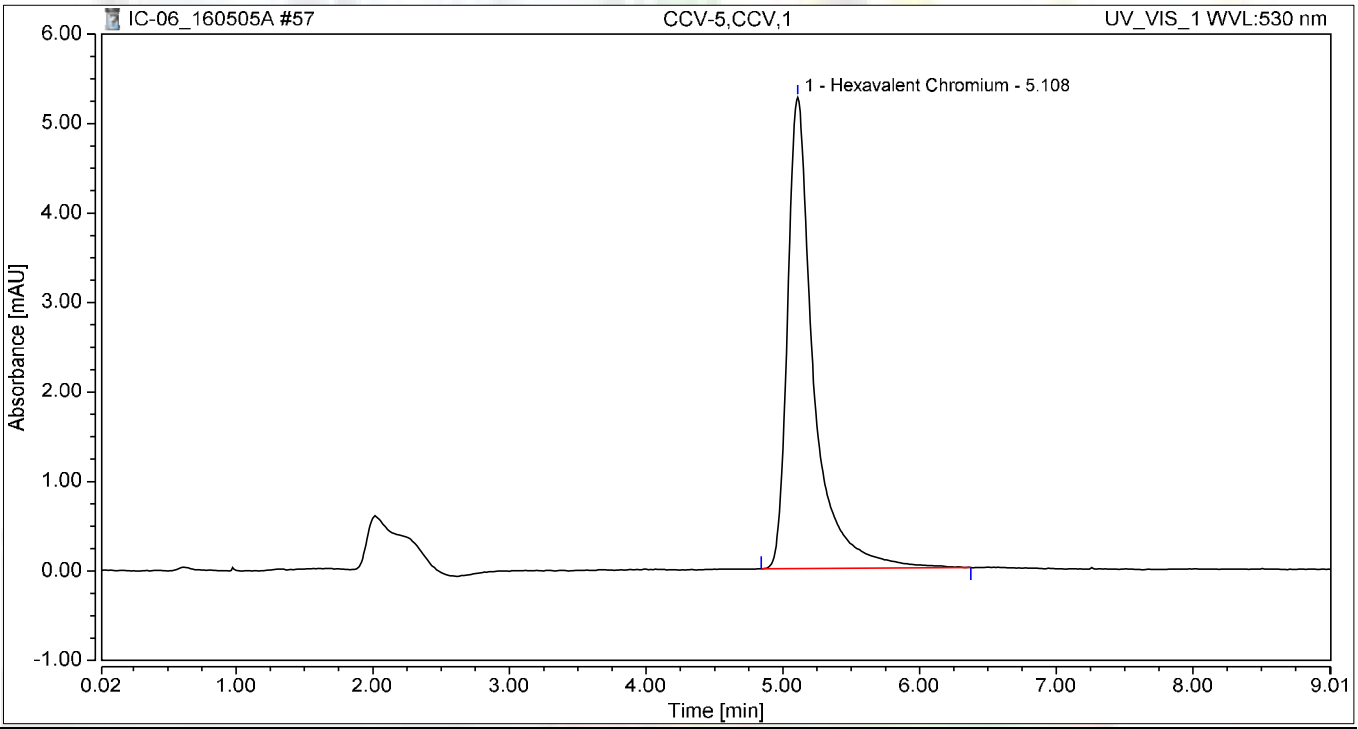
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.255	1.149	100.00	100.00	1.0741
Total:			**0.255**	**1.149**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

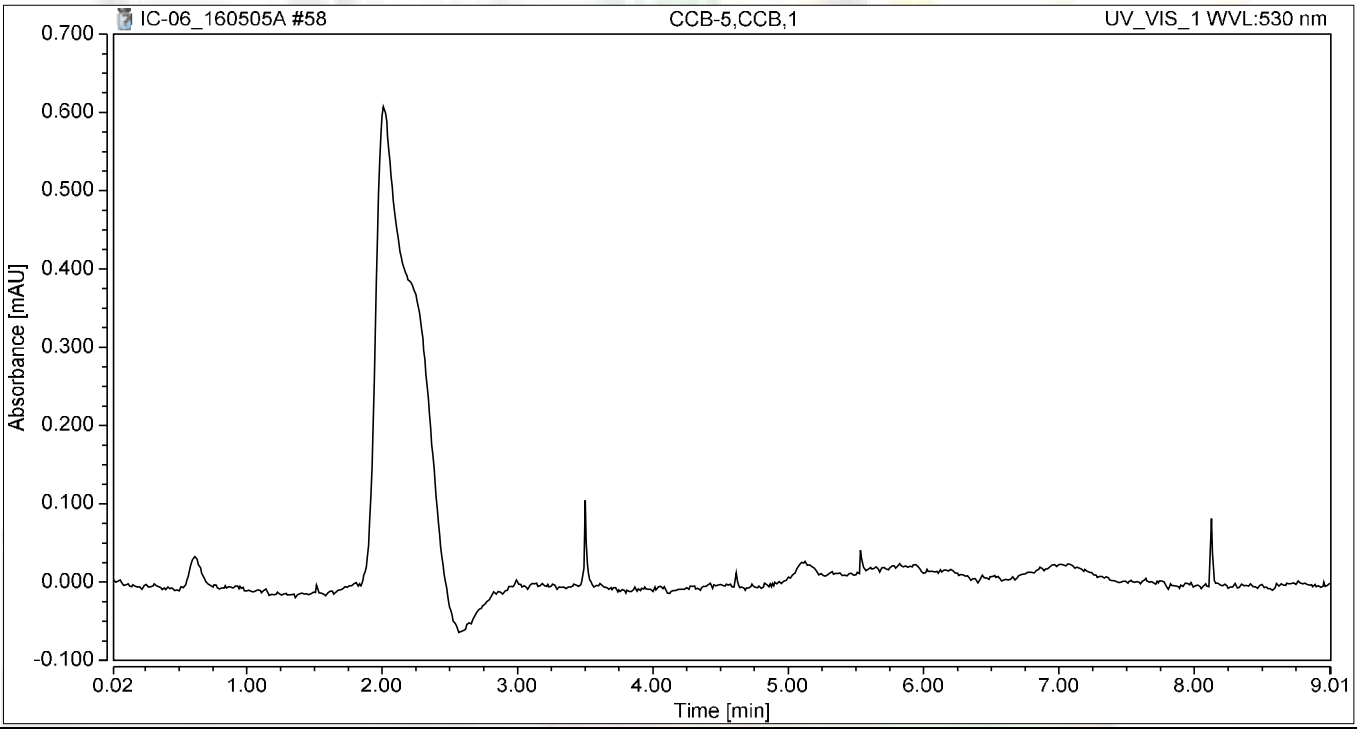
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.157	5.265	100.00	100.00	4.9366
Total:			**1.157**	**5.265**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/16 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108308 **Analyst:** REB

ASSET #: N019559 **Date Analyzed:** 5/7/2016

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Rob 05/13/2016 Date: —

2nd Level Reviewer 5/16/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N019559-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.4200*1

= 0.4200mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.42

Reb 05/13/2016

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

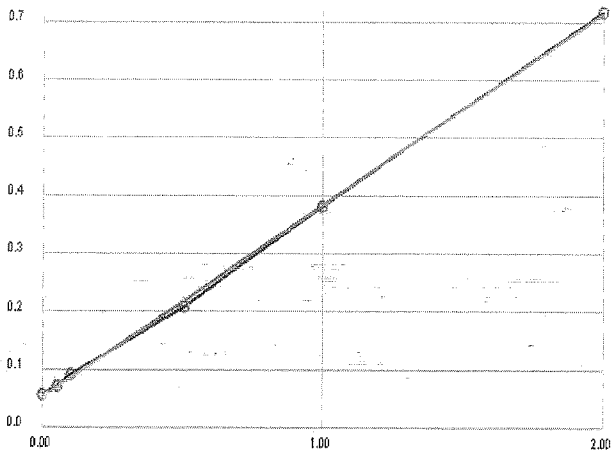
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3303x + 0.0529
Correlation	.999815

Calibrant	Energy	Set	Conc
1	0.0543	0.0000	0.0043
2	0.0707	0.0500	0.0540
3	0.0912	0.1000	0.1160
4	0.2093	0.5000	0.4736
5	0.3808	1.0000	0.9929
6	0.7165	2.0000	2.0093



Notes:

2% CuSO4 - R160507A
R1 Buffer- R160507B
R2 Coloring Rgt. - R160507C

1° std- ISST-160211J
2° std- ISST-150730E

Rob 05/10/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108308**
Client ID: **ICV**	Batch ID: **R108308**	TestNo: **SM4500-NO3**		Analysis Date: **5/7/2016**	SeqNo: **2318755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108308**
Client ID: **CCV**	Batch ID: **R108308**	TestNo: **SM4500-NO3**		Analysis Date: **5/7/2016**	SeqNo: **2318768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108308**
Client ID: **CCV**	Batch ID: **R108308**	TestNo: **SM4500-NO3**		Analysis Date: **5/7/2016**	SeqNo: **2318782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.505	0.050	0.5000	0	101	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108308**
Client ID: **CCV**	Batch ID: **R108308**	TestNo: **SM4500-NO3**		Analysis Date: **5/7/2016**	SeqNo: **2318792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.453	0.050	0.5000	0	90.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:		RunNo:	**108308**
Client ID:	**ICB**	Batch ID:	**R108308**	TestNo:	**SM4500-NO3**			Analysis Date:	**5/7/2016**	SeqNo:	**2318757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	**CCB-1**	SampType:	**CCB**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:		RunNo:	**108308**
Client ID:	**CCB**	Batch ID:	**R108308**	TestNo:	**SM4500-NO3**			Analysis Date:	**5/7/2016**	SeqNo:	**2318769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:		RunNo:	**108308**
Client ID:	**CCB**	Batch ID:	**R108308**	TestNo:	**SM4500-NO3**			Analysis Date:	**5/7/2016**	SeqNo:	**2318783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:		RunNo:	**108308**
Client ID:	**CCB**	Batch ID:	**R108308**	TestNo:	**SM4500-NO3**			Analysis Date:	**5/7/2016**	SeqNo:	**2318793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-07-2016 18:35
Time end: 05-07-2016 21:27

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	20:47:17	0.0134		0.0573
2	<BLANK>	20:48:18	0.0082		0.0556
3	<CAL1>	20:49:12	0.0043	[0]	0.0543
4	<CAL2>	20:50:08	0.0540	[0.05]	0.0707
5	<CAL3>	20:51:03	0.1160	[0.1]	0.0912
6	<CAL4>	20:52:03	0.4736	[0.5]	0.2093
7	<CAL5>	20:52:59	0.9929	[1]	0.3808
8	<CAL6>	20:54:00	2.0093	[2]	0.7165
9	,BLANK,BLANK,1,	20:54:56	0.0373		0.0652
10	,ICV,ICV,1,	20:55:50	0.5021		0.2187
11	,ICB,ICB,1,	20:56:51	0.0164		0.0583
12	,MB-H2O,MBLK,1,	20:57:47	0.0049		0.0545
13	,LCS-H2O,LCS,1,	20:58:41	0.4918		0.2153
14	,N019519-013C,SAMP,1,	20:59:42	0.0358		0.0647
15	,N019519-013CDUP,DUP,1,	21:00:38	0.0031		0.0539
16	,N019519-013CMS,MS,1,	21:01:33	0.5005		0.2182
17	,N019519-013CMSD,MSD,1,	21:02:33	0.4933		0.2158
18	,N019559-001E,SAMP,1,	21:03:29	0.4200		0.1916
19	,N019559-002E,SAMP,1,	21:04:25	0.4236		0.1928
20	,N019559-003E,SAMP,1,	21:05:25	0.3961		0.1837
21	,BLANK,BLANK,1	21:06:20	0.0152		0.0579
22	,CCV-1,CCV,1,	21:07:16	0.4930		0.2157
23	,CCB-1,CCB,1,	21:08:17	0.0146		0.0577
24	,N019559-004E,SAMP,1,	21:09:11	0.4115		0.1888
25	,N019559-005E,SAMP,1,	21:10:13	0.4158		0.1902
26	,N019559-006E,SAMP,1,	21:11:08	0.4055		0.1868

Reb 05/10/2016

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N019559-007E,SAMP,1,	21:11:57	0.4067		0.1872
28	,N019559-008E,SAMP,1,	21:12:40	0.4890		0.2144
29	,N019559-009E,SAMP,1,	21:13:30	0.4209		0.1919
30	,N019559-010E,SAMP,1,	21:14:12	0.3719		0.1757
31	,N019559-011E,SAMP,1,	21:14:55	0.3752		0.1768
32	,N019559-012E,SAMP,1,	21:15:43	0.3694		0.1749
33	,BLANK,BLANK,1	21:16:27	0.0031		0.0539
34	,CCV-2,CCV,1,	21:17:09	0.5045		0.2195
35	,CCB-2,CCB,1,	21:17:58	0.0079		0.0555
36	,N019560-002C,SAMP,1,	21:18:40	0.0803		0.0794
37	,N019560-003C,SAMP,1,	21:19:23	0.8521		0.3343
38	,N019560-004C,SAMP,1,	21:20:13	0.0715		0.0765
39	,N019560-005C,SAMP,1,	21:20:55	0.7627		0.3048
40	,N019560-006C,SAMP,5,	21:21:38	0.8657		0.3388
41	,N019560-007C,SAMP,20,	21:22:26	1.0628		0.4039
42	,N019560-008C,SAMP,10,	21:23:10	0.7258		0.2926
43	,BLANK,BLANK,1	21:23:52	0.0070		0.0552
44	,CCV-3,CCV,1,	21:24:41	0.4527		0.2024
45	,CCB-3,CCB,1,	21:25:24	0.0046		0.0544

Reb 05/10/2016

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/07/2016
Time Analyzed: 18:35 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R160507B
Color reagent: R160507C
2% Copper Sulfate: R160507A
Ammonium Hydroxide: CINV-160406F

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N019559-001E		8.39						
2)	N019559-002E		7.95						
3)	N019559-003E		8.28						
4)	N019559-004E		8.78						
5)	N019559-005E		7.90						
6)	N019559-006E		7.80						
7)	N019559-007E		8.08						
8)	N019559-008E		8.16						
9)	N019559-009E		8.28						
10)	N019559-010E		8.40						
11)	N019559-011E		7.40						
12)	N019559-012E		8.31						
13)	N019560-002C		8.97						
14)	N019560-003C		7.33						
15)	N019560-004C		7.95						
16)	N019560-005C		7.73						
17)	N019560-006C		8.95						
18)	N019560-007C		8.09						
19)	N019560-008C		8.26						
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

Reb 05/13/2016

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57287
ASSET #: N019559

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 5/10/2016

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/16/2016 Date:

2nd Level Reviewer 5/17/2016 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N019559-005B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.06446 * 1 * (25/25) * 1000

Iron , ug/L = 64.46

Reporting results in two significant figures,

Iron , ug/L = 64

% RSD SUMMARY

RSD SUMMARY: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	19.86	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.84	15	PASS
Standard2	ICAL	1	Fe	0.05	0.58	15	PASS
Standard3	ICAL	1	Fe	2	0.33	15	PASS
Standard4	ICAL	1	Fe	5	0.64	15	PASS
Standard5	ICAL	1	Fe	7.5	0.19	15	PASS
Standard6	ICAL	1	Fe	10	0.36	15	PASS
Standard7	ICAL	1	Fe	20	0.058	15	PASS
ICV	ICV	1	Fe	10.34	0.33	15	PASS
ICB	ICB	1	Fe	0.0026	33.26	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.35	20	PASS
ICSA1	ICSA	1	Fe	15.79	17.67	15	NR!
ICSA1	ICSA	1	Fe	161.22	0.037	15	PASS
ICSAB1	ICSAB	1	Fe	181.88	0.11	15	PASS
CCV1	CCV	1	Fe	10.32	0.33	15	PASS
CCB1	CCB	1	Fe	-0.00056	108.31	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	3.05	20	PASS
ICSA2	ICSA	1	Fe	162.05	0.27	15	PASS
ICSAB2	ICSAB	1	Fe	182.87	0.034	15	PASS
MB-57287	MBLK	1	Fe	-0.0045	2.47	15	PASS
LCS-57287	LCS	1	Fe	0.11	0.3	15	PASS
N019543-012B	SAMP	1	Fe	0.018	1.02	15	PASS
N019543-012B	SAMP	5	Fe	0.00015	157.6	15	<PQL
N019543-012B-PS	PS	1	Fe	0.12	0.81	15	PASS
N019543-012B-MS	MS	1	Fe	0.12	1.028	15	PASS
N019543-012B-MSD	MSD	1	Fe	0.12	1.56	15	PASS
N019543-013B	SAMP	1	Fe	0.035	2.21	15	PASS
N019543-014B	SAMP	1	Fe	0.017	3.37	15	PASS
N019559-001B	SAMP	1	Fe	0.017	3.5	15	PASS
CCV2	CCV	1	Fe	10.34	0.49	15	PASS
CCB2	CCB	1	Fe	-0.0032	6.58	15	PASS
N019559-002B	SAMP	1	Fe	0.019	4.088	15	PASS
N019559-003B	SAMP	1	Fe	0.012	9.71	15	PASS
N019559-004B	SAMP	1	Fe	0.014	3.4	15	PASS
N019559-005B	SAMP	1	Fe	0.064	0.79	15	PASS
N019559-006B	SAMP	1	Fe	0.012	2.79	15	PASS
N019559-007B	SAMP	1	Fe	0.027	2.56	15	PASS
N019559-007B-MS	MS	1	Fe	0.12	0.7	15	PASS
N019559-008B	SAMP	1	Fe	0.024	2.66	15	PASS
N019559-009B	SAMP	1	Fe	0.041	1.97	15	PASS
N019559-010B	SAMP	1	Fe	0.04	1.62	15	PASS
CCV3	CCV	1	Fe	10.31	0.098	15	PASS

RSD SUMMARY: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB3	CCB	1	Fe	-0.0031	17.43	15	<PQL
N019559-011B	SAMP	1	Fe	0.02	4.41	15	PASS
N019559-012B	SAMP	1	Fe	0.0066	8.91	15	PASS
N019591-001B	SAMP	1	Fe	0.02	0.86	15	PASS
N019591-002B	SAMP	1	Fe	0.18	0.49	15	PASS
N019591-003B	SAMP	1	Fe	0.071	0.67	15	PASS
N019591-004B	SAMP	1	Fe	0.041	1.093	15	PASS
N019591-005B	SAMP	1	Fe	0.073	1.26	15	PASS
CCV4	CCV	1	Fe	10.3	0.2	15	PASS
CCB4	CCB	1	Fe	-0.0028	5.65	15	PASS
LLCCV2	CCV2	1	Fe	0.018	0.88	20	PASS
ICSA3	ICSA	1	Fe	162.27	0.051	15	PASS
ICSAB3	ICSAB	1	Fe	183.13	0.1	15	PASS
CCV5	CCV	1	Fe	10.27	0.78	15	PASS
CCB5	CCB	1	Fe	-0.0027	4.16	15	PASS
CCV6	CCV	1	Fe	10.35	0.24	15	PASS
CCB6	CCB	1	Fe	-0.0027	20.25	15	<PQL
CCV7	CCV	1	Fe	10.28	0.29	15	PASS
CCB7	CCB	1	Fe	-0.0024	16.48	15	<PQL
LLCCV3	CCV2	1	Fe	0.018	2.45	20	PASS
ICSA4	ICSA	1	Fe	162.64	0.12	15	PASS
ICSAB4	ICSAB	1	Fe	183.33	0.14	15	PASS
CCV8	CCV	1	Fe	10.32	0.074	15	PASS
CCB8	CCB	1	Fe	-0.0024	29.96	15	<PQL
CCV9	CCV	1	Fe	10.31	1.54	15	PASS
CCB9	CCB	1	Fe	-0.0016	9.58	15	PASS
CCV10	CCV	1	Fe	10.34	0.44	15	PASS
CCB10	CCB	1	Fe	-0.0021	29.71	15	<PQL
LLCCV4	CCV2	1	Fe	0.019	2.56	20	PASS
ICSA5	ICSA	1	Fe	162.54	0.15	15	PASS
ICSAB5	ICSAB	1	Fe	183.33	0.22	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160510C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/10/2016	12:07:58 PM
2	Standard1	ICAL	1	05/10/2016	12:12:49 PM
3	Standard2	ICAL	1	05/10/2016	12:18:08 PM
4	Standard3	ICAL	1	05/10/2016	12:23:28 PM
5	Standard4	ICAL	1	05/10/2016	12:28:50 PM
6	Standard5	ICAL	1	05/10/2016	12:34:13 PM
7	Standard6	ICAL	1	05/10/2016	12:39:33 PM
8	Standard7	ICAL	1	05/10/2016	12:44:54 PM
9	ICV	ICV	1	05/10/2016	12:52:43 PM
1	ICB	ICB	1	05/10/2016	12:59:06 PM
2	LLICV	CCV1	1	05/10/2016	01:03:54 PM
4	ICSA1	ICSA	1	05/10/2016	01:09:14 PM
4	ICSA1	ICSA	1	05/10/2016	01:16:36 PM
5	ICSAB1	ICSAB	1	05/10/2016	01:23:02 PM
98	MB-58317	MBLK	1	05/10/2016	01:29:30 PM
99	LCS1-58317	LCS	1	05/10/2016	01:34:21 PM
100	N019544-001B	SAMP	1	05/10/2016	01:39:43 PM
101	N019544-002B	SAMP	1	05/10/2016	01:46:06 PM
102	N019544-001B	SAMP	5	05/10/2016	01:52:28 PM
103	N019544-001B-PS	PS	1	05/10/2016	01:57:50 PM
104	N019544-001B-MS1	MS	1	05/10/2016	02:04:14 PM
105	N019544-001B-MSD1	MSD	1	05/10/2016	02:10:37 PM
7	CCV1	CCV	1	05/10/2016	02:17:00 PM
1	CCB1	CCB	1	05/10/2016	02:23:20 PM
2	LLCCV1	CCV2	1	05/10/2016	02:28:09 PM
4	ICSA2	ICSA	1	05/10/2016	02:33:29 PM
5	ICSAB2	ICSAB	1	05/10/2016	02:39:56 PM
38	MB-57287	MBLK	1	05/10/2016	04:38:59 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
39	LCS-57287	LCS	1	05/10/2016	04:43:48 PM
40	N019543-012B	SAMP	1	05/10/2016	04:49:09 PM
41	N019543-012B	SAMP	5	05/10/2016	04:54:28 PM
42	N019543-012B-PS	PS	1	05/10/2016	04:59:48 PM
43	N019543-012B-MS	MS	1	05/10/2016	05:05:08 PM
44	N019543-012B-MSD	MSD	1	05/10/2016	05:10:30 PM
45	N019543-013B	SAMP	1	05/10/2016	05:15:50 PM
46	N019543-014B	SAMP	1	05/10/2016	05:21:10 PM
47	N019559-001B	SAMP	1	05/10/2016	05:26:31 PM
7	CCV2	CCV	1	05/10/2016	05:31:52 PM
1	CCB2	CCB	1	05/10/2016	05:38:12 PM
48	N019559-002B	SAMP	1	05/10/2016	05:43:00 PM
49	N019559-003B	SAMP	1	05/10/2016	05:48:23 PM
50	N019559-004B	SAMP	1	05/10/2016	05:53:44 PM
51	N019559-005B	SAMP	1	05/10/2016	05:59:05 PM
52	N019559-006B	SAMP	1	05/10/2016	06:04:27 PM
53	N019559-007B	SAMP	1	05/10/2016	06:09:48 PM
54	N019559-007B-MS	MS	1	05/10/2016	06:15:09 PM
55	N019559-008B	SAMP	1	05/10/2016	06:20:30 PM
56	N019559-009B	SAMP	1	05/10/2016	06:25:51 PM
57	N019559-010B	SAMP	1	05/10/2016	06:31:13 PM
7	CCV3	CCV	1	05/10/2016	06:36:33 PM
1	CCB3	CCB	1	05/10/2016	06:42:54 PM
58	N019559-011B	SAMP	1	05/10/2016	06:47:42 PM
59	N019559-012B	SAMP	1	05/10/2016	06:53:04 PM
60	N019591-001B	SAMP	1	05/10/2016	06:58:25 PM
61	N019591-002B	SAMP	1	05/10/2016	07:04:46 PM
62	N019591-003B	SAMP	1	05/10/2016	07:11:07 PM
63	N019591-004B	SAMP	1	05/10/2016	07:21:38 PM
64	N019591-005B	SAMP	1	05/10/2016	07:28:00 PM
65	MB-57289	MBLK	1	05/10/2016	07:34:21 PM
66	LCS-57289	LCS	1	05/10/2016	07:39:12 PM
67	N019591-006B	SAMP	1	05/10/2016	07:44:33 PM
7	CCV4	CCV	1	05/10/2016	07:49:54 PM
1	CCB4	CCB	1	05/10/2016	07:55:14 PM
2	LLCCV2	CCV2	1	05/10/2016	08:00:03 PM
4	ICSA3	ICSA	1	05/10/2016	08:05:22 PM
5	ICSAB3	ICSAB	1	05/10/2016	08:11:49 PM
68	N019591-006B	SAMP	5	05/10/2016	08:18:17 PM
69	N019591-006B-PS	PS	1	05/10/2016	08:23:38 PM
70	N019591-006B-MS	MS	1	05/10/2016	08:29:59 PM
71	N019591-006B-MSD	MSD	1	05/10/2016	08:36:20 PM
72	N019591-007B	SAMP	1	05/10/2016	08:42:41 PM
73	N019591-009B	SAMP	1	05/10/2016	08:49:02 PM
74	N019591-010B	SAMP	1	05/10/2016	08:55:24 PM
75	N019591-011B	SAMP	1	05/10/2016	09:00:45 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
76	N019591-012B	SAMP	1	05/10/2016	09:06:06 PM
77	N019591-013B	SAMP	1	05/10/2016	09:11:27 PM
7	CCV5	CCV	1	05/10/2016	09:16:48 PM
1	CCB5	CCB	1	05/10/2016	09:22:08 PM
78	N019591-014B	SAMP	1	05/10/2016	09:26:57 PM
79	N019591-015B	SAMP	1	05/10/2016	09:32:17 PM
80	N019592-001B	SAMP	1	05/10/2016	09:37:38 PM
81	N019592-001B-MS	MS	1	05/10/2016	09:43:00 PM
82	N019592-004B	SAMP	1	05/10/2016	09:48:21 PM
83	N019592-005B	SAMP	1	05/10/2016	09:53:42 PM
84	N019592-006B	SAMP	1	05/10/2016	10:00:03 PM
85	N019592-007B	SAMP	1	05/10/2016	10:05:25 PM
86	N019610-001B	SAMP	1	05/10/2016	10:11:47 PM
87	N019610-002B	SAMP	1	05/10/2016	10:18:09 PM
7	CCV6	CCV	1	05/10/2016	10:24:31 PM
1	CCB6	CCB	1	05/10/2016	10:30:52 PM
88	N019610-003B	SAMP	1	05/10/2016	10:35:41 PM
89	N019610-004B	SAMP	1	05/10/2016	10:42:02 PM
90	N019610-007B	SAMP	1	05/10/2016	10:48:25 PM
91	N019610-009B	SAMP	1	05/10/2016	10:53:46 PM
98	MB-58327	MBLK	1	05/10/2016	10:59:07 PM
99	LCS-58327	LCS	1	05/10/2016	11:03:58 PM
100	N019610-010B	SAMP	1	05/10/2016	11:09:19 PM
101	N019610-010B	SAMP	5	05/10/2016	11:14:41 PM
102	N019610-010B-PS	PS	1	05/10/2016	11:20:03 PM
103	N019610-010B-MS	MS	1	05/10/2016	11:25:26 PM
7	CCV7	CCV	1	05/10/2016	11:30:47 PM
1	CCB7	CCB	1	05/10/2016	11:37:07 PM
2	LLCCV3	CCV2	1	05/10/2016	11:41:56 PM
4	ICSA4	ICSA	1	05/10/2016	11:47:15 PM
5	ICSAB4	ICSAB	1	05/10/2016	11:53:41 PM
104	N019610-010B-MSD	MSD	1	05/11/2016	12:00:09 AM
105	N019610-011B	SAMP	1	05/11/2016	12:05:30 AM
106	N019610-012B	SAMP	1	05/11/2016	12:10:53 AM
107	N019610-013B	SAMP	1	05/11/2016	12:17:15 AM
108	N019610-014B	SAMP	1	05/11/2016	12:23:39 AM
109	N019610-015B	SAMP	1	05/11/2016	12:29:01 AM
110	N019611-001B	SAMP	1	05/11/2016	12:35:24 AM
111	N019611-002B	SAMP	1	05/11/2016	12:41:47 AM
112	N019611-003B	SAMP	1	05/11/2016	12:47:09 AM
113	N019611-004B	SAMP	1	05/11/2016	12:52:31 AM
7	CCV8	CCV	1	05/11/2016	12:57:54 AM
1	CCB8	CCB	1	05/11/2016	01:04:14 AM
114	N019611-004B-MS	MS	1	05/11/2016	01:09:03 AM
115	N019611-005B	SAMP	1	05/11/2016	01:14:25 AM
116	N019611-006B	SAMP	1	05/11/2016	01:20:46 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
117	N019611-007B	SAMP	1	05/11/2016	01:26:10 AM
118	N019611-008B	SAMP	1	05/11/2016	01:31:31 AM
119	N019611-010B	SAMP	1	05/11/2016	01:36:55 AM
120	N019611-011B	SAMP	1	05/11/2016	01:42:18 AM
121	N019611-012B	SAMP	1	05/11/2016	01:47:40 AM
122	N019611-013B	SAMP	1	05/11/2016	01:54:03 AM
123	N019611-014B	SAMP	1	05/11/2016	01:59:26 AM
7	CCV9	CCV	1	05/11/2016	02:05:49 AM
1	CCB9	CCB	1	05/11/2016	02:11:09 AM
124	N019611-015B	SAMP	1	05/11/2016	02:15:58 AM
7	CCV10	CCV	1	05/11/2016	02:22:21 AM
1	CCB10	CCB	1	05/11/2016	02:28:41 AM
2	LLCCV4	CCV2	1	05/11/2016	02:33:30 AM
4	ICSA5	ICSA	1	05/11/2016	02:38:49 AM
5	ICSAB5	ICSAB	1	05/11/2016	02:45:16 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/4/2016 8:07:49 A**
Prep End Date: **5/4/2016 12:30:00 P**

Initials/ Date: 5/16/2016

Prep Factor Units: **mL / mL**

Prep Batch **57287** Prep Code: **3010_W_DISS** Technician: **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57287	Aqueous		25	☐	0	0	25	1.000		
MB-57287	Aqueous		25	☐	0	0	25	1.000		
N019543-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-007B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/4/2016 8:07:49 A**
Prep End Date: **5/4/2016 12:30:00 P**

Initials/ Date: 5/16/2016

Prep Factor Units: **mL / mL**

Prep Batch **57287** Prep Code: **3010_W_DISS** Technician: **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019559-007B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019591-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160510C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	05/10/2016	12:07:58 PM	Fe	273.953	65	0.00	mg/L	
Standard1	05/10/2016	12:12:49 PM	Fe	273.953	454	0.0200	mg/L	
Standard2	05/10/2016	12:18:08 PM	Fe	273.953	1199	0.050	mg/L	
Standard3	05/10/2016	12:23:28 PM	Fe	273.953	46602	2.000	mg/L	
Standard4	05/10/2016	12:28:50 PM	Fe	273.953	115669	5.000	mg/L	
Standard5	05/10/2016	12:34:13 PM	Fe	273.953	171053	7.500	mg/L	
Standard6	05/10/2016	12:39:33 PM	Fe	273.953	230604	10.000	mg/L	
Standard7	05/10/2016	12:44:54 PM	Fe	273.953	437141	20.000	mg/L	0.9997

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10336.768	20	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.806	20	20.00	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10316.238	20	10000	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.752	20	20.00	0	98.8	70	130				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10344.438	20	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10305.558	20	10000	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10300.177	20	10000	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	17.630	20	20.00	0	88.1	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10265.535	20	10000	0	103	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCV**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10348.284	20	10000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV7	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	CCV	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/10/2016	SeqNo:	2322876

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10283.206	20	10000	0	103	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	ZZZZZZ	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/10/2016	SeqNo:	2322878

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	17.744	20	20.00	0	88.7	70	130				

Sample ID	CCV8	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	CCV	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/11/2016	SeqNo:	2322891

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10317.234	20	10000	0	103	90	110				

Sample ID	CCV9	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	CCV	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/11/2016	SeqNo:	2322903

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10313.758	20	10000	0	103	90	110				

Sample ID	CCV10	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	CCV	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/11/2016	SeqNo:	2322906

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10344.127	20	10000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ZZZZZZ**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2322908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.538	20	20.00	0	92.7	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	2.647	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.561561	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-3.18001	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-3.136883	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.826723	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.683358	20									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.685825	20									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.439901	20									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2322892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.374297	20									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2322904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.58575	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **CCB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2322907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.110558	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSA**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	461579.927	50	500000	0	92.3	80	120				
Calcium	481697.975	500	500000	0	96.3	80	120				
Iron	161221.150	20	200000	0	80.6	80	120				
Magnesium	448645.497	100	500000	0	89.7	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSAB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	558473.112	50	500000	0	112	80	120				
Calcium	579877.398	500	500000	0	116	80	120				
Iron	181882.538	20	200000	0	90.9	80	120				
Magnesium	520696.919	100	500000	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSA**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460500.123	50	500000	0	92.1	80	120				
Calcium	479120.818	500	500000	0	95.8	80	120				
Iron	162046.571	20	200000	0	81.0	80	120				
Magnesium	463492.303	100	500000	0	92.7	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID: **ICSAB**	Batch ID: **R108380**	TestNo: **EPA 6010B**		Analysis Date: **5/10/2016**	SeqNo: **2322802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	557505.070	50	500000	0	112	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108380**
Client ID: **ICSAB** Batch ID: **R108380** TestNo: **EPA 6010B** Analysis Date: **5/10/2016** SeqNo: **2322802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	584397.237	500	500000	0	117	80	120				
Iron	182873.286	20	200000	0	91.4	80	120				
Magnesium	537959.521	100	500000	0	108	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108380**
Client ID: **ICSA** Batch ID: **R108380** TestNo: **EPA 6010B** Analysis Date: **5/10/2016** SeqNo: **2322840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	456928.999	50	500000	0	91.4	80	120				
Calcium	470734.112	500	500000	0	94.1	80	120				
Iron	162271.224	20	200000	0	81.1	80	120				
Magnesium	470490.752	100	500000	0	94.1	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108380**
Client ID: **ICSAB** Batch ID: **R108380** TestNo: **EPA 6010B** Analysis Date: **5/10/2016** SeqNo: **2322841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	553074.958	50	500000	0	111	80	120				
Calcium	574958.086	500	500000	0	115	80	120				
Iron	183128.925	20	200000	0	91.6	80	120				
Magnesium	544754.543	100	500000	0	109	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108380**
Client ID: **ICSA** Batch ID: **R108380** TestNo: **EPA 6010B** Analysis Date: **5/10/2016** SeqNo: **2322879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	459207.344	50	500000	0	91.8	80	120				
Calcium	471593.375	500	500000	0	94.3	80	120				
Iron	162640.136	20	200000	0	81.3	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	ICSA	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/10/2016	SeqNo:	2322879

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	468957.875	100	500000	0	93.8	80	120				

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	ICSAB	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/10/2016	SeqNo:	2322880

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	570164.769	500	500000	0	114	80	120				
Iron	183332.630	20	200000	0	91.7	80	120				
Magnesium	543404.599	100	500000	0	109	80	120				

Sample ID	ICSA5	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	ICSA	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/11/2016	SeqNo:	2322909

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	457114.006	50	500000	0	91.4	80	120				
Calcium	466124.665	500	500000	0	93.2	80	120				
Iron	162539.595	20	200000	0	81.3	80	120				
Magnesium	461783.012	100	500000	0	92.4	80	120				

Sample ID	ICSAB5	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108380
Client ID:	ICSAB	Batch ID:	R108380	TestNo:	EPA 6010B			Analysis Date:	5/11/2016	SeqNo:	2322910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	552882.782	50	500000	0	111	80	120				
Calcium	565558.356	500	500000	0	113	80	120				
Iron	183327.125	20	200000	0	91.7	80	120				
Magnesium	533792.583	100	500000	0	107	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.012	101.22	65-125	PASS
Standard2	ICAL	1	1.035	103.49	65-125	PASS
Standard3	ICAL	1	1.02	101.95	65-125	PASS
Standard4	ICAL	1	1	99.83	65-125	PASS
Standard5	ICAL	1	1.08	107.96	65-125	PASS
Standard6	ICAL	1	0.99	99.47	65-125	PASS
Standard7	ICAL	1	0.99	98.7	65-125	PASS
ICV	ICV	1	1.0064	100.64	65-125	PASS
ICB	ICB	1	1.018	101.79	65-125	PASS
LLICV	CCV1	1	1.0093	100.93	65-125	PASS
ICSA1	ICSA	1	-0.00013	-0.013	65-125	NR!
ICSA1	ICSA	1	1.046	104.58	65-125	PASS
ICSAB1	ICSAB	1	0.83	83.037	65-125	PASS
CCV1	CCV	1	0.99	98.88	65-125	PASS
CCB1	CCB	1	1	100	65-125	PASS
LLCCV1	CCV2	1	1.0012	100.12	65-125	PASS
ICSA2	ICSA	1	1.034	103.41	65-125	PASS
ICSAB2	ICSAB	1	0.82	81.88	65-125	PASS
MB-57287	MBLK	1	0.99	99.013	65-125	PASS
LCS-57287	LCS	1	0.99	98.95	65-125	PASS
N019543-012B	SAMP	1	0.93	92.69	65-125	PASS
N019543-012B	SAMP	5	0.96	96.44	65-125	PASS
N019543-012B-PS	PS	1	0.9	89.69	65-125	PASS
N019543-012B-MS	MS	1	0.89	88.82	65-125	PASS
N019543-012B-MSD	MSD	1	0.87	87.48	65-125	PASS
N019543-013B	SAMP	1	0.88	88.42	65-125	PASS
N019543-014B	SAMP	1	0.88	88.12	65-125	PASS
N019559-001B	SAMP	1	0.91	90.79	65-125	PASS
CCV2	CCV	1	0.96	95.6	65-125	PASS
CCB2	CCB	1	0.98	97.56	65-125	PASS
N019559-002B	SAMP	1	0.94	93.86	65-125	PASS
N019559-003B	SAMP	1	0.94	94.074	65-125	PASS
N019559-004B	SAMP	1	0.9	90.43	65-125	PASS
N019559-005B	SAMP	1	1.02	102	65-125	PASS
N019559-006B	SAMP	1	0.93	92.53	65-125	PASS
N019559-007B	SAMP	1	0.92	92.11	65-125	PASS
N019559-007B-MS	MS	1	0.89	88.86	65-125	PASS
N019559-008B	SAMP	1	0.9	89.72	65-125	PASS
N019559-009B	SAMP	1	0.91	90.67	65-125	PASS
N019559-010B	SAMP	1	0.92	92	65-125	PASS

INTERNAL STANDARD: 160510C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV3	CCV	1	0.95	94.92	65-125	PASS
CCB3	CCB	1	0.96	96.057	65-125	PASS
N019559-011B	SAMP	1	0.91	90.67	65-125	PASS
N019559-012B	SAMP	1	0.91	90.7	65-125	PASS
N019591-001B	SAMP	1	0.86	86.24	65-125	PASS
N019591-002B	SAMP	1	0.87	87.49	65-125	PASS
N019591-003B	SAMP	1	0.9	89.57	65-125	PASS
N019591-004B	SAMP	1	1.0096	100.96	65-125	PASS
N019591-005B	SAMP	1	0.9	89.55	65-125	PASS
CCV4	CCV	1	0.95	94.59	65-125	PASS
CCB4	CCB	1	0.95	95.17	65-125	PASS
LLCCV2	CCV2	1	0.97	96.59	65-125	PASS
ICSA3	ICSA	1	1	99.92	65-125	PASS
ICSAB3	ICSAB	1	0.79	79.082	65-125	PASS
CCV5	CCV	1	0.96	95.94	65-125	PASS
CCB5	CCB	1	0.97	97.38	65-125	PASS
CCV6	CCV	1	0.96	96.22	65-125	PASS
CCB6	CCB	1	0.98	97.99	65-125	PASS
CCV7	CCV	1	0.95	94.82	65-125	PASS
CCB7	CCB	1	0.96	96.48	65-125	PASS
LLCCV3	CCV2	1	0.97	97.21	65-125	PASS
ICSA4	ICSA	1	1.01	101.01	65-125	PASS
ICSAB4	ICSAB	1	0.8	80.39	65-125	PASS
CCV8	CCV	1	0.96	96.28	65-125	PASS
CCB8	CCB	1	0.98	97.83	65-125	PASS
CCV9	CCV	1	0.94	93.69	65-125	PASS
CCB9	CCB	1	0.95	95.29	65-125	PASS
CCV10	CCV	1	0.94	94.36	65-125	PASS
CCB10	CCB	1	0.95	95.37	65-125	PASS
LLCCV4	CCV2	1	0.97	97.33	65-125	PASS
ICSA5	ICSA	1	1.006	100.6	65-125	PASS
ICSAB5	ICSAB	1	0.79	79.23	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019559
Test Method: EPA 6010B
Analysis Date: 05/10/16

Matrix: Groundwater
Batch No.: 57287

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019543-012B DT 5X	Iron	ug/L	0	NA	18.46253	100.00%	10

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N019543-012B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108380**
Client ID:	**ZZZZZZ**	Batch ID: **57287**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.916	20	100.0	18.46	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57237
ASSET #: N019559

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 5/4/2016

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/17/2016 Date: —

2nd Level Reviewer 5/17/2016 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58387
ASSET #: N019559

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/11/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N019559-007C to 012C run only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/17/2016 Date: _____

2nd Level Reviewer 5/17/2016 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N019559-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.08237 * 1 * (25/25) * 1000

Iron , ug/L = 82.37

Reporting results in two significant figures,

Iron , ug/L = 82

% RSD SUMMARY

RSD SUMMARY: 160504A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	7.049	15	PASS
Standard1	ICAL	1	Fe	0.02	0.77	15	PASS
Standard2	ICAL	1	Fe	0.05	2.051	15	PASS
Standard3	ICAL	1	Fe	2	0.79	15	PASS
Standard4	ICAL	1	Fe	5	0.64	15	PASS
Standard5	ICAL	1	Fe	7.5	0.52	15	PASS
Standard6	ICAL	1	Fe	10	0.87	15	PASS
Standard7	ICAL	1	Fe	20	0.077	15	PASS
ICV	ICV	1	Fe	10.45	0.034	15	PASS
ICB	ICB	1	Fe	-0.00047	73.58	15	<PQL
LLICV	CCV1	1	Fe	0.024	2.46	20	PASS
ICSA1	ICSA	1	Fe	171.01	0.23	15	PASS
ICSAB1	ICSAB	1	Fe	191.88	0.046	15	PASS
MB-57237	MBLK	1	Fe	0.0023	34.12	15	<PQL
LCS-57237	LCS	1	Fe	0.14	0.059	15	PASS
N019543-001C	SAMP	1	Fe	0.11	0.14	15	PASS
N019543-001C	SAMP	5	Fe	0.024	3.29	15	PASS
N019543-001C-PS	PS	1	Fe	0.2	1.00023	15	PASS
N019543-001C-MS	MS	1	Fe	0.2	0.73	15	PASS
N019543-001C-MSD	MSD	1	Fe	0.2	0.77	15	PASS
N019543-002C	SAMP	1	Fe	0.087	1.31	15	PASS
N019543-003C	SAMP	1	Fe	0.083	1.033	15	PASS
N019543-004C	SAMP	1	Fe	0.055	4.45	15	PASS
CCV1	CCV	1	Fe	10.3	0.8	15	PASS
CCB1	CCB	1	Fe	-0.00034	190.12	15	<PQL
N019543-005C	SAMP	1	Fe	0.065	0.92	15	PASS
N019543-006C	SAMP	1	Fe	0.063	1.11	15	PASS
N019543-007C	SAMP	1	Fe	0.11	0.49	15	PASS
N019543-008C	SAMP	1	Fe	0.071	0.51	15	PASS
N019543-009C	SAMP	1	Fe	0.04	4.11	15	PASS
N019543-010C	SAMP	1	Fe	0.04	0.69	15	PASS
N019543-011C	SAMP	1	Fe	0.095	1.05	15	PASS
N019543-011C-MS	MS	1	Fe	0.18	0.45	15	PASS
N019543-012C	SAMP	1	Fe	0.04	2.73	15	PASS
N019543-013C	SAMP	1	Fe	3.97	0.37	15	PASS
CCV2	CCV	1	Fe	9.89	0.038	15	PASS
CCB2	CCB	1	Fe	0.00012	502.55	15	<PQL
N019543-014C	SAMP	1	Fe	3.99	0.54	15	PASS
N019559-001C	SAMP	1	Fe	0.082	0.44	15	PASS
N019559-002C	SAMP	1	Fe	0.064	0.28	15	PASS
N019559-003C	SAMP	1	Fe	0.056	0.97	15	PASS
N019559-004C	SAMP	1	Fe	0.059	1.046	15	PASS

RSD SUMMARY: 160504A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N019559-005C	SAMP	1	Fe	0.11	0.69	15	PASS
N019559-006C	SAMP	1	Fe	0.059	0.58	15	PASS
LCS-57237	LCS	1	Fe	0.1	0.69	15	PASS
CCV3	CCV	1	Fe	10.17	1.096	15	PASS
CCB3	CCB	1	Fe	-0.00077	131.26	15	<PQL
LLCCV1	CCV2	1	Fe	0.022	1.94	20	PASS
ICSA2	ICSA	1	Fe	167.96	0.076	15	PASS
ICSAB2	ICSAB	1	Fe	188.36	0.11	15	PASS

RSD SUMMARY: 160511B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	19.43	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.018	15	PASS
Standard2	ICAL	1	Fe	0.05	1.6	15	PASS
Standard3	ICAL	1	Fe	2	0.13	15	PASS
Standard4	ICAL	1	Fe	5	0.34	15	PASS
Standard5	ICAL	1	Fe	7.5	0.083	15	PASS
Standard6	ICAL	1	Fe	10	0.65	15	PASS
Standard7	ICAL	1	Fe	20	0.097	15	PASS
ICV	ICV	1	Fe	10.25	0.61	15	PASS
ICB	ICB	1	Fe	-0.0038	8.049	15	PASS
LLICV	CCV1	1	Fe	0.018	0.95	20	PASS
ICSA1	ICSA	1	Fe	2.11	0.86	15	PASS
ICSA1	ICSA	1	Fe	179.82	0.0032	15	PASS
ICSAB1	ICSAB	1	Fe	183.86	0.053	15	PASS
MB-58387	MBLK	1	Fe	0.0062	21.82	15	<PQL
LCS1-58387	LCS	1	Fe	0.13	1.24	15	PASS
N019559-007C	SAMP	1	Fe	0.049	4.88	15	PASS
N019559-007C	SAMP	5	Fe	0.0083	5.53	15	PASS
N019559-007C-PS	PS	1	Fe	0.15	0.79	15	PASS
N019559-007C-MS1	MS	1	Fe	0.15	0.57	15	PASS
N019559-007C-MSD1	MSD	1	Fe	0.15	0.29	15	PASS
N019559-008C	SAMP	1	Fe	0.043	2.11	15	PASS
N019559-009C	SAMP	1	Fe	0.034	1.12	15	PASS
N019559-010C	SAMP	1	Fe	0.078	1.05	15	PASS
CCV1	CCV	1	Fe	10.24	0.46	15	PASS
CCB1	CCB	1	Fe	-0.0028	8.23	15	PASS
N019559-011C	SAMP	1	Fe	0.06	0.77	15	PASS
N019559-012C	SAMP	1	Fe	0.066	0.44	15	PASS
N019606-001B	SAMP	1	Fe	0.018	1.86	15	PASS
N019606-002B	SAMP	1	Fe	0.015	4.26	15	PASS
N019606-003B	SAMP	1	Fe	0.016	3.38	15	PASS
N019607-003B	SAMP	1	Fe	0.021	2.03	15	PASS
CCV2	CCV	1	Fe	10.28	0.39	15	PASS
CCB2	CCB	1	Fe	-0.0031	12.36	15	PASS
LCS1-58387	LCS	1	Fe	0.11	0.18	15	PASS
CCV3	CCV	1	Fe	10.28	0.59	15	PASS
CCB3	CCB	1	Fe	-0.004	3.75	15	PASS
LLCCV1	CCV2	1	Fe	0.017	3.22	20	PASS
ICSA2	ICSA	1	Fe	181.36	0.1	15	PASS
ICSAB2	ICSAB	1	Fe	184.59	0.1	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160504A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/04/2016	08:44:33 AM
2	Standard1	ICAL	1	05/04/2016	08:49:24 AM
3	Standard2	ICAL	1	05/04/2016	08:54:43 AM
4	Standard3	ICAL	1	05/04/2016	09:00:04 AM
5	Standard4	ICAL	1	05/04/2016	09:05:25 AM
6	Standard5	ICAL	1	05/04/2016	09:10:46 AM
7	Standard6	ICAL	1	05/04/2016	09:16:04 AM
8	Standard7	ICAL	1	05/04/2016	09:21:24 AM
9	ICV	ICV	1	05/04/2016	09:26:09 AM
1	ICB	ICB	1	05/04/2016	09:32:32 AM
2	LLICV	CCV1	1	05/04/2016	09:37:20 AM
4	ICSA1	ICSA	1	05/04/2016	09:42:40 AM
5	ICSAB1	ICSAB	1	05/04/2016	09:49:07 AM
38	MB-57237	MBLK	1	05/04/2016	09:55:35 AM
39	LCS-57237	LCS	1	05/04/2016	10:00:24 AM
40	N019543-001C	SAMP	1	05/04/2016	10:05:44 AM
41	N019543-001C	SAMP	5	05/04/2016	10:11:05 AM
42	N019543-001C-PS	PS	1	05/04/2016	10:16:24 AM
43	N019543-001C-MS	MS	1	05/04/2016	10:21:44 AM
44	N019543-001C-MSD	MSD	1	05/04/2016	10:27:05 AM
45	N019543-002C	SAMP	1	05/04/2016	10:32:25 AM
46	N019543-003C	SAMP	1	05/04/2016	10:37:46 AM
47	N019543-004C	SAMP	1	05/04/2016	10:43:07 AM
7	CCV1	CCV	1	05/04/2016	10:48:28 AM
1	CCB1	CCB	1	05/04/2016	10:54:48 AM
48	N019543-005C	SAMP	1	05/04/2016	10:59:36 AM
49	N019543-006C	SAMP	1	05/04/2016	11:04:57 AM
50	N019543-007C	SAMP	1	05/04/2016	11:10:18 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N019543-008C	SAMP	1	05/04/2016	11:15:39 AM
52	N019543-009C	SAMP	1	05/04/2016	11:21:00 AM
53	N019543-010C	SAMP	1	05/04/2016	11:26:20 AM
54	N019543-011C	SAMP	1	05/04/2016	11:31:40 AM
55	N019543-011C-MS	MS	1	05/04/2016	11:37:01 AM
56	N019543-012C	SAMP	1	05/04/2016	11:42:24 AM
57	N019543-013C	SAMP	1	05/04/2016	11:47:44 AM
7	CCV2	CCV	1	05/04/2016	11:53:05 AM
1	CCB2	CCB	1	05/04/2016	11:57:59 AM
58	N019543-014C	SAMP	1	05/04/2016	12:02:48 PM
59	N019559-001C	SAMP	1	05/04/2016	12:08:09 PM
60	N019559-002C	SAMP	1	05/04/2016	12:13:31 PM
61	N019559-003C	SAMP	1	05/04/2016	12:18:53 PM
62	N019559-004C	SAMP	1	05/04/2016	12:24:15 PM
63	N019559-005C	SAMP	1	05/04/2016	12:29:36 PM
64	N019559-006C	SAMP	1	05/04/2016	12:34:57 PM
39	LCS-57237	LCS	1	05/04/2016	12:46:15 PM
7	CCV3	CCV	1	05/04/2016	12:51:36 PM
1	CCB3	CCB	1	05/04/2016	12:56:56 PM
2	LLCCV1	CCV2	1	05/04/2016	01:01:44 PM
4	ICSA2	ICSA	1	05/04/2016	01:07:02 PM
5	ICSAB2	ICSAB	1	05/04/2016	01:13:29 PM

INJECTION LOG: 160511B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/11/2016	06:11:38 PM
2	Standard1	ICAL	1	05/11/2016	06:16:28 PM
3	Standard2	ICAL	1	05/11/2016	06:21:47 PM
4	Standard3	ICAL	1	05/11/2016	06:27:06 PM
5	Standard4	ICAL	1	05/11/2016	06:32:28 PM
6	Standard5	ICAL	1	05/11/2016	06:38:50 PM
7	Standard6	ICAL	1	05/11/2016	06:45:10 PM
8	Standard7	ICAL	1	05/11/2016	06:51:31 PM
9	ICV	ICV	1	05/11/2016	06:57:26 PM
1	ICB	ICB	1	05/11/2016	07:07:59 PM
2	LLICV	CCV1	1	05/11/2016	07:24:05 PM
4	ICSA1	ICSA	1	05/11/2016	07:29:24 PM
4	ICSA1	ICSA	1	05/11/2016	07:37:45 PM
5	ICSAB1	ICSAB	1	05/11/2016	07:44:12 PM
38	MB-58387	MBLK	1	05/11/2016	07:50:40 PM
39	LCS1-58387	LCS	1	05/11/2016	07:55:31 PM
40	N019559-007C	SAMP	1	05/11/2016	08:01:51 PM
41	N019559-007C	SAMP	5	05/11/2016	08:07:11 PM
42	N019559-007C-PS	PS	1	05/11/2016	08:12:31 PM
43	N019559-007C-MS1	MS	1	05/11/2016	08:18:50 PM
44	N019559-007C-MSD1	MSD	1	05/11/2016	08:25:09 PM
45	N019559-008C	SAMP	1	05/11/2016	08:31:28 PM
46	N019559-009C	SAMP	1	05/11/2016	08:36:49 PM
47	N019559-010C	SAMP	1	05/11/2016	08:42:10 PM
7	CCV1	CCV	1	05/11/2016	08:47:31 PM
1	CCB1	CCB	1	05/11/2016	08:53:51 PM
48	N019559-011C	SAMP	1	05/11/2016	08:59:09 PM
49	N019559-012C	SAMP	1	05/11/2016	09:04:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
50	N019606-001B	SAMP	1	05/11/2016	09:09:51 PM
51	N019606-002B	SAMP	1	05/11/2016	09:16:10 PM
52	N019606-003B	SAMP	1	05/11/2016	09:22:30 PM
53	N019607-003B	SAMP	1	05/11/2016	09:28:50 PM
54	MB-57298	MBLK	1	05/11/2016	09:35:10 PM
55	LCS1-57298	LCS	1	05/11/2016	09:39:59 PM
56	N019614-002C	SAMP	1	05/11/2016	09:46:20 PM
57	N019593-001B	SAMP	1	05/11/2016	09:52:39 PM
7	CCV2	CCV	1	05/11/2016	09:57:58 PM
1	CCB2	CCB	1	05/11/2016	10:04:18 PM
58	N019593-001B	SAMP	5	05/11/2016	10:09:06 PM
59	N019593-001B-PS	PS	1	05/11/2016	10:14:27 PM
60	N019593-001B-MS1	MS	1	05/11/2016	10:20:48 PM
61	N019593-001B-MSD1	MSD	1	05/11/2016	10:27:09 PM
39	LCS1-58387	LCS	1	05/11/2016	10:33:31 PM
7	CCV3	CCV	1	05/11/2016	10:39:51 PM
1	CCB3	CCB	1	05/11/2016	10:46:11 PM
2	LLCCV1	CCV2	1	05/11/2016	10:51:28 PM
4	ICSA2	ICSA	1	05/11/2016	10:56:47 PM
5	ICSAB2	ICSAB	1	05/12/2016	12:38:07 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/3/2016 8:28:40 A**
Prep End Date: **5/3/2016 1:00:00 P**

Initials/ Date: 5/17/2016

Prep Batch **57237** Prep Code: **3010_W** Technician **Amy Mata**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57237	Aqueous		25	☐	0	0	25	1.000		
MB-57237	Aqueous		25	☐	0	0	25	1.000		
N019543-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-010C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/3/2016 8:28:40 A**
Prep End Date: **5/3/2016 1:00:00 P**

Initials/ Date: 5/17/2016

Prep Batch **57237** Prep Code: **3010_W** Technician **Amy Mata**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019543-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-011C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N019543-014C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-006C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8294	HYDROCHLORIC ACID
8401	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2016 8:46:45**
Prep End Date: **5/11/2016 2:10:00**

Initials/ Date: 5/17/2016

Prep Batch **58387** Prep Code: **3010_W** Technician **Amy Mata**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-58387	Aqueous		25	☐	0	0	25	1.000		
LCS2-58387	Aqueous		25	☐	0	0	25	1.000		
MB-58387	Aqueous		25	☐	0	0	25	1.000		
N019559-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-007C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-007C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8408	HYDROCHLORIC ACID
8445	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2016 8:46:45**
Prep End Date: **5/11/2016 2:10:00**

Initials/ Date: 5/17/2016

Prep Batch **58387** Prep Code: **3010_W** Technician **Amy Mata**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019606-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8408	HYDROCHLORIC ACID
8445	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160504A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	05/04/2016	08:44:33 AM	Fe	273.953	-99	0.00	mg/L	
Standard1	05/04/2016	08:49:24 AM	Fe	273.953	658	0.0200	mg/L	
Standard2	05/04/2016	08:54:43 AM	Fe	273.953	1786	0.050	mg/L	
Standard3	05/04/2016	09:00:04 AM	Fe	273.953	58290	2.000	mg/L	
Standard4	05/04/2016	09:05:25 AM	Fe	273.953	148273	5.000	mg/L	
Standard5	05/04/2016	09:10:46 AM	Fe	273.953	219776	7.500	mg/L	
Standard6	05/04/2016	09:16:04 AM	Fe	273.953	296340	10.000	mg/L	
Standard7	05/04/2016	09:21:24 AM	Fe	273.953	556119	20.000	mg/L	0.9996

INITIAL CALIBRATION SUMMARY: 160511B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	05/11/2016	06:11:38 PM	Fe	273.953	86	0.00	mg/L	
Standard1	05/11/2016	06:16:28 PM	Fe	273.953	434	0.0200	mg/L	
Standard2	05/11/2016	06:21:47 PM	Fe	273.953	1126	0.050	mg/L	
Standard3	05/11/2016	06:27:06 PM	Fe	273.953	47858	2.000	mg/L	
Standard4	05/11/2016	06:32:28 PM	Fe	273.953	117506	5.000	mg/L	
Standard5	05/11/2016	06:38:50 PM	Fe	273.953	175237	7.500	mg/L	
Standard6	05/11/2016	06:45:10 PM	Fe	273.953	234089	10.000	mg/L	
Standard7	05/11/2016	06:51:31 PM	Fe	273.953	452089	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICV**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10445.473	20	10000	0	104	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ZZZZZZ**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	23.761	20	20.00	0	119	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCV**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10298.911	20	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCV**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9886.048	20	10000	0	98.9	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCV**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10173.537	20	10000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	108259
Client ID:	ZZZZZZ	Batch ID:	R108259	TestNo:	EPA 6010B			Analysis Date:	5/4/2016	SeqNo:	2315902

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.440	20	20.00	0	112	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **ICV**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10254.362	20	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **ZZZZZZ**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.495	20	20.00	0	92.5	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **CCV**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10237.313	20	10000	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **CCV**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10282.967	20	10000	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **CCV**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10279.879	20	10000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**LLCCV1**	SampType:	**CCV2**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**108415**
Client ID:	**ZZZZZZ**	Batch ID:	**R108415**	TestNo:	**EPA 6010B**			Analysis Date:	**5/11/2016**	SeqNo:	**2324103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	17.082	20	20.00	0	85.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.467984	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.344481	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.117	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **CCB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.768342	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **ICB**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-3.807312	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **CCB**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.852822	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **CCB**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-3.054848	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **CCB**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-4.007243	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSA**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	448842.702	50	500000	0	89.8	80	120				
Calcium	448796.608	500	500000	0	89.8	80	120				
Iron	171010.681	20	200000	0	85.5	80	120				
Magnesium	436725.085	100	500000	0	87.3	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSAB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	543631.415	50	500000	0	109	80	120				
Calcium	541965.559	500	500000	0	108	80	120				
Iron	191880.031	20	200000	0	95.9	80	120				
Magnesium	500977.126	100	500000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSA**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	446119.711	50	500000	0	89.2	80	120				
Calcium	421445.011	500	500000	0	84.3	80	120				
Iron	167957.218	20	200000	0	84.0	80	120				
Magnesium	407724.450	100	500000	0	81.5	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSAB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	539360.780	50	500000	0	108	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID: **ICSAB**	Batch ID: **R108259**	TestNo: **EPA 6010B**		Analysis Date: **5/4/2016**	SeqNo: **2315904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	510961.847	500	500000	0	102	80	120				
Iron	188355.129	20	200000	0	94.2	80	120				
Magnesium	468859.301	100	500000	0	93.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **ICSA**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	467938.726	50	500000	0	93.6	80	120				
Calcium	491806.719	500	500000	0	98.4	80	120				
Iron	179815.266	20	200000	0	89.9	80	120				
Magnesium	530887.631	100	500000	0	106	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **ICSAB**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	565978.092	50	500000	0	113	80	120				
Calcium	592313.875	500	500000	0	118	80	120				
Iron	183858.633	20	200000	0	91.9	80	120				
Magnesium	526295.568	100	500000	0	105	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **ICSA**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/11/2016**	SeqNo: **2324104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	466612.283	50	500000	0	93.3	80	120				
Calcium	482910.796	500	500000	0	96.6	80	120				
Iron	181360.331	20	200000	0	90.7	80	120				
Magnesium	522832.402	100	500000	0	105	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **ICSAB**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/12/2016**	SeqNo: **2324105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	563904.719	50	500000	0	113	80	120				
Calcium	582999.687	500	500000	0	117	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108415**
Client ID: **ICSAB**	Batch ID: **R108415**	TestNo: **EPA 6010B**		Analysis Date: **5/12/2016**	SeqNo: **2324105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	184591.820	20	200000	0	92.3	80	120				
Magnesium	518229.634	100	500000	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160504A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.043	104.3	65-125	PASS
Standard2	ICAL	1	1.073	107.31	65-125	PASS
Standard3	ICAL	1	1.053	105.3	65-125	PASS
Standard4	ICAL	1	1.25	125.00	65-125	PASS
Standard5	ICAL	1	1.24	124.39	65-125	PASS
Standard6	ICAL	1	1.0059	100.59	65-125	PASS
Standard7	ICAL	1	0.99	98.63	65-125	PASS
ICV	ICV	1	1.0095	100.95	65-125	PASS
ICB	ICB	1	1	99.83	65-125	PASS
LLICV	CCV1	1	1.036	103.56	65-125	PASS
ICSA1	ICSA	1	1.018	101.83	65-125	PASS
ICSAB1	ICSAB	1	0.83	83.016	65-125	PASS
MB-57237	MBLK	1	1	99.55	65-125	PASS
LCS-57237	LCS	1	0.99	99.26	65-125	PASS
N019543-001C	SAMP	1	0.96	96.19	65-125	PASS
N019543-001C	SAMP	5	1.0061	100.61	65-125	PASS
N019543-001C-PS	PS	1	0.94	93.53	65-125	PASS
N019543-001C-MS	MS	1	0.95	95.4	65-125	PASS
N019543-001C-MSD	MSD	1	0.95	94.71	65-125	PASS
N019543-002C	SAMP	1	0.95	95.48	65-125	PASS
N019543-003C	SAMP	1	0.96	95.92	65-125	PASS
N019543-004C	SAMP	1	0.96	95.64	65-125	PASS
CCV1	CCV	1	1.036	103.63	65-125	PASS
CCB1	CCB	1	1.02	101.97	65-125	PASS
N019543-005C	SAMP	1	0.94	93.8	65-125	PASS
N019543-006C	SAMP	1	0.96	96.11	65-125	PASS
N019543-007C	SAMP	1	0.97	96.95	65-125	PASS
N019543-008C	SAMP	1	0.99	98.7	65-125	PASS
N019543-009C	SAMP	1	0.96	95.97	65-125	PASS
N019543-010C	SAMP	1	0.97	96.74	65-125	PASS
N019543-011C	SAMP	1	0.95	95.23	65-125	PASS
N019543-011C-MS	MS	1	1.0073	100.73	65-125	PASS
N019543-012C	SAMP	1	1.0024	100.24	65-125	PASS
N019543-013C	SAMP	1	0.92	92.47	65-125	PASS
CCV2	CCV	1	1.027	102.74	65-125	PASS
CCB2	CCB	1	1.021	102.08	65-125	PASS
N019543-014C	SAMP	1	0.95	94.9	65-125	PASS
N019559-001C	SAMP	1	0.95	95.15	65-125	PASS
N019559-002C	SAMP	1	1	99.87	65-125	PASS
N019559-003C	SAMP	1	0.96	95.87	65-125	PASS

INTERNAL STANDARD: 160504A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N019559-004C	SAMP	1	0.95	95.33	65-125	PASS
N019559-005C	SAMP	1	0.94	93.74	65-125	PASS
N019559-006C	SAMP	1	0.99	99.2	65-125	PASS
LCS-57237	LCS	1	0.97	97.16	65-125	PASS
CCV3	CCV	1	1.031	103.13	65-125	PASS
CCB3	CCB	1	1.018	101.77	65-125	PASS
LLCCV1	CCV2	1	1.063	106.29	65-125	PASS
ICSA2	ICSA	1	1.049	104.9	65-125	PASS
ICSAB2	ICSAB	1	0.85	84.59	65-125	PASS

INTERNAL STANDARD: 160511B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0019	100.19	65-125	PASS
Standard2	ICAL	1	1.0099	100.99	65-125	PASS
Standard3	ICAL	1	1.075	107.53	65-125	PASS
Standard4	ICAL	1	1.044	104.4	65-125	PASS
Standard5	ICAL	1	1.056	105.62	65-125	PASS
Standard6	ICAL	1	0.98	98.23	65-125	PASS
Standard7	ICAL	1	0.96	96.48	65-125	PASS
ICV	ICV	1	0.97	97.43	65-125	PASS
ICB	ICB	1	1	99.53	65-125	PASS
LLICV	CCV1	1	1	99.7	65-125	PASS
ICSA1	ICSA	1	1.079	107.87	65-125	PASS
ICSA1	ICSA	1	1.027	102.7	65-125	PASS
ICSAB1	ICSAB	1	0.82	82.47	65-125	PASS
MB-58387	MBLK	1	1.0043	100.43	65-125	PASS
LCS1-58387	LCS	1	0.97	96.72	65-125	PASS
N019559-007C	SAMP	1	0.97	96.53	65-125	PASS
N019559-007C	SAMP	5	0.97	97.38	65-125	PASS
N019559-007C-PS	PS	1	0.89	88.51	65-125	PASS
N019559-007C-MS1	MS	1	0.89	88.76	65-125	PASS
N019559-007C-MSD1	MSD	1	0.87	87.28	65-125	PASS
N019559-008C	SAMP	1	0.93	92.74	65-125	PASS
N019559-009C	SAMP	1	0.92	92.45	65-125	PASS
N019559-010C	SAMP	1	0.91	91.35	65-125	PASS
CCV1	CCV	1	0.94	93.53	65-125	PASS
CCB1	CCB	1	0.95	94.96	65-125	PASS
N019559-011C	SAMP	1	0.9	89.98	65-125	PASS
N019559-012C	SAMP	1	0.9	89.95	65-125	PASS
N019606-001B	SAMP	1	0.86	86.44	65-125	PASS
N019606-002B	SAMP	1	0.87	87.44	65-125	PASS
N019606-003B	SAMP	1	0.89	88.95	65-125	PASS
N019607-003B	SAMP	1	0.84	84.43	65-125	PASS
CCV2	CCV	1	0.93	93.31	65-125	PASS
CCB2	CCB	1	0.94	94	65-125	PASS
LCS1-58387	LCS	1	0.92	92.19	65-125	PASS
CCV3	CCV	1	0.91	91.15	65-125	PASS
CCB3	CCB	1	0.93	93.42	65-125	PASS
LLCCV1	CCV2	1	0.94	93.64	65-125	PASS
ICSA2	ICSA	1	0.97	97.44	65-125	PASS
ICSAB2	ICSAB	1	0.79	78.91	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019559
Test Method: EPA 6010B
Analysis Date: 05/04/16

Matrix: Groundwater
Batch No.: 57237

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019543-001C DT 5X	Iron	ug/L	121.1417	NA	114.2178	6.06%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019559
Test Method: EPA 6010B
Analysis Date: 05/11/16

Matrix: Groundwater
Batch No.: 58387

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019559-007C DT 5X	Iron	ug/L	41.55049	NA	49.26449	15.66%	10

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N019543-001C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **108259**
Client ID:	**ZZZZZZ**	Batch ID: **57237**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/4/2016**	SeqNo: **2315872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	196.327	20	100.0	114.2	82.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	N019559-007C-PS	SampType:	PS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	108415
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324076

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	153.079	20	100.0	49.26	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57247
ASSET #: N019559

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/6/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?		X				
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of Se in STD 2 failed > 15%. However %RSD of LLICV passed criteria.
%RSD of Se in N019559-002B & 008B failed > 15%. For rerun.
%Rec of Ba in ICSAB5 failed, low bias. Ba for rerun.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/16/2016 Date: ____

2nd Level Reviewer 5/17/2016 Date: ____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57247
ASSET #: N019559

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/9/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For rerun of Ba & Se in N019559-002B & 008B only.
%RSD of Se in N019559-008B failed > 15%. Se for rerun.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/16/2016 Date: —

2nd Level Reviewer 5/17/2016 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 57247
ASSET #: N019559

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/10/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Se in N019559-008B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/16/2016 Date: —

2nd Level Reviewer 5/17/2016 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N019559-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.33148 * 1 * (25/25)

Arsenic , ug/L = 2.331480

Reporting results in two significant figures,

Arsenic , ug/L = 2.3

% RSD SUMMARY

PERCENT RSD SUMMARY: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	4.18	15	PASS	0.094	6.81	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	3	15	PASS	0.49	4.52	15	PASS
Std3-5/50 ppb	ICAL	1	5.43	1.61	15	PASS	5.21	0.84	15	PASS
Std4-10/100 ppb	ICAL	1	10.38	0.66	15	PASS	10.26	1.54	15	PASS
Std5-20/200 ppb	ICAL	1	20.72	1.091	15	PASS	20.94	1.066	15	PASS
Std6-40/400 ppb	ICAL	1	41.084	0.13	15	PASS	41.8	1.45	15	PASS
Std7-100/1000 ppb	ICAL	1	102.15	0.53	15	PASS	103.22	0.94	15	PASS
Std8-200/2000 ppb	ICAL	1	198.61	1.2	15	PASS	197.92	1.2	15	PASS
ICV	ICV	1	107.45	0.32	15	PASS	10.71	1.0051	15	PASS
ICB	ICB	1	0.005	37.13	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.12	1.96	20	PASS	1.045	1.32	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.18	8.51	15	PASS
ICSAB1	ICSAB	1	16.048	0.14	15	PASS	20.81	0.93	15	PASS
CCV1	CCV	1	20.93	0.87	15	PASS	21.28	1.76	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.12	2.049	20	PASS	1.11	1.2	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.14	3.72	15	PASS
ICSAB2	ICSAB	1	16.17	0.15	15	PASS	20.92	0.89	15	PASS
CCV2	CCV	1	21.39	1.34	15	PASS	20.67	1.61	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	21.23	0.5	15	PASS	20.53	0.51	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	21.32	0.61	15	PASS	21.055	1.11	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.035	37.52	15	<PQL
LLCCV2	CCV2	1	1.17	1.19	20	PASS	1.17	0.36	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.21	11.6	15	PASS
ICSAB3	ICSAB	1	14.41	1.53	15	PASS	20.84	0.47	15	PASS
MB-57247	MBLK	1	<0.000	N/A	15	<PQL	0.29	6.75	15	PASS
LCS-57247	LCS	1	110.77	0.67	15	PASS	10.81	1.44	15	PASS
N019559-001B	SAMP	1	137.96	0.78	15	PASS	0.12	15.21	15	<PQL
N019559-001B	SAMP	5	28.48	0.67	15	PASS	0.16	19.12	15	<PQL
CCV5	CCV	1	21.38	0.53	15	PASS	21.16	0.1	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.094	18.27	15	<PQL
N019559-001B-PS	PS	1	235.43	0.91	15	PASS	9.9	1.062	15	PASS
N019559-001B-MS	MS	1	236.61	0.79	15	PASS	10.031	0.51	15	PASS
N019559-001B-MSD	MSD	1	237.91	0.52	15	PASS	9.94	0.28	15	PASS
N019559-002B	SAMP	1	132.062	1.058	15	PASS	<0.000	N/A	15	<PQL
N019559-003B	SAMP	1	140.31	1.00019	15	PASS	<0.000	N/A	15	<PQL
N019559-004B	SAMP	1	134.21	0.58	15	PASS	<0.000	N/A	15	<PQL
N019559-005B	SAMP	1	138.15	0.51	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019559-006B	SAMP	1	136.49	0.83	15	PASS	<0.000	N/A	15	<PQL
N019559-007B	SAMP	1	132.31	0.43	15	PASS	<0.000	N/A	15	<PQL
N019559-008B	SAMP	1	131.068	0.18	15	PASS	<0.000	N/A	15	<PQL
CCV6	CCV	1	21.41	0.097	15	PASS	20.84	1.07	15	PASS
CCB6	CCB	1	0.00088	246.45	15	<PQL	0.036	42.59	15	<PQL
N019559-009B	SAMP	1	138.86	0.48	15	PASS	<0.000	N/A	15	<PQL
N019559-010B	SAMP	1	133.64	1.99	15	PASS	<0.000	N/A	15	<PQL
N019559-011B	SAMP	1	133.9	1.23	15	PASS	<0.000	N/A	15	<PQL
N019559-011B-MS	MS	1	235.62	0.92	15	PASS	9.81	0.93	15	PASS
N019559-012B	SAMP	1	133.81	0.34	15	PASS	<0.000	N/A	15	<PQL
N019559-013B	SAMP	1	126.44	1.34	15	PASS	<0.000	N/A	15	<PQL
N019559-014B	SAMP	1	134.39	1.54	15	PASS	<0.000	N/A	15	<PQL
N019570-001B	SAMP	1	63.71	0.24	15	PASS	89.36	0.69	15	PASS
N019570-002B	SAMP	1	43.23	0.81	15	PASS	0.71	1.93	15	PASS
N019570-003B	SAMP	1	133.074	1.79	15	PASS	19.76	1.086	15	PASS
CCV7	CCV	1	21.64	0.94	15	PASS	20.89	3.07	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.0063	206.71	15	<PQL
LLCCV3	CCV2	1	1.15	1.66	20	PASS	1.1	2.46	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.18	4.77	15	PASS
ICSAB4	ICSAB	1	15.11	1.15	15	PASS	20.92	1.29	15	PASS
N019570-004B	SAMP	1	76.87	0.58	15	PASS	373.092	1.67	15	PASS
N019570-005B	SAMP	1	73.83	0.31	15	PASS	3162.41	1	15	PASS
CCV8	CCV	1	21.74	0.52	15	PASS	20.87	0.93	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.023	47.065	15	<PQL
CCV9	CCV	1	21.67	0.35	15	PASS	21.2	1.28	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	0.099	7.95	15	PASS
CCV10	CCV	1	21.59	1.085	15	PASS	20.89	1.13	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	0.022	65.67	15	<PQL
LLCCV4	CCV2	1	1.16	1.38	20	PASS	1.13	3.24	20	PASS
ICSA5	ICSA	1	<0.000	N/A	15	<PQL	0.2	10.57	15	PASS
ICSAB5	ICSAB	1	15.35	0.87	15	PASS	21.46	2.17	15	PASS

PERCENT RSD SUMMARY: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	7.096	15	PASS	0.097	27.55	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.54	4.81	15	PASS	0.49	4.68	15	PASS
Std3-5/50 ppb	ICAL	1	5.35	1.63	15	PASS	5.057	1.21	15	PASS
Std4-10/100 ppb	ICAL	1	10.32	0.61	15	PASS	9.91	1.66	15	PASS
Std5-20/200 ppb	ICAL	1	20.67	0.79	15	PASS	20.15	0.94	15	PASS
Std6-40/400 ppb	ICAL	1	41.17	0.59	15	PASS	39.7	0.43	15	PASS
Std7-100/1000 ppb	ICAL	1	101.43	1.32	15	PASS	99.64	1.18	15	PASS
Std8-200/2000 ppb	ICAL	1	198.96	0.15	15	PASS	200.23	1.11	15	PASS
ICV	ICV	1	103.81	1.23	15	PASS	10.39	0.23	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.011	68.097	15	<PQL
LLICV	CCV1	1	0.6	5.48	20	PASS	0.085	17.4	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	16.82	1.37	15	PASS	20.99	2.67	15	PASS
CCV1	CCV	1	20.41	1.54	15	PASS	19.91	0.12	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.58	9.41	20	PASS	0.11	13.76	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	16.91	1.33	15	PASS	20.95	1.22	15	PASS
CCV2	CCV	1	20.55	2.076	15	PASS	20.016	1.64	15	PASS
CCB2	CCB	1	0.0069	48.0085	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.073	0.65	15	PASS	20.2	1.1	15	PASS
CCB3	CCB	1	0.022	34.99	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.85	1.49	15	PASS	19.77	1.3	15	PASS
CCB4	CCB	1	0.019	18.58	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.61	2.23	20	PASS	0.097	29.81	20	<PQL
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	16.76	2.44	15	PASS	20.64	2.59	15	PASS
MB-57247	MBLK	1	0.0087	146.022	15	<PQL	<0.000	N/A	15	<PQL
LCS-57247	LCS	1	102.4	0.39	15	PASS	10.09	1.77	15	PASS
N019559-001B	SAMP	1	<0.000	N/A	15	<PQL	2.33	4.59	15	PASS
N019559-001B	SAMP	5	<0.000	N/A	15	<PQL	0.48	10.2	15	PASS
CCV5	CCV	1	20.57	0.46	15	PASS	19.63	1.66	15	PASS
CCB5	CCB	1	0.012	101.2	15	<PQL	<0.000	N/A	15	<PQL
N019559-001B-PS	PS	1	94.17	0.79	15	PASS	12.11	0.13	15	PASS
N019559-001B-MS	MS	1	94.88	0.47	15	PASS	12.27	2.86	15	PASS
N019559-001B-MSD	MSD	1	94.42	0.98	15	PASS	12.36	1.98	15	PASS
N019559-002B	SAMP	1	<0.000	N/A	15	<PQL	2.2	4.19	15	PASS
N019559-003B	SAMP	1	<0.000	N/A	15	<PQL	2.31	6.92	15	PASS
N019559-004B	SAMP	1	<0.000	N/A	15	<PQL	2.25	2.82	15	PASS
N019559-005B	SAMP	1	<0.000	N/A	15	<PQL	2.31	2.45	15	PASS

PERCENT RSD SUMMARY: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019559-006B	SAMP	1	<0.000	N/A	15	<PQL	2.22	0.94	15	PASS
N019559-007B	SAMP	1	<0.000	N/A	15	<PQL	2.26	2.56	15	PASS
N019559-008B	SAMP	1	<0.000	N/A	15	<PQL	2.18	1.061	15	PASS
CCV6	CCV	1	20.45	0.65	15	PASS	19.66	1.018	15	PASS
CCB6	CCB	1	0.0095	84.45	15	<PQL	<0.000	N/A	15	<PQL
N019559-009B	SAMP	1	<0.000	N/A	15	<PQL	2.37	3.02	15	PASS
N019559-010B	SAMP	1	<0.000	N/A	15	<PQL	2.27	5.81	15	PASS
N019559-011B	SAMP	1	<0.000	N/A	15	<PQL	2.22	5.94	15	PASS
N019559-011B-MS	MS	1	94.25	1.56	15	PASS	12.39	2.065	15	PASS
N019559-012B	SAMP	1	0.67	7.14	15	PASS	2.18	3.73	15	PASS
N019559-013B	SAMP	1	8.1	1.58	15	PASS	2.015	0.73	15	PASS
N019559-014B	SAMP	1	3.8	1.52	15	PASS	2.057	1.73	15	PASS
N019570-001B	SAMP	1	36.83	0.76	15	PASS	10.024	2.99	15	PASS
N019570-002B	SAMP	1	15.041	0.34	15	PASS	6.56	2.87	15	PASS
N019570-003B	SAMP	1	2.4	2.62	15	PASS	2.093	5.065	15	PASS
CCV7	CCV	1	20.52	2.14	15	PASS	19.99	1.41	15	PASS
CCB7	CCB	1	0.0087	126.94	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	0.59	3.52	20	PASS	0.11	13.16	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	17.24	1.056	15	PASS	20.77	1.26	15	PASS
N019570-004B	SAMP	1	151.61	1.63	15	PASS	3.42	4.31	15	PASS
N019570-005B	SAMP	1	1.32	3.92	15	PASS	2.099	2.18	15	PASS
CCV8	CCV	1	20.26	0.78	15	PASS	19.77	1.58	15	PASS
CCB8	CCB	1	0.016	18.91	15	<PQL	<0.000	N/A	15	<PQL
CCV9	CCV	1	20.43	0.86	15	PASS	19.46	1.76	15	PASS
CCB9	CCB	1	0.011	11.49	15	PASS	<0.000	N/A	15	<PQL
CCV10	CCV	1	20.37	0.71	15	PASS	19.62	1.81	15	PASS
CCB10	CCB	1	0.011	68.26	15	<PQL	<0.000	N/A	15	<PQL
LLCCV4	CCV2	1	0.6	4.046	20	PASS	0.092	23.14	20	<PQL
ICSA5	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB5	ICSAB	1	17.9	0.95	15	PASS	20.85	0.73	15	PASS

PERCENT RSD SUMMARY: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.097	29.24	15	<PQL	0.092	7.71	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	18.063	15	NR!	0.47	3.47	15	PASS
Std3-5/50 ppb	ICAL	1	5.13	6.74	15	PASS	4.91	1.12	15	PASS
Std4-10/100 ppb	ICAL	1	10.071	6.66	15	PASS	9.82	1.47	15	PASS
Std5-20/200 ppb	ICAL	1	19.98	6.15	15	PASS	19.77	0.68	15	PASS
Std6-40/400 ppb	ICAL	1	40.39	0.92	15	PASS	39.66	0.45	15	PASS
Std7-100/1000 ppb	ICAL	1	99.84	0.77	15	PASS	99.46	1.79	15	PASS
Std8-200/2000 ppb	ICAL	1	200	1.2	15	PASS	200.37	1.69	15	PASS
ICV	ICV	1	10.51	0.21	15	PASS	10.81	0.24	15	PASS
ICB	ICB	1	0.015	114.21	15	<PQL	0.2	3.62	15	PASS
LLICV	CCV1	1	0.45	28.5	20	<PQL	0.56	1.72	20	PASS
ICSA1	ICSA	1	0.018	70.15	15	<PQL	0.067	4.21	15	PASS
ICSAB1	ICSAB	1	19.95	0.56	15	PASS	23.23	0.76	15	PASS
CCV1	CCV	1	19.81	5.7	15	PASS	19.87	1.91	15	PASS
CCB1	CCB	1	0.024	99.71	15	<PQL	0.11	14.5	15	PASS
LLCCV1	CCV2	1	0.58	19.75	20	PASS	0.53	7.039	20	PASS
ICSA2	ICSA	1	0.012	173.21	15	<PQL	0.036	13.57	15	PASS
ICSAB2	ICSAB	1	19.78	1.34	15	PASS	23.3	0.7	15	PASS
CCV2	CCV	1	19.31	1.083	15	PASS	20.082	0.99	15	PASS
CCB2	CCB	1	0.011	99.67	15	<PQL	0.074	9.68	15	PASS
CCV3	CCV	1	20.44	2.52	15	PASS	19.92	0.39	15	PASS
CCB3	CCB	1	0.018	173.21	15	<PQL	0.14	7.72	15	PASS
CCV4	CCV	1	20.31	2.056	15	PASS	20.081	0.95	15	PASS
CCB4	CCB	1	0.0039	173.21	15	<PQL	0.025	28.74	15	<PQL
LLCCV2	CCV2	1	0.55	13.56	20	PASS	0.54	3.8	20	PASS
ICSA3	ICSA	1	0.042	44.79	15	<PQL	0.026	22.92	15	<PQL
ICSAB3	ICSAB	1	19.7	5.18	15	PASS	23.1	1.86	15	PASS
MB-57247	MBLK	1	0.0085	173.21	15	<PQL	0.11	16.83	15	<PQL
LCS-57247	LCS	1	10.49	5.24	15	PASS	10.38	1.69	15	PASS
N019559-001B	SAMP	1	1.87	6.8	15	PASS	5.5	1.52	15	PASS
N019559-001B	SAMP	5	0.39	7.078	15	PASS	1.051	0.82	15	PASS
CCV5	CCV	1	19.75	2.53	15	PASS	19.89	0.76	15	PASS
CCB5	CCB	1	0	N/A	15	<PQL	0.061	6.83	15	PASS
N019559-001B-PS	PS	1	11.56	4.58	15	PASS	16.16	0.39	15	PASS
N019559-001B-MS	MS	1	11.73	4.37	15	PASS	16.23	1.61	15	PASS
N019559-001B-MSD	MSD	1	11.59	1.54	15	PASS	16.086	0.76	15	PASS
N019559-002B	SAMP	1	1.5	17.3	15	NR!	5.18	0.52	15	PASS
N019559-003B	SAMP	1	1.75	6.31	15	PASS	5.44	1.53	15	PASS
N019559-004B	SAMP	1	1.72	8.62	15	PASS	5.15	0.54	15	PASS
N019559-005B	SAMP	1	2.022	9.6	15	PASS	5.38	0.5	15	PASS

PERCENT RSD SUMMARY: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019559-006B	SAMP	1	1.85	6.93	15	PASS	5.28	0.97	15	PASS
N019559-007B	SAMP	1	1.7	2.16	15	PASS	4.97	1.63	15	PASS
N019559-008B	SAMP	1	1.46	20.6	15	NR!	4.99	0.9	15	PASS
CCV6	CCV	1	19.57	2.59	15	PASS	20.13	1.56	15	PASS
CCB6	CCB	1	0.023	125.13	15	<PQL	0.07	6.51	15	PASS
N019559-009B	SAMP	1	1.68	4.22	15	PASS	5.41	3.28	15	PASS
N019559-010B	SAMP	1	1.73	11.18	15	PASS	5.1	1.75	15	PASS
N019559-011B	SAMP	1	1.56	10.47	15	PASS	5.18	1.52	15	PASS
N019559-011B-MS	MS	1	11.39	3.11	15	PASS	16.13	1.26	15	PASS
N019559-012B	SAMP	1	1.71	9.59	15	PASS	5.31	2.13	15	PASS
N019559-013B	SAMP	1	1.32	9.5	15	PASS	5.14	1.45	15	PASS
N019559-014B	SAMP	1	1.39	20	15	NR!	5.14	0.97	15	PASS
N019570-001B	SAMP	1	0.9	21.78	15	NR!	71.053	2.3	15	PASS
N019570-002B	SAMP	1	2.31	16.65	15	NR!	59	1.023	15	PASS
N019570-003B	SAMP	1	2.34	3	15	PASS	22.3	0.7	15	PASS
CCV7	CCV	1	20.61	1.56	15	PASS	20.2	1.34	15	PASS
CCB7	CCB	1	0.018	173.21	15	<PQL	0.091	8.64	15	PASS
LLCCV3	CCV2	1	0.54	3.39	20	PASS	0.52	9.9	20	PASS
ICSA4	ICSA	1	0.023	69.23	15	<PQL	0.029	12.091	15	PASS
ICSAB4	ICSAB	1	20.058	3.91	15	PASS	22.9	0.3	15	PASS
N019570-004B	SAMP	1	0.93	9.82	15	PASS	22.63	0.94	15	PASS
N019570-005B	SAMP	1	3.0075	2.97	15	PASS	8.04	2.14	15	PASS
CCV8	CCV	1	19.76	1.61	15	PASS	19.97	1.25	15	PASS
CCB8	CCB	1	0.019	44.34	15	<PQL	0.067	17.24	15	<PQL
CCV9	CCV	1	20.21	1.7	15	PASS	20	0.97	15	PASS
CCB9	CCB	1	0.0045	173.21	15	<PQL	0.078	2.73	15	PASS
CCV10	CCV	1	20.49	1.89	15	PASS	19.67	0.76	15	PASS
CCB10	CCB	1	0.019	114.27	15	<PQL	0.076	3.35	15	PASS
LLCCV4	CCV2	1	0.55	13.37	20	PASS	0.51	8.62	20	PASS
ICSA5	ICSA	1	0.025	92.75	15	<PQL	0.027	16.32	15	<PQL
ICSAB5	ICSAB	1	20.15	1.11	15	PASS	23.092	0.5	15	PASS

PERCENT RSD SUMMARY: 160509A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	2.34	15	PASS	0.12	53.16	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.56	1.64	15	PASS	0.5	14.71	15	PASS
Std3-5/50 ppb	ICAL	1	5.23	1.15	15	PASS	5.16	9.52	15	PASS
Std4-10/100 ppb	ICAL	1	10.35	0.95	15	PASS	9.73	2.9	15	PASS
Std5-20/200 ppb	ICAL	1	20.22	0.73	15	PASS	20.17	2.46	15	PASS
Std6-40/400 ppb	ICAL	1	40.51	0.18	15	PASS	40	2.71	15	PASS
Std7-100/1000 ppb	ICAL	1	101.12	0.28	15	PASS	99.73	1.74	15	PASS
Std8-200/2000 ppb	ICAL	1	199.29	0.32	15	PASS	200.13	1.6	15	PASS
ICV	ICV	1	104.9	0.55	15	PASS	10.5	1.38	15	PASS
ICB	ICB	1	0.028	12.35	15	PASS	0.039	63.93	15	<PQL
LLICV	CCV1	1	1.18	1.85	20	PASS	0.58	4.37	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.0066	100.59	15	<PQL
ICSAB1	ICSAB	1	17.28	1.075	15	PASS	18.53	1.98	15	PASS
CCV1	CCV	1	21.02	0.15	15	PASS	19.72	1.86	15	PASS
CCB1	CCB	1	0.0048	28.67	15	<PQL	0.018	191.21	15	<PQL
MB-57247	MBLK	1	0.0033	37.58	15	<PQL	<0.000	0	15	PASS
LCS-57247	LCS	1	106.59	0.55	15	PASS	10.45	0.72	15	PASS
N019559-001B	SAMP	5	27.35	0.68	15	PASS	0.42	17.027	15	<PQL
N019559-001B	SAMP	25	5.52	1.27	15	PASS	0.063	38.49	15	<PQL
N019559-001B-PS	PS	5	48.13	0.12	15	PASS	2.38	13.94	15	PASS
N019559-001B-MS	MS	5	47.89	0.4	15	PASS	2.31	4.049	15	PASS
N019559-001B-MSD	MSD	5	47.78	0.76	15	PASS	2.25	4.7	15	PASS
N019559-002B	SAMP	1	130.7	1.2	15	PASS	1.68	7.98	15	PASS
N019559-003B	SAMP	1	135.49	0.74	15	PASS	1.76	2.93	15	PASS
CCV2	CCV	1	20.6	0.76	15	PASS	20.14	1.84	15	PASS
CCB2	CCB	1	0.0043	41.53	15	<PQL	<0.000	N/A	15	<PQL
N019559-004B	SAMP	1	130.37	1.48	15	PASS	1.52	8.26	15	PASS
N019559-005B	SAMP	1	134.41	0.85	15	PASS	1.69	14.96	15	PASS
N019559-006B	SAMP	1	134.27	1.26	15	PASS	1.54	9.84	15	PASS
N019559-007B	SAMP	1	131.22	2.19	15	PASS	1.73	5.68	15	PASS
N019559-008B	SAMP	1	128.88	1.7	15	PASS	1.62	18.78	15	NR!
N019559-009B	SAMP	1	140.18	0.67	15	PASS	1.59	13.46	15	PASS
N019559-010B	SAMP	1	131.42	1.28	15	PASS	1.79	11.15	15	PASS
N019559-011B	SAMP	5	27.61	0.45	15	PASS	0.36	25.96	15	<PQL
N019559-011B-MS	MS	5	48.47	0.18	15	PASS	2.27	7.28	15	PASS
N019559-012B	SAMP	1	135.53	0.79	15	PASS	1.6	13.43	15	PASS
CCV3	CCV	1	20.87	0.81	15	PASS	20.0021	0.77	15	PASS
CCB3	CCB	1	0.0039	44.4	15	<PQL	<0.000	N/A	15	<PQL
N019559-013B	SAMP	1	123.8	1.22	15	PASS	1.38	13.57	15	PASS
N019559-014B	SAMP	1	131.19	1.55	15	PASS	1.41	14.34	15	PASS

PERCENT RSD SUMMARY: 160509A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019570-001B	SAMP	5	14.46	0.44	15	PASS	0.21	18.48	15	<PQL
N019570-002B	SAMP	5	9.3	1.64	15	PASS	0.51	15.98	15	NR!
N019570-003B	SAMP	5	27.44	1.078	15	PASS	0.48	32.52	15	<PQL
N019570-004B	SAMP	5	16.36	0.15	15	PASS	0.19	18.052	15	<PQL
N019570-005B	SAMP	5	15.2	0.6	15	PASS	0.5	5.039	15	PASS
N019570-005B	SAMP	25	0.42	7.53	15	PASS	0.13	4.66	15	PASS
N019570-002B	SAMP	5	9.41	0.83	15	PASS	0.49	23.82	15	<PQL
CCV4	CCV	1	21.43	0.63	15	PASS	19.41	2.66	15	PASS
CCB4	CCB	1	0.0022	89.87	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.19	1.44	20	PASS	0.48	19.64	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.021	107.86	15	<PQL
ICSAB2	ICSAB	1	17.79	1.017	15	PASS	19.18	4.1	15	PASS
CCV5	CCV	1	21.87	0.55	15	PASS	18.96	3.45	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	21.78	0.57	15	PASS	19.61	2.93	15	PASS
CCB6	CCB	1	0.0033	69	15	<PQL	<0.000	N/A	15	<PQL
CCV7	CCV	1	21.77	0.87	15	PASS	19.14	1.23	15	PASS
CCB7	CCB	1	0.0038	31.37	15	<PQL	0.0034	794.23	15	<PQL
LLCCV2	CCV2	1	1.18	2.11	20	PASS	0.47	10.52	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.022	139.58	15	<PQL
ICSAB3	ICSAB	1	18.82	0.9	15	PASS	19.16	1.53	15	PASS
CCV8	CCV	1	22.11	0.44	15	PASS	19.27	1.56	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV9	CCV	1	22.42	0.42	15	PASS	20.26	3.24	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	0.0085	1.23	15	PASS
CCV10	CCV	1	22.33	0.51	15	PASS	20.36	2.78	15	PASS
CCB10	CCB	1	0.0021	196.13	15	<PQL	0.0026	249.98	15	<PQL
LLCCV3	CCV2	1	1.24	1	20	PASS	0.51	10.96	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.013	172.57	15	<PQL
ICSAB4	ICSAB	1	21.44	13.45	15	PASS	20.31	1.99	15	PASS
CCV11	CCV	1	22.65	0.32	15	PASS	20.95	5.32	15	PASS
CCB11	CCB	1	0.0057	24.45	15	<PQL	<0.000	N/A	15	<PQL
CCV12	CCV	1	22.7	0.46	15	PASS	19.77	1.65	15	PASS
CCB12	CCB	1	0.0048	58.084	15	<PQL	0.0031	427.94	15	<PQL
LLCCV4	CCV2	1	1.23	0.66	20	PASS	0.5	20.5	20	<PQL
ICSA5	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB5	ICSAB	1	17.43	0.71	15	PASS	19.55	3.44	15	PASS

PERCENT RSD SUMMARY: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	15.65	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.47	25.0079	15	<PQL
Std3-5/50 ppb	ICAL	1	4.8	2.32	15	PASS
Std4-10/100 ppb	ICAL	1	10.0092	4.96	15	PASS
Std5-20/200 ppb	ICAL	1	20.019	4.2	15	PASS
Std6-40/400 ppb	ICAL	1	40.16	1.033	15	PASS
Std7-100/1000 ppb	ICAL	1	104.36	0.72	15	PASS
Std8-200/2000 ppb	ICAL	1	197.79	1.76	15	PASS
ICV	ICV	1	9.13	5	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.41	5.21	20	PASS
ICSA1	ICSA	1	0.015	122.67	15	<PQL
ICSAB1	ICSAB	1	19.69	1.9	15	PASS
N019559-008B	SAMP	1	1.63	12.23	15	PASS
CCV1	CCV	1	19.84	2.61	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.0027	2.026	15	PASS
CCB2	CCB	1	0.0032	216.65	15	<PQL
CCV3	CCV	1	19.61	1.14	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
CCV4	CCV	1	18.97	0.98	15	PASS
CCB4	CCB	1	0.012	260.33	15	<PQL
LLCCV1	CCV2	1	0.45	16.0082	20	PASS
ICSA2	ICSA	1	0.0053	423.4	15	<PQL
ICSAB2	ICSAB	1	18.73	4.31	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160506B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0506001.D	RINSE	RINSE	1	05/06/16 2:30 PM
B0506002.D	Cal Blank	IBLK	1	05/06/16 2:35 PM
B0506003.D	Std1-0.1/1 ppb	ICAL	1	05/06/16 2:41 PM
B0506004.D	Std2-0.5/5 ppb	ICAL	1	05/06/16 2:46 PM
B0506005.D	Std3-5/50 ppb	ICAL	1	05/06/16 2:52 PM
B0506006.D	Std4-10/100 ppb	ICAL	1	05/06/16 2:57 PM
B0506007.D	Std5-20/200 ppb	ICAL	1	05/06/16 3:03 PM
B0506008.D	Std6-40/400 ppb	ICAL	1	05/06/16 3:08 PM
B0506009.D	Std7-100/1000 ppb	ICAL	1	05/06/16 3:14 PM
B0506010.D	Std8-200/2000 ppb	ICAL	1	05/06/16 3:20 PM
B0506011.D	ICV	ICV	1	05/06/16 3:25 PM
B0506012.D	ICB	ICB	1	05/06/16 3:31 PM
B0506013.D	LLICV	CCV1	1	05/06/16 3:36 PM
B0506014.D	ICSA1	ICSA	1	05/06/16 3:46 PM
B0506015.D	ICSAB1	ICSAB	1	05/06/16 3:47 PM
B0506016.D	MB-57283	MBLK	1	05/06/16 3:53 PM
B0506017.D	LCS-57283	LCS	1	05/06/16 3:58 PM
B0506018.D	N019567-002C	SAMP	25	05/06/16 4:05 PM
B0506019.D	N019567-002C	SAMP	125	05/06/16 4:10 PM
B0506020.D	N019567-002C-PS	PS	25	05/06/16 4:16 PM
B0506021.D	N019567-002C-MS	MS	25	05/06/16 4:21 PM
B0506022.D	N019567-002C-MSD	MSD	25	05/06/16 4:27 PM
B0506023.D	CCV1	CCV	1	05/06/16 4:32 PM
B0506024.D	CCB1	CCB	1	05/06/16 4:38 PM
B0506025.D	LLCCV1	CCV2	1	05/06/16 4:43 PM
B0506026.D	ICSA2	ICSA	1	05/06/16 4:49 PM
B0506027.D	ICSAB2	ICSAB	1	05/06/16 4:54 PM
B0506028.D	N019534-002B	SAMP	5	05/06/16 5:03 PM
B0506029.D	N019534-003B	SAMP	5	05/06/16 5:09 PM
B0506030.D	N019534-005B	SAMP	5	05/06/16 5:14 PM
B0506031.D	N019534-007B	SAMP	5	05/06/16 5:20 PM
B0506032.D	N019534-008B	SAMP	5	05/06/16 5:25 PM
B0506033.D	N019543-009B	SAMP	5	05/06/16 5:31 PM
B0506034.D	N019534-010B	SAMP	5	05/06/16 5:36 PM
B0506035.D	N019535-007B	SAMP	5	05/06/16 5:42 PM
B0506036.D	N019543-014B	SAMP	1	05/06/16 5:47 PM
B0506037.D	N019544-002B	SAMP	5	05/06/16 5:53 PM
B0506038.D	CCV2	CCV	1	05/06/16 6:00 PM
B0506039.D	CCB2	CCB	1	05/06/16 6:06 PM
B0506040.D	MB-57228	MBLK	1	05/06/16 6:11 PM
B0506041.D	LCS-57228	LCS	1	05/06/16 6:17 PM
B0506042.D	N019492-015B	SAMP	1	05/06/16 6:22 PM

INJECTION LOG: 160506B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0506043.D	N019542-001B	SAMP	1	05/06/16 6:28 PM
B0506044.D	N019542-001B	SAMP	5	05/06/16 6:33 PM
B0506045.D	N019542-001B-PS	PS	1	05/06/16 6:39 PM
B0506046.D	N019542-001B-MS	MS	1	05/06/16 6:44 PM
B0506047.D	N019542-001B-MSD	MSD	1	05/06/16 6:50 PM
B0506048.D	N019542-002B	SAMP	1	05/06/16 6:56 PM
B0506049.D	N019542-003B	SAMP	1	05/06/16 7:01 PM
B0506050.D	CCV3	CCV	1	05/06/16 7:07 PM
B0506051.D	CCB3	CCB	1	05/06/16 7:12 PM
B0506052.D	N019542-004B	SAMP	1	05/06/16 7:18 PM
B0506053.D	N019542-005B	SAMP	1	05/06/16 7:23 PM
B0506054.D	N019542-006B	SAMP	1	05/06/16 7:29 PM
B0506055.D	N019542-007B	SAMP	1	05/06/16 7:34 PM
B0506056.D	N019542-008B	SAMP	1	05/06/16 7:40 PM
B0506057.D	N019542-009B	SAMP	1	05/06/16 7:45 PM
B0506058.D	N019542-010B	SAMP	1	05/06/16 7:51 PM
B0506059.D	N019542-011B	SAMP	1	05/06/16 7:56 PM
B0506060.D	N019542-011B-MS	MS	1	05/06/16 8:02 PM
B0506061.D	N019542-012B	SAMP	1	05/06/16 8:08 PM
B0506062.D	CCV4	CCV	1	05/06/16 8:14 PM
B0506063.D	CCB4	CCB	1	05/06/16 8:24 PM
B0506064.D	LLCCV2	CCV2	1	05/06/16 8:29 PM
B0506065.D	ICSA3	ICSA	1	05/06/16 8:35 PM
B0506066.D	ICSAB3	ICSAB	1	05/06/16 8:40 PM
B0506067.D	N019542-013B	SAMP	1	05/06/16 8:46 PM
B0506068.D	N019542-014B	SAMP	1	05/06/16 8:51 PM
B0506069.D	N019542-015B	SAMP	1	05/06/16 8:57 PM
B0506070.D	N019542-016B	SAMP	1	05/06/16 9:02 PM
B0506071.D	N019542-019B	SAMP	1	05/06/16 9:08 PM
B0506072.D	N019542-020B	SAMP	1	05/06/16 9:13 PM
B0506073.D	MB-57247	MBLK	1	05/06/16 9:19 PM
B0506074.D	LCS-57247	LCS	1	05/06/16 9:24 PM
B0506075.D	N019559-001B	SAMP	1	05/06/16 9:30 PM
B0506076.D	N019559-001B	SAMP	5	05/06/16 9:36 PM
B0506077.D	CCV5	CCV	1	05/06/16 9:41 PM
B0506078.D	CCB5	CCB	1	05/06/16 9:47 PM
B0506079.D	N019559-001B-PS	PS	1	05/06/16 9:52 PM
B0506080.D	N019559-001B-MS	MS	1	05/06/16 9:58 PM
B0506081.D	N019559-001B-MSD	MSD	1	05/06/16 10:03 PM
B0506082.D	N019559-002B	SAMP	1	05/06/16 10:09 PM
B0506083.D	N019559-003B	SAMP	1	05/06/16 10:14 PM
B0506084.D	N019559-004B	SAMP	1	05/06/16 10:20 PM

INJECTION LOG: 160506B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0506085.D	N019559-005B	SAMP	1	05/06/16 10:25 PM
B0506086.D	N019559-006B	SAMP	1	05/06/16 10:31 PM
B0506087.D	N019559-007B	SAMP	1	05/06/16 10:36 PM
B0506088.D	N019559-008B	SAMP	1	05/06/16 10:42 PM
B0506089.D	CCV6	CCV	1	05/06/16 10:47 PM
B0506090.D	CCB6	CCB	1	05/06/16 10:53 PM
B0506091.D	N019559-009B	SAMP	1	05/06/16 10:58 PM
B0506092.D	N019559-010B	SAMP	1	05/06/16 11:04 PM
B0506093.D	N019559-011B	SAMP	1	05/06/16 11:10 PM
B0506094.D	N019559-011B-MS	MS	1	05/06/16 11:15 PM
B0506095.D	N019559-012B	SAMP	1	05/06/16 11:21 PM
B0506096.D	N019559-013B	SAMP	1	05/06/16 11:26 PM
B0506097.D	N019559-014B	SAMP	1	05/06/16 11:32 PM
B0506098.D	N019570-001B	SAMP	1	05/06/16 11:37 PM
B0506099.D	N019570-002B	SAMP	1	05/06/16 11:43 PM
B0506100.D	N019570-003B	SAMP	1	05/06/16 11:48 PM
B0506101.D	CCV7	CCV	1	05/06/16 11:54 PM
B0506102.D	CCB7	CCB	1	05/07/16 12:00 AM
B0506103.D	LLCCV3	CCV2	1	05/07/16 12:05 AM
B0506104.D	ICSA4	ICSA	1	05/07/16 12:11 AM
B0506105.D	ICSAB4	ICSAB	1	05/07/16 12:16 AM
B0506106.D	N019570-004B	SAMP	1	05/07/16 12:22 AM
B0506107.D	N019570-005B	SAMP	1	05/07/16 12:27 AM
B0506108.D	N019542-001B	SAMP	25	05/07/16 12:33 AM
B0506109.D	N019542-001B-PS	PS	5	05/07/16 12:38 AM
B0506110.D	N019542-001B-PS	PS	25	05/07/16 12:44 AM
B0506111.D	N019542-001B-MS	MS	5	05/07/16 12:49 AM
B0506112.D	N019542-001B-MS	MS	25	05/07/16 12:55 AM
B0506113.D	N019542-001B-MSD	MSD	5	05/07/16 1:01 AM
B0506114.D	N019542-001B-MSD	MSD	25	05/07/16 1:06 AM
B0506115.D	N019542-002B	SAMP	5	05/07/16 1:12 AM
B0506116.D	CCV8	CCV	1	05/07/16 1:17 AM
B0506117.D	CCB8	CCB	1	05/07/16 1:23 AM
B0506118.D	N019542-004B	SAMP	5	05/07/16 1:28 AM
B0506119.D	N019542-004B	SAMP	50	05/07/16 1:34 AM
B0506120.D	N019542-005B	SAMP	5	05/07/16 1:39 AM
B0506121.D	N019542-007B	SAMP	5	05/07/16 1:45 AM
B0506122.D	N019542-009B	SAMP	5	05/07/16 1:50 AM
B0506123.D	N019542-010B	SAMP	5	05/07/16 1:56 AM
B0506124.D	N019542-012B	SAMP	5	05/07/16 2:02 AM
B0506125.D	N019542-013B	SAMP	5	05/07/16 2:07 AM
B0506126.D	N019542-014B	SAMP	5	05/07/16 2:13 AM

INJECTION LOG: 160506B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0506127.D	N019542-015B	SAMP	5	05/07/16 2:18 AM
B0506128.D	CCV9	CCV	1	05/07/16 2:24 AM
B0506129.D	CCB9	CCB	1	05/07/16 2:29 AM
B0506130.D	N019542-016B	SAMP	5	05/07/16 2:35 AM
B0506131.D	N019542-019B	SAMP	5	05/07/16 2:40 AM
B0506132.D	N019542-020B	SAMP	5	05/07/16 2:46 AM
B0506133.D	N019542-013B	SAMP	25	05/07/16 2:52 AM
B0506134.D	N019542-014B	SAMP	25	05/07/16 2:57 AM
B0506135.D	N019542-015B	SAMP	100	05/07/16 3:03 AM
B0506136.D	N019542-016B	SAMP	50	05/07/16 3:08 AM
B0506138.D	CCV10	CCV	1	05/07/16 3:14 AM
B0506139.D	CCB10	CCB	1	05/07/16 3:19 AM
B0506140.D	LLCCV4	CCV2	1	05/07/16 3:25 AM
B0506141.D	ICSA5	ICSA	1	05/07/16 3:31 AM
B0506142.D	ICSAB5	ICSAB	1	05/07/16 3:36 AM

INJECTION LOG: 160509A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0509001.D	RINSE	RINSE	1	05/09/16 10:46 AM
A0509002.D	Cal Blank	IBLK	1	05/09/16 10:52 AM
A0509003.D	Std1-0.1/1 ppb	ICAL	1	05/09/16 10:57 AM
A0509004.D	Std2-0.5/5 ppb	ICAL	1	05/09/16 11:03 AM
A0509005.D	Std3-5/50 ppb	ICAL	1	05/09/16 11:08 AM
A0509006.D	Std4-10/100 ppb	ICAL	1	05/09/16 11:14 AM
A0509007.D	Std5-20/200 ppb	ICAL	1	05/09/16 11:19 AM
A0509008.D	Std6-40/400 ppb	ICAL	1	05/09/16 11:25 AM
A0509009.D	Std7-100/1000 ppb	ICAL	1	05/09/16 11:30 AM
A0509010.D	Std8-200/2000 ppb	ICAL	1	05/09/16 11:36 AM
A0509011.D	ICV	ICV	1	05/09/16 11:42 AM
A0509012.D	ICB	ICB	1	05/09/16 11:47 AM
A0509013.D	LLICV	CCV1	1	05/09/16 11:51 AM
A0509014.D	ICSA1	ICSA	1	05/09/16 11:58 AM
A0509015.D	ICSAB1	ICSAB	1	05/09/16 12:03 PM
A0509016.D	N019543-001B	SAMP	5	05/09/16 12:09 PM
A0509017.D	N019543-001B	SAMP	25	05/09/16 12:15 PM
A0509018.D	N019543-001B-PS	PS	5	05/09/16 12:20 PM
A0509019.D	N019543-001B-MS	MS	5	05/09/16 12:26 PM
A0509020.D	N019543-001B-MSD	MSD	5	05/09/16 12:31 PM
A0509021.D	N019543-011B	SAMP	5	05/09/16 12:37 PM
A0509022.D	N019543-011B-MS	MS	5	05/09/16 12:43 PM
A0509023.D	N019543-009B	SAMP	1	05/09/16 12:47 PM
A0509024.D	N019543-014B	SAMP	1	05/09/16 12:53 PM
A0509025.D	N019542-001B	SAMP	25	05/09/16 12:59 PM
A0509026.D	CCV1	CCV	1	05/09/16 1:04 PM
A0509027.D	CCB1	CCB	1	05/09/16 1:10 PM
A0509028.D	N019542-001B	SAMP	125	05/09/16 1:15 PM
A0509029.D	MB-57247	MBLK	1	05/09/16 1:21 PM
A0509030.D	LCS-57247	LCS	1	05/09/16 1:26 PM
A0509031.D	N019559-001B	SAMP	5	05/09/16 1:32 PM
A0509032.D	N019559-001B	SAMP	25	05/09/16 1:38 PM
A0509033.D	N019559-001B-PS	PS	5	05/09/16 1:43 PM
A0509034.D	N019559-001B-MS	MS	5	05/09/16 1:49 PM
A0509035.D	N019559-001B-MSD	MSD	5	05/09/16 1:54 PM
A0509036.D	N019559-002B	SAMP	1	05/09/16 2:00 PM
A0509037.D	N019559-003B	SAMP	1	05/09/16 2:05 PM
A0509038.D	CCV2	CCV	1	05/09/16 2:11 PM
A0509039.D	CCB2	CCB	1	05/09/16 2:17 PM
A0509040.D	N019559-004B	SAMP	1	05/09/16 2:22 PM
A0509041.D	N019559-005B	SAMP	1	05/09/16 2:28 PM
A0509042.D	N019559-006B	SAMP	1	05/09/16 2:33 PM

INJECTION LOG: 160509A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0509043.D	N019559-007B	SAMP	1	05/09/16 2:39 PM
A0509044.D	N019559-008B	SAMP	1	05/09/16 2:44 PM
A0509045.D	N019559-009B	SAMP	1	05/09/16 2:50 PM
A0509046.D	N019559-010B	SAMP	1	05/09/16 2:55 PM
A0509047.D	N019559-011B	SAMP	5	05/09/16 3:01 PM
A0509048.D	N019559-011B-MS	MS	5	05/09/16 3:06 PM
A0509049.D	N019559-012B	SAMP	1	05/09/16 3:12 PM
A0509050.D	CCV3	CCV	1	05/09/16 3:17 PM
A0509051.D	CCB3	CCB	1	05/09/16 3:23 PM
A0509052.D	N019559-013B	SAMP	1	05/09/16 3:28 PM
A0509053.D	N019559-014B	SAMP	1	05/09/16 3:34 PM
A0509054.D	N019570-001B	SAMP	5	05/09/16 3:40 PM
A0509055.D	N019570-002B	SAMP	5	05/09/16 3:45 PM
A0509056.D	N019570-003B	SAMP	5	05/09/16 3:51 PM
A0509057.D	N019570-004B	SAMP	5	05/09/16 3:56 PM
A0509058.D	N019570-005B	SAMP	5	05/09/16 4:02 PM
A0509059.D	N019570-005B	SAMP	25	05/09/16 4:07 PM
A0509060.D	N019570-002B	SAMP	5	05/09/16 4:13 PM
A0509061.D	N019534-004B	SAMP	1	05/09/16 4:23 PM
A0509062.D	CCV4	CCV	1	05/09/16 4:28 PM
A0509063.D	CCB4	CCB	1	05/09/16 4:34 PM
A0509064.D	LLCCV1	CCV2	1	05/09/16 4:40 PM
A0509065.D	ICSA2	ICSA	1	05/09/16 4:45 PM
A0509066.D	ICSAB2	ICSAB	1	05/09/16 4:51 PM
A0509067.D	N019534-004A	SAMP	1	05/09/16 4:56 PM
A0509068.D	N019534-006B	SAMP	1	05/09/16 5:02 PM
A0509069.D	N019534-006A	SAMP	1	05/09/16 5:07 PM
A0509070.D	N019534-008B	SAMP	1	05/09/16 5:13 PM
A0509071.D	N019534-008A	SAMP	1	05/09/16 5:18 PM
A0509072.D	N019535-007B	SAMP	1	05/09/16 5:24 PM
A0509073.D	N019535-007A	SAMP	1	05/09/16 5:30 PM
A0509074.D	N019527-002B	SAMP	1	05/09/16 5:35 PM
A0509075.D	N019527-002A	SAMP	1	05/09/16 5:41 PM
A0509076.D	N019527-004B	SAMP	1	05/09/16 5:47 PM
A0509077.D	CCV5	CCV	1	05/09/16 5:52 PM
A0509078.D	CCB5	CCB	1	05/09/16 5:58 PM
A0509079.D	N019527-004A	SAMP	1	05/09/16 6:03 PM
A0509080.D	N019527-005B	SAMP	1	05/09/16 6:09 PM
A0509081.D	N019527-005A	SAMP	1	05/09/16 6:14 PM
A0509082.D	N019527-006B	SAMP	1	05/09/16 6:20 PM
A0509083.D	N019527-006A	SAMP	1	05/09/16 6:25 PM
A0509084.D	N019527-007B	SAMP	1	05/09/16 6:31 PM

INJECTION LOG: 160509A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0509085.D	N019527-007A	SAMP	1	05/09/16 6:36 PM
A0509086.D	N019527-008B	SAMP	1	05/09/16 6:42 PM
A0509087.D	N019527-008A	SAMP	1	05/09/16 6:48 PM
A0509088.D	N019527-009B	SAMP	1	05/09/16 6:53 PM
A0509089.D	CCV6	CCV	1	05/09/16 6:59 PM
A0509090.D	CCB6	CCB	1	05/09/16 7:04 PM
A0509091.D	N019527-009A	SAMP	1	05/09/16 7:10 PM
A0509092.D	N019593-002B	SAMP	1	05/09/16 7:14 PM
A0509093.D	N019593-002A	SAMP	1	05/09/16 7:20 PM
A0509094.D	N019593-003B	SAMP	1	05/09/16 7:25 PM
A0509095.D	N019593-003A	SAMP	1	05/09/16 7:31 PM
A0509096.D	CCV7	CCV	1	05/09/16 7:37 PM
A0509097.D	CCB7	CCB	1	05/09/16 7:43 PM
A0509098.D	LLCCV2	CCV2	1	05/09/16 7:48 PM
A0509099.D	ICSA3	ICSA	1	05/09/16 7:54 PM
A0509100.D	ICSAB3	ICSAB	1	05/09/16 7:59 PM
A0509101.D	MB-57284	MBLK	1	05/09/16 8:10 PM
A0509102.D	LCS-57284	LCS	1	05/09/16 8:16 PM
A0509103.D	N019560-002B	SAMP	1	05/09/16 8:21 PM
A0509104.D	N019560-002B	SAMP	5	05/09/16 8:27 PM
A0509105.D	N019560-002B-PS	PS	1	05/09/16 8:32 PM
A0509106.D	N019560-002B-MS	MS	1	05/09/16 8:38 PM
A0509107.D	N019560-002B-MSD	MSD	1	05/09/16 8:44 PM
A0509108.D	N019560-003B	SAMP	1	05/09/16 8:49 PM
A0509109.D	N019560-004B	SAMP	1	05/09/16 8:55 PM
A0509110.D	N019560-005B	SAMP	1	05/09/16 9:00 PM
A0509111.D	CCV8	CCV	1	05/09/16 9:06 PM
A0509112.D	CCB8	CCB	1	05/09/16 9:11 PM
A0509113.D	N019560-006B	SAMP	1	05/09/16 9:17 PM
A0509114.D	N019560-007B	SAMP	1	05/09/16 9:22 PM
A0509115.D	N019560-008B	SAMP	1	05/09/16 9:28 PM
A0509116.D	N019560-009B	SAMP	1	05/09/16 9:33 PM
A0509117.D	N019560-010B	SAMP	1	05/09/16 9:39 PM
A0509118.D	N019560-011B	SAMP	1	05/09/16 9:45 PM
A0509119.D	N019560-012B	SAMP	1	05/09/16 9:50 PM
A0509120.D	N019560-012B-MS	MS	1	05/09/16 9:56 PM
A0509121.D	N019590-001B	SAMP	1	05/09/16 10:01 PM
A0509122.D	N019590-002B	SAMP	1	05/09/16 10:07 PM
A0509123.D	CCV9	CCV	1	05/09/16 10:12 PM
A0509124.D	CCB9	CCB	1	05/09/16 10:18 PM
A0509125.D	N019590-003B	SAMP	1	05/09/16 10:23 PM
A0509126.D	N019590-004B	SAMP	1	05/09/16 10:29 PM

INJECTION LOG: 160509A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0509127.D	N019590-005B	SAMP	1	05/09/16 10:34 PM
A0509128.D	N019590-007B	SAMP	1	05/09/16 10:40 PM
A0509129.D	MB-58304	MBLK	1	05/09/16 10:45 PM
A0509130.D	LCS-58304	LCS	1	05/09/16 10:51 PM
A0509131.D	N019591-001B	SAMP	1	05/09/16 10:57 PM
A0509132.D	N019591-001B	SAMP	5	05/09/16 11:02 PM
A0509133.D	N019591-001B-PS	PS	1	05/09/16 11:08 PM
A0509134.D	N019591-001B-MS	MS	1	05/09/16 11:13 PM
A0509135.D	CCV10	CCV	1	05/09/16 11:19 PM
A0509136.D	CCB10	CCB	1	05/09/16 11:24 PM
A0509137.D	LLCCV3	CCV2	1	05/09/16 11:30 PM
A0509138.D	ICSA4	ICSA	1	05/09/16 11:35 PM
A0509139.D	ICSAB4	ICSAB	1	05/09/16 11:41 PM
A0509140.D	N019591-001B-MSD	MSD	1	05/09/16 11:46 PM
A0509141.D	N019591-002B	SAMP	1	05/09/16 11:52 PM
A0509142.D	N019591-003B	SAMP	1	05/09/16 11:57 PM
A0509143.D	N019591-004B	SAMP	1	05/10/16 12:03 AM
A0509144.D	N019591-005B	SAMP	1	05/10/16 12:08 AM
A0509145.D	N019591-006B	SAMP	1	05/10/16 12:14 AM
A0509146.D	N019591-007B	SAMP	1	05/10/16 12:19 AM
A0509147.D	N019591-009B	SAMP	1	05/10/16 12:25 AM
A0509148.D	N019591-010B	SAMP	1	05/10/16 12:30 AM
A0509149.D	N019591-011B	SAMP	1	05/10/16 12:36 AM
A0509150.D	CCV11	CCV	1	05/10/16 12:41 AM
A0509151.D	CCB11	CCB	1	05/10/16 12:47 AM
A0509152.D	N019591-012B	SAMP	1	05/10/16 12:52 AM
A0509153.D	N019591-012B-MS	MS	1	05/10/16 12:58 AM
A0509154.D	N019591-013B	SAMP	1	05/10/16 1:03 AM
A0509155.D	N019591-014B	SAMP	1	05/10/16 1:09 AM
A0509156.D	N019591-015B	SAMP	1	05/10/16 1:14 AM
A0509157.D	N019592-001B	SAMP	1	05/10/16 1:20 AM
A0509158.D	N019592-005B	SAMP	1	05/10/16 1:26 AM
A0509159.D	N019592-006B	SAMP	1	05/10/16 1:31 AM
A0509160.D	N019592-007B	SAMP	1	05/10/16 1:37 AM
A0509161.D	N019592-008B	SAMP	1	05/10/16 1:42 AM
A0509162.D	CCV12	CCV	1	05/10/16 1:48 AM
A0509163.D	CCB12	CCB	1	05/10/16 1:53 AM
A0509164.D	LLCCV4	CCV2	1	05/10/16 1:59 AM
A0509165.D	ICSA5	ICSA	1	05/10/16 2:04 AM
A0509166.D	ICSAB5	ICSAB	1	05/10/16 2:10 AM

INJECTION LOG: 160510A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0510001.D	RINSE	RINSE	1	05/10/16 10:22 AM
A0510002.D	Cal Blank	IBLK	1	05/10/16 10:28 AM
A0510003.D	Std1-0.1/1 ppb	ICAL	1	05/10/16 10:33 AM
A0510004.D	Std2-0.5/5 ppb	ICAL	1	05/10/16 10:39 AM
A0510005.D	Std3-5/50 ppb	ICAL	1	05/10/16 10:45 AM
A0510006.D	Std4-10/100 ppb	ICAL	1	05/10/16 10:50 AM
A0510007.D	Std5-20/200 ppb	ICAL	1	05/10/16 10:56 AM
A0510008.D	Std6-40/400 ppb	ICAL	1	05/10/16 11:01 AM
A0510009.D	Std7-100/1000 ppb	ICAL	1	05/10/16 11:07 AM
A0510010.D	Std8-200/2000 ppb	ICAL	1	05/10/16 11:12 AM
A0510011.D	ICV	ICV	1	05/10/16 11:16 AM
A0510012.D	ICB	ICB	1	05/10/16 11:21 AM
A0510013.D	LLICV	CCV1	1	05/10/16 11:27 AM
A0510014.D	ICSA1	ICSA	1	05/10/16 11:36 AM
A0510015.D	ICSAB1	ICSAB	1	05/10/16 11:42 AM
A0510016.D	N019559-008B	SAMP	1	05/10/16 11:47 AM
A0510017.D	N019560-002B	SAMP	1	05/10/16 11:53 AM
A0510018.D	N019560-002B	SAMP	5	05/10/16 11:58 AM
A0510019.D	N019560-002B	SAMP	25	05/10/16 12:04 PM
A0510020.D	N019560-002B-PS	PS	5	05/10/16 12:09 PM
A0510021.D	N019560-002B-MS	MS	5	05/10/16 12:15 PM
A0510022.D	N019560-002B-MSD	MSD	5	05/10/16 12:20 PM
A0510023.D	N019560-004B	SAMP	5	05/10/16 12:26 PM
A0510024.D	N019560-005B	SAMP	1	05/10/16 12:31 PM
A0510025.D	N019560-006B	SAMP	10	05/10/16 12:37 PM
A0510026.D	CCV1	CCV	1	05/10/16 12:43 PM
A0510027.D	CCB1	CCB	1	05/10/16 12:49 PM
A0510028.D	N019560-007B	SAMP	25	05/10/16 12:54 PM
A0510029.D	N019560-008B	SAMP	5	05/10/16 1:00 PM
A0510030.D	N019560-009B	SAMP	5	05/10/16 1:05 PM
A0510031.D	N019560-010B	SAMP	5	05/10/16 1:11 PM
A0510032.D	N019560-012B	SAMP	5	05/10/16 1:16 PM
A0510033.D	N019560-012B-MS	MS	5	05/10/16 1:22 PM
A0510034.D	N019560-012B	SAMP	10	05/10/16 1:27 PM
A0510035.D	N019560-012B-MS	MS	10	05/10/16 1:33 PM
A0510036.D	N019590-001B	SAMP	5	05/10/16 1:38 PM
A0510037.D	N019590-002B	SAMP	5	05/10/16 1:44 PM
A0510038.D	CCV2	CCV	1	05/10/16 1:50 PM
A0510039.D	CCB2	CCB	1	05/10/16 1:55 PM
A0510040.D	N019590-003B	SAMP	5	05/10/16 2:01 PM
A0510041.D	N019590-005B	SAMP	25	05/10/16 2:06 PM
A0510042.D	N019590-007B	SAMP	5	05/10/16 2:12 PM

INJECTION LOG: 160510A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0510043.D	N019590-007B	SAMP	10	05/10/16 2:17 PM
A0510044.D	N019591-005B	SAMP	10	05/10/16 2:23 PM
A0510045.D	N019591-011B	SAMP	5	05/10/16 2:28 PM
A0510046.D	N019591-013B	SAMP	5	05/10/16 2:34 PM
A0510047.D	N019560-012B	SAMP	25	05/10/16 2:41 PM
A0510048.D	N019560-012B-MS	MS	25	05/10/16 2:46 PM
A0510049.D	MB-58305	MBLK	1	05/10/16 2:57 PM
A0510050.D	CCV3	CCV	1	05/10/16 3:03 PM
A0510051.D	CCB3	CCB	1	05/10/16 3:08 PM
A0510052.D	LCS-58305	LCS	1	05/10/16 3:14 PM
A0510053.D	N019606-001B	SAMP	1	05/10/16 3:19 PM
A0510054.D	N019606-002B	SAMP	1	05/10/16 3:25 PM
A0510055.D	N019606-003B	SAMP	1	05/10/16 3:31 PM
A0510056.D	N019606-004B	SAMP	1	05/10/16 3:36 PM
A0510057.D	N019606-005B	SAMP	1	05/10/16 3:42 PM
A0510058.D	N019606-006B	SAMP	1	05/10/16 3:47 PM
A0510059.D	N019606-007B	SAMP	1	05/10/16 3:53 PM
A0510060.D	N019606-008B	SAMP	1	05/10/16 3:58 PM
A0510061.D	N019606-009B	SAMP	1	05/10/16 4:04 PM
A0510062.D	CCV4	CCV	1	05/10/16 4:10 PM
A0510063.D	CCB4	CCB	1	05/10/16 4:15 PM
A0510064.D	LLCCV1	CCV2	1	05/10/16 4:21 PM
A0510065.D	ICSA2	ICSA	1	05/10/16 4:26 PM
A0510066.D	ICSAB2	ICSAB	1	05/10/16 4:32 PM
A0510067.D	N019606-010B	SAMP	1	05/10/16 4:37 PM
A0510068.D	N019606-011B	SAMP	1	05/10/16 4:43 PM
A0510069.D	N019606-012B	SAMP	1	05/10/16 4:48 PM
A0510070.D	N019606-013B	SAMP	1	05/10/16 4:54 PM
A0510071.D	N019606-014B	SAMP	1	05/10/16 4:59 PM
A0510072.D	N019612-001B	SAMP	1	05/10/16 5:05 PM
A0510073.D	N019612-002B	SAMP	1	05/10/16 5:11 PM
A0510074.D	N019612-003B	SAMP	1	05/10/16 5:18 PM
A0510075.D	N019606-001B	SAMP	5	05/10/16 5:23 PM
A0510076.D	N019606-001B	SAMP	25	05/10/16 5:29 PM
A0510077.D	CCV5	CCV	1	05/10/16 5:34 PM
A0510078.D	CCB5	CCB	1	05/10/16 5:40 PM
A0510079.D	N019606-001B-PS	PS	1	05/10/16 5:46 PM
A0510080.D	N019606-001B-PS	PS	5	05/10/16 5:51 PM
A0510081.D	N019606-001B-MS	MS	1	05/10/16 5:57 PM
A0510082.D	N019606-001B-MS	MS	5	05/10/16 6:02 PM
A0510083.D	N019606-001B-MSD	MSD	1	05/10/16 6:08 PM
A0510084.D	N019606-001B-MSD	MSD	5	05/10/16 6:13 PM

INJECTION LOG: 160510A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0510085.D	N019606-011B	SAMP	5	05/10/16 6:20 PM
A0510086.D	N019606-011B	SAMP	25	05/10/16 6:25 PM
A0510087.D	N019606-011B-MS	MS	1	05/10/16 6:31 PM
A0510088.D	N019606-011B-MS	MS	5	05/10/16 6:36 PM
A0510089.D	CCV6	CCV	1	05/10/16 6:42 PM
A0510090.D	CCB6	CCB	1	05/10/16 6:48 PM
A0510091.D	N019606-011B-MS	MS	25	05/10/16 6:53 PM
A0510092.D	N019606-005B	SAMP	5	05/10/16 6:59 PM
A0510093.D	N019606-006B	SAMP	5	05/10/16 7:04 PM
A0510094.D	N019606-007B	SAMP	5	05/10/16 7:10 PM
A0510095.D	N019606-008B	SAMP	5	05/10/16 7:15 PM
A0510096.D	N019606-009B	SAMP	5	05/10/16 7:21 PM
A0510097.D	N019606-010B	SAMP	5	05/10/16 7:27 PM
A0510098.D	N019606-010B	SAMP	25	05/10/16 7:32 PM
A0510099.D	N019606-012B	SAMP	5	05/10/16 7:38 PM
A0510100.D	N019606-012B	SAMP	25	05/10/16 7:43 PM
A0510101.D	CCV7	CCV	1	05/10/16 7:49 PM
A0510102.D	CCB7	CCB	1	05/10/16 7:55 PM
A0510103.D	N019606-013B	SAMP	5	05/10/16 8:00 PM
A0510104.D	N019606-014B	SAMP	5	05/10/16 8:06 PM
A0510105.D	MB-58375	MBLK	1	05/10/16 8:11 PM
A0510106.D	LCS-58375	LCS	1	05/10/16 8:17 PM
A0510107.D	N019699-001B	SAMP	1	05/10/16 8:23 PM
A0510108.D	N019699-001B	SAMP	5	05/10/16 8:28 PM
A0510109.D	N019699-001B-PS	PS	1	05/10/16 8:34 PM
A0510110.D	N019699-001B-MS	MS	1	05/10/16 8:39 PM
A0510111.D	N019699-001B-MSD	MSD	1	05/10/16 8:45 PM
A0510112.D	CCV8	CCV	1	05/10/16 8:51 PM
A0510113.D	CCB8	CCB	1	05/10/16 8:56 PM
A0510114.D	LLCCV2	CCV2	1	05/10/16 9:02 PM
A0510115.D	ICSA3	ICSA	1	05/10/16 9:07 PM
A0510116.D	ICSAB3	ICSAB	1	05/10/16 9:13 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2016 7:36:35 A**
Prep End Date: **5/2/2016 12:00:00 P**
Initials/ Date: 5/16/2016

Prep Batch **57247** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.6**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-57247	Aqueous		25	☐	0	0	25	1.000		
MB-57247	Aqueous		25	☐	0	0	25	1.000		
N019559-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2016 7:36:35 A**
Prep End Date: **5/2/2016 12:00:00 P**

Initials/ Date: 5/16/2016

Prep Batch **57247** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.6**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019559-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-011B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N019570-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019570-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019570-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019570-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019570-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 6 May 2016 11:30:34 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	97896.80	0.00	
24 Mg	410996.00	0.00	
25 Mg	54634.70	0.00	
26 Mg	63401.00	0.00	
59 Co	544933.00	0.00	
115 In	1027630.00	0.00	
206 Pb	262167.00	0.00	
207 Pb	229430.00	0.00	
208 Pb	559039.00	0.00	

RSD (%)

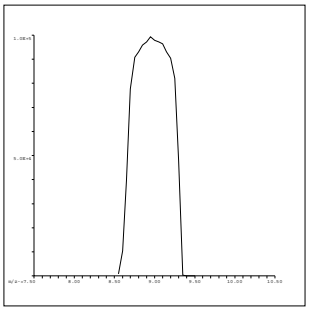
Element	Actual	Required	Flag
9 Be	0.68	5.00	
24 Mg	0.39	5.00	
25 Mg	0.46	5.00	
26 Mg	0.92	5.00	
59 Co	0.91	5.00	
115 In	0.67	5.00	
206 Pb	0.92	5.00	
207 Pb	1.10	5.00	
208 Pb	1.52	5.00	

Ion Ratio

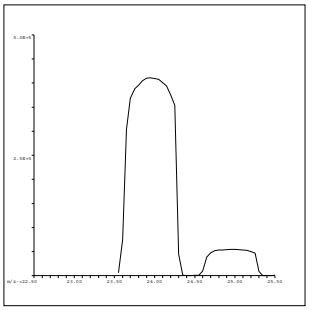
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

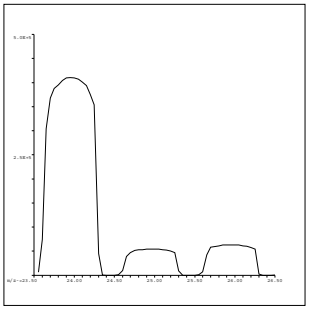
Element	Actual	Required	Flag



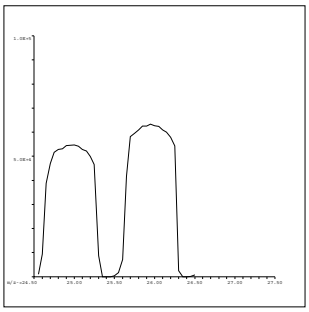
9 Be
Mass Calib.
   Actual: 9.00
   Required: 8.90-9.10
   Flag:
Peak Width
   Actual: 0.70
   Required: 0.75
   Flag:



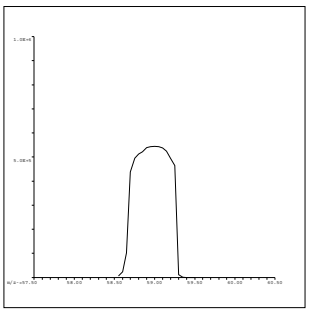
24 Mg
Mass Calib.
   Actual: 23.95
   Required: 23.90-24.10
   Flag:
Peak Width
   Actual: 0.70
   Required: 0.75
   Flag:



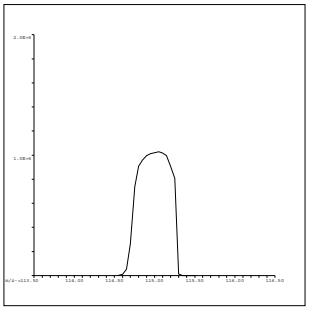
25 Mg
Mass Calib.
   Actual: 24.95
   Required: 24.90-25.10
   Flag:
Peak Width
   Actual: 0.70
   Required: 0.75
   Flag:



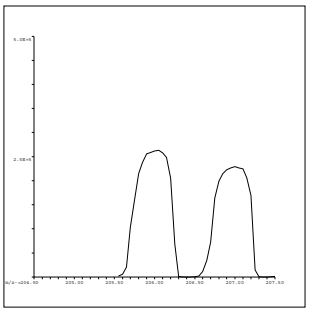
26 Mg
Mass Calib.
   Actual: 25.95
   Required: 25.90-26.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



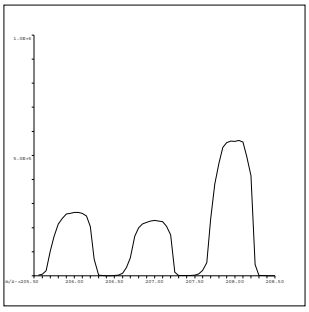
59 Co
Mass Calib.
   Actual: 59.00
   Required: 58.90-59.10
   Flag:
Peak Width
   Actual: 0.60
   Required: 0.75
   Flag:



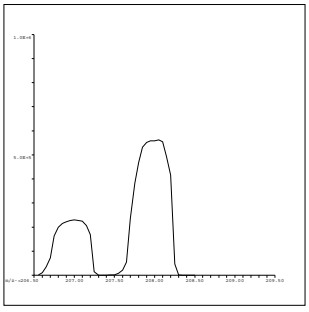
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 9 May 2016 10:08:49 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	162431.00	0.00	
24 Mg	624680.00	0.00	
25 Mg	82736.40	0.00	
26 Mg	95432.10	0.00	
59 Co	633066.00	0.00	
115 In	981811.00	0.00	
206 Pb	252653.00	0.00	
207 Pb	220362.00	0.00	
208 Pb	541496.00	0.00	

RSD (%)

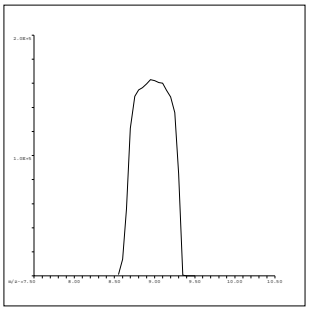
Element	Actual	Required	Flag
9 Be	0.98	5.00	
24 Mg	0.56	5.00	
25 Mg	1.05	5.00	
26 Mg	0.92	5.00	
59 Co	0.59	5.00	
115 In	1.11	5.00	
206 Pb	1.25	5.00	
207 Pb	1.07	5.00	
208 Pb	1.46	5.00	

Ion Ratio

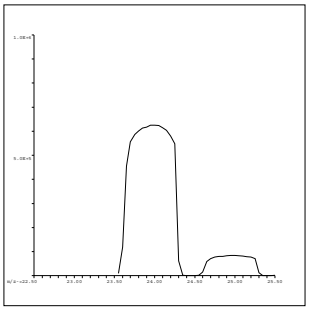
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

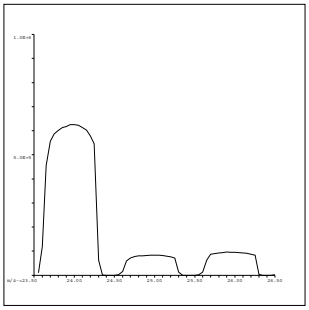
Element	Actual	Required	Flag



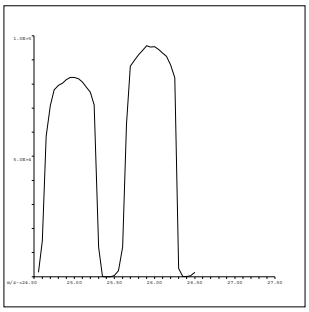
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



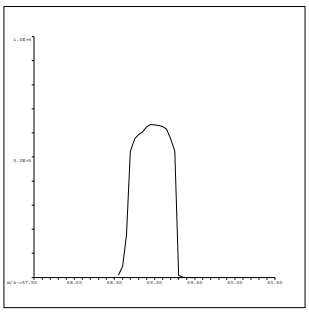
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



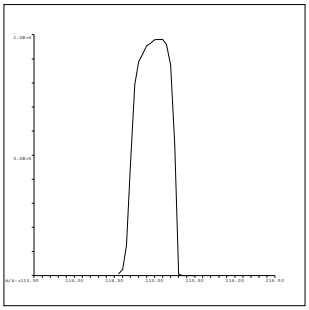
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



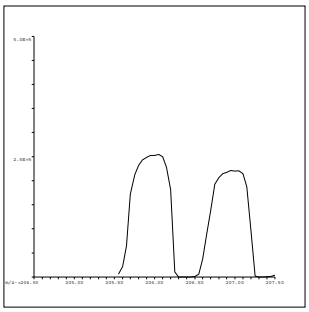
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



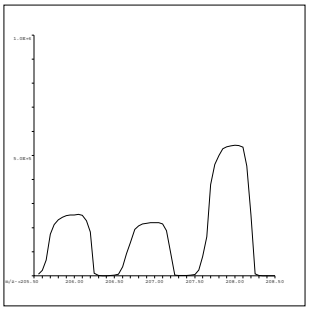
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



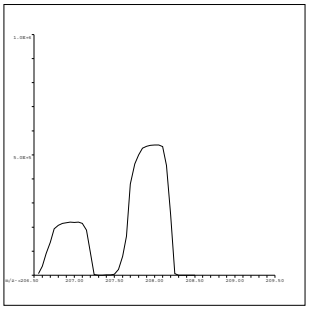
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

C:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 10 May 2016 09:54:01 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	102624.00	0.00	
24	Mg	555040.00	0.00	
25	Mg	72741.10	0.00	
26	Mg	84940.10	0.00	
59	Co	635241.00	0.00	
115	In	1318530.00	0.00	
206	Pb	332757.00	0.00	
207	Pb	288378.00	0.00	
208	Pb	713088.00	0.00	

RSD (%)

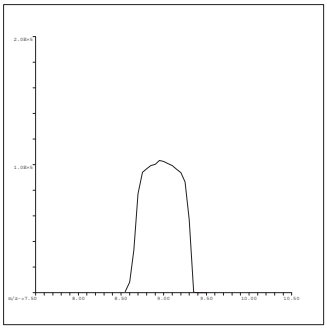
Element		Actual	Required	Flag
9	Be	1.24	5.00	
24	Mg	0.32	5.00	
25	Mg	1.96	5.00	
26	Mg	0.62	5.00	
59	Co	0.25	5.00	
115	In	0.46	5.00	
206	Pb	0.42	5.00	
207	Pb	0.46	5.00	
208	Pb	0.48	5.00	

Ion Ratio

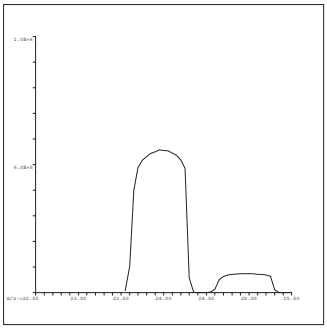
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

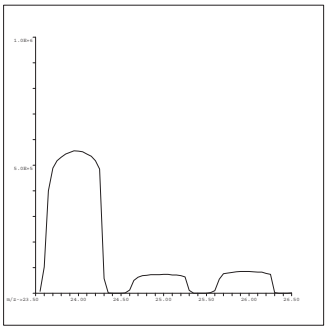
Element	Actual	Required	Flag



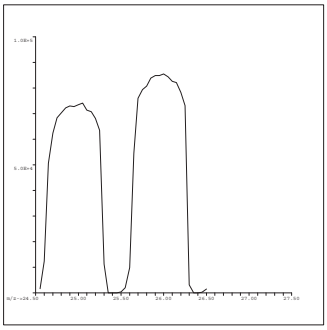
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



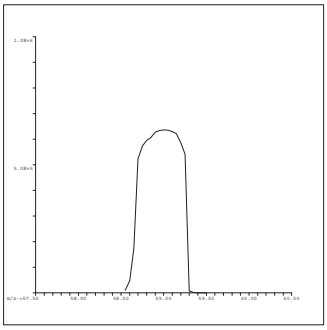
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



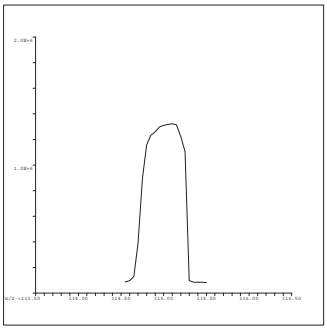
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



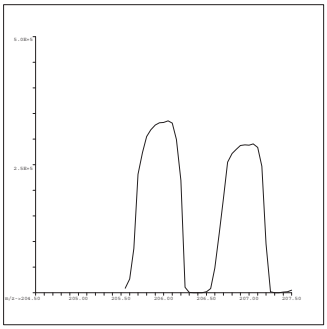
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



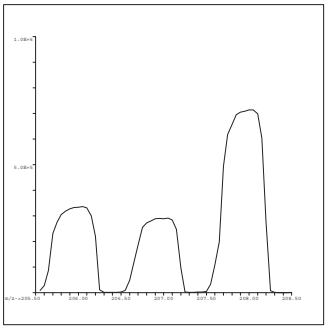
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



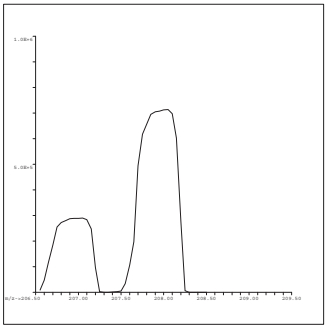
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160506B

Instrument ID: ICPMS-02

Analyte	Data File	B0506002.D	B0506003.D	B0506004.D	B0506005.D	B0506006.D	B0506007.D	B0506008.D	B0506009.D	B0506010.D	
	Acq. Date-Time	05/06/2016 02:35 PM	05/06/2016 02:41 PM	05/06/2016 02:46 PM	05/06/2016 02:52 PM	05/06/2016 02:57 PM	05/06/2016 03:03 PM	05/06/2016 03:08 PM	05/06/2016 03:14 PM	05/06/2016 03:20 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	102015.2		99889.1	100314.5	100163.3	98624.6	97724.5	96887.2	98165.7	
55 Mn [2]	CPS	146.8		2233.2	20940.2	40214.7	79132.8	156038.7	380924.7	757058.3	0.9999
52 Cr [2]	CPS	1030		4366.2	37010.6	71765.8	143218.5	282311.9	689771.9	1339202.8	0.9998
72 Ge (ISTD) [1]	CPS	83590.6		81428.3	81667.3	80680.3	80259.3	78771	77512	77150	
78 Se [1]	CPS	0		154.5	1560.1	3026	5973.6	11855.9	28836.4	57491.4	1.0000
72 Ge (ISTD) [2]	CPS	73685.3	73232.3	72774.8	73630.9	73139.7	71831.1	72235.7	70581.6	69571.8	
75 As [2]	CPS	23.6	110.7	456.9	4586.9	8911	17756.4	35170.7	86207.4	170737.7	1.0000
103 Rh (ISTD) [2]	CPS	1998384.1		1967134.5	1990899.9	1978656	1984402.9	1964279.3	1928566.8	1908944.3	
95 Mo [2]	CPS	110		2389.2	24029.8	47683.9	96161.7	190888.1	469795.1	936680.5	1.0000
159 Tb (ISTD) [3]	CPS	6513486.4		6529261.2	6559075.6	6593971.2	6599719.6	6620453.6	6514374.1	6590771.8	
137 Ba [3]	CPS	193.7		6100.6	59742.1	114583.6	228814.7	454909.9	1112644.7	2188411.5	0.9999

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 160509A

Instrument ID: ICPMS-02

Analyte	Data File	A0509002.D	A0509004.D	A0509005.D	A0509006.D	A0509007.D	A0509008.D	A0509009.D	A0509010.D	
	Acq. Date-Time	05/09/2016 10:52 AM	05/09/2016 11:03 AM	05/09/2016 11:08 AM	05/09/2016 11:14 AM	05/09/2016 11:19 AM	05/09/2016 11:25 AM	05/09/2016 11:30 AM	05/09/2016 11:36 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	71195.3	73030.7	70640.1	69537.6	69613.3	68611.4	67588.3	66699	
78 Se [1]	CPS	3.3	144.5	1417.9	2627	5444.5	10638.3	26132.9	51747.8	1.0000
159 Tb (ISTD) [3]	CPS	5923501.6	5864665.7	5794946.4	5787181.9	5775005.8	5727820.3	5740790.6	5712823.8	
137 Ba [3]	CPS	0.7	5177.1	47477.7	93813.1	182940.7	363628.3	909620.8	1784078.8	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 160510A

Instrument ID: ICPMS-02

Analyte	Data File	A0510002.D	A0510004.D	A0510005.D	A0510006.D	A0510007.D	A0510008.D	A0510009.D	A0510010.D	
	Acq. Date-Time	05/10/2016 10:28 AM	05/10/2016 10:39 AM	05/10/2016 10:45 AM	05/10/2016 10:50 AM	05/10/2016 10:56 AM	05/10/2016 11:01 AM	05/10/2016 11:07 AM	05/10/2016 11:12 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	64095.1	64201.2	63793	62364.1	61838.8	63586.5	60987	62645.7	
78 Se [1]	CPS	4.4	127.8	1259	2559.2	5073.2	10461.6	26072.9	50758	0.9997

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ICV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.387	0.10	10.00	0	104	90	110				
Manganese	103.807	0.50	100.0	0	104	90	110				
Molybdenum	10.812	0.50	10.00	0	108	90	110				
Selenium	10.510	0.50	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.085	0.10	0.1000	0	85.5	80	120				
Manganese	0.599	0.50	0.5000	0	120	80	120				
Molybdenum	0.560	0.50	0.5000	0	112	80	120				
Selenium	0.452	0.50	0.5000	0	90.5	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.912	0.10	20.00	0	99.6	90	110				
Manganese	20.412	0.50	20.00	0	102	90	110				
Molybdenum	19.871	0.50	20.00	0	99.4	90	110				
Selenium	19.808	0.50	20.00	0	99.0	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.109	0.10	0.1000	0	109	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **108313**
Client ID: **ZZZZZZ** Batch ID: **R108313** TestNo: **EPA 6020** Analysis Date: **5/6/2016** SeqNo: **2318182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.579	0.50	0.5000	0	116	70	130				
Molybdenum	0.526	0.50	0.5000	0	105	70	130				
Selenium	0.580	0.50	0.5000	0	116	70	130				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **108313**
Client ID: **CCV** Batch ID: **R108313** TestNo: **EPA 6020** Analysis Date: **5/6/2016** SeqNo: **2318195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.016	0.10	20.00	0	100	90	110				
Manganese	20.549	0.50	20.00	0	103	90	110				
Molybdenum	20.082	0.50	20.00	0	100	90	110				
Selenium	19.312	0.50	20.00	0	96.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **108313**
Client ID: **CCV** Batch ID: **R108313** TestNo: **EPA 6020** Analysis Date: **5/6/2016** SeqNo: **2318207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.204	0.10	20.00	0	101	90	110				
Manganese	20.073	0.50	20.00	0	100	90	110				
Molybdenum	19.921	0.50	20.00	0	99.6	90	110				
Selenium	20.440	0.50	20.00	0	102	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **108313**
Client ID: **CCV** Batch ID: **R108313** TestNo: **EPA 6020** Analysis Date: **5/6/2016** SeqNo: **2318219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.772	0.10	20.00	0	98.9	90	110				
Manganese	20.851	0.50	20.00	0	104	90	110				
Molybdenum	20.081	0.50	20.00	0	100	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.313	0.50	20.00	0	102	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.097	0.10	0.1000	0	96.7	70	130				
Manganese	0.608	0.50	0.5000	0	122	70	130				
Molybdenum	0.537	0.50	0.5000	0	107	70	130				
Selenium	0.550	0.50	0.5000	0	110	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.628	0.10	20.00	0	98.1	90	110				
Manganese	20.573	0.50	20.00	0	103	90	110				
Molybdenum	19.887	0.50	20.00	0	99.4	90	110				
Selenium	19.749	0.50	20.00	0	98.7	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.661	0.10	20.00	0	98.3	90	110				
Manganese	20.446	0.50	20.00	0	102	90	110				
Molybdenum	20.135	0.50	20.00	0	101	90	110				
Selenium	19.570	0.50	20.00	0	97.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.991	0.10	20.00	0	100	90	110				
Manganese	20.521	0.50	20.00	0	103	90	110				
Molybdenum	20.200	0.50	20.00	0	101	90	110				
Selenium	20.606	0.50	20.00	0	103	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.10	0.1000	0	110	70	130				
Manganese	0.594	0.50	0.5000	0	119	70	130				
Molybdenum	0.521	0.50	0.5000	0	104	70	130				
Selenium	0.543	0.50	0.5000	0	109	70	130				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.775	0.10	20.00	0	98.9	90	110				
Manganese	20.256	0.50	20.00	0	101	90	110				
Molybdenum	19.973	0.50	20.00	0	99.9	90	110				
Selenium	19.763	0.50	20.00	0	98.8	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.460	0.10	20.00	0	97.3	90	110				
Manganese	20.434	0.50	20.00	0	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.995	0.50	20.00	0	100	90	110				
Selenium	20.209	0.50	20.00	0	101	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCV**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.620	0.10	20.00	0	98.1	90	110				
Manganese	20.371	0.50	20.00	0	102	90	110				
Molybdenum	19.671	0.50	20.00	0	98.4	90	110				
Selenium	20.495	0.50	20.00	0	102	90	110				

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.092	0.10	0.1000	0	92.2	70	130				
Manganese	0.599	0.50	0.5000	0	120	70	130				
Molybdenum	0.514	0.50	0.5000	0	103	70	130				
Selenium	0.546	0.50	0.5000	0	109	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ICV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	104.904	1.0	100.0	0	105	90	110				
Selenium	10.499	0.50	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.182	1.0	1.000	0	118	80	120				
Selenium	0.584	0.50	0.5000	0	117	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	21.020	1.0	20.00	0	105	90	110				
Selenium	19.717	0.50	20.00	0	98.6	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	20.604	1.0	20.00	0	103	90	110				
Selenium	20.139	0.50	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	20.867	1.0	20.00	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.002	0.50	20.00	0	100	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	21.433	1.0	20.00	0	107	90	110				
Selenium	19.409	0.50	20.00	0	97.0	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.195	1.0	1.000	0	119	70	130				
Selenium	0.479	0.50	0.5000	0	95.7	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	21.872	1.0	20.00	0	109	90	110				
Selenium	18.957	0.50	20.00	0	94.8	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCV**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	21.777	1.0	20.00	0	109	90	110				
Selenium	19.614	0.50	20.00	0	98.1	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCV7	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	CCV	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	21.766	1.0	20.00	0	109	90	110				
Selenium	19.141	0.50	20.00	0	95.7	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321170

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.179	1.0	1.000	0	118	70	130				
Selenium	0.474	0.50	0.5000	0	94.9	70	130				

Sample ID	CCV8	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	CCV	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	22.108	1.0	20.00	0	111	90	110				S
Selenium	19.274	0.50	20.00	0	96.4	90	110				

Sample ID	CCV9	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	CCV	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	22.418	1.0	20.00	0	112	90	110				S
Selenium	20.259	0.50	20.00	0	101	90	110				

Sample ID	CCV10	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	CCV	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321207

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	22.328	1.0	20.00	0	112	90	110				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Ba on CCV8 to CCV12 is biased high, however, samples N019559 were not affected. Samples were closed by CCV7/CCB7/LLCCV2/ICSA3/ICSAB3.

5/17/2016

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCV10	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	CCV	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321207

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.357	0.50	20.00	0	102	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321209

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.243	1.0	1.000	0	124	70	130				
Selenium	0.507	0.50	0.5000	0	101	70	130				

Sample ID	CCV11	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	CCV	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/10/2016	SeqNo:	2321222

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	22.653	1.0	20.00	0	113	90	110				S
Selenium	20.951	0.50	20.00	0	105	90	110				

Sample ID	CCV12	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	CCV	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/10/2016	SeqNo:	2321234

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	22.700	1.0	20.00	0	114	90	110				S
Selenium	19.770	0.50	20.00	0	98.9	90	110				

Sample ID	LLCCV4	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/10/2016	SeqNo:	2321236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.226	1.0	1.000	0	123	70	130				
Molybdenum	0.559	0.50	0.5000	0	112	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**LLCCV4**	SampType:	**CCV2**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108342**
Client ID:	**ZZZZZZ**	Batch ID:	**R108342**	TestNo:	**EPA 6020**			Analysis Date:	**5/10/2016**	SeqNo:	**2321236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.495	0.50	0.5000	0	99.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.129	0.50	10.00	0	91.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.410	0.50	0.5000	0	82.0	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.842	0.50	20.00	0	99.2	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.003	0.50	20.00	0	100	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.605	0.50	20.00	0	98.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.965	0.50	20.00	0	94.8	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.454	0.50	0.5000	0	90.9	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.709	1.0	10.00	0	107	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.045	1.0	1.000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.279	1.0	20.00	0	106	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.108	1.0	1.000	0	111	70	130				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.672	1.0	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.527	1.0	20.00	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.055	1.0	20.00	0	105	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.168	1.0	1.000	0	117	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.164	1.0	20.00	0	106	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.841	1.0	20.00	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.891	1.0	20.00	0	104	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.104	1.0	1.000	0	110	70	130				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.867	1.0	20.00	0	104	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.198	1.0	20.00	0	106	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCV**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.888	1.0	20.00	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.129	1.0	1.000	0	113	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ICB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.200	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.106	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.074	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.141	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.061	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.070	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.091	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.067	0.50									
Selenium	ND	0.50									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **CCB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.076	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ICB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	0.039	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Samples N019559 were closed by CCV7/CCB7/LLCCV2/ICSA3/ICSAB3.

5/17/2016

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/9/2016**	SeqNo: **2321208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB11**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2321223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB12**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **CCB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2321235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.035	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.094	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.036	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.023	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.099	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **CCB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.022	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ICSA**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.067	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ICSAB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.986	0.10	20.00	0	105	80	120				
Manganese	16.820	0.50	20.00	0	84.1	80	120				
Molybdenum	23.232	0.50	20.00	0	116	80	120				
Selenium	19.945	0.50	20.00	0	99.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ICSA**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108313**
Client ID: **ICSAB**	Batch ID: **R108313**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.952	0.10	20.00	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108313
Client ID:	ICSAB	Batch ID:	R108313	TestNo:	EPA 6020			Analysis Date:	5/6/2016	SeqNo:	2318184

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.913	0.50	20.00	0	84.6	80	120				
Molybdenum	23.299	0.50	20.00	0	116	80	120				
Selenium	19.781	0.50	20.00	0	98.9	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108313
Client ID:	ICSA	Batch ID:	R108313	TestNo:	EPA 6020			Analysis Date:	5/6/2016	SeqNo:	2318222

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.042	0.50									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108313
Client ID:	ICSAB	Batch ID:	R108313	TestNo:	EPA 6020			Analysis Date:	5/6/2016	SeqNo:	2318223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.640	0.10	20.00	0	103	80	120				
Manganese	16.758	0.50	20.00	0	83.8	80	120				
Molybdenum	23.102	0.50	20.00	0	116	80	120				
Selenium	19.699	0.50	20.00	0	98.5	80	120				

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108313
Client ID:	ICSA	Batch ID:	R108313	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318261

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108313
Client ID:	ICSA	Batch ID:	R108313	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318261

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108313
Client ID:	ICSAB	Batch ID:	R108313	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.769	0.10	20.00	0	104	80	120				
Manganese	17.239	0.50	20.00	0	86.2	80	120				
Molybdenum	22.903	0.50	20.00	0	115	80	120				
Selenium	20.058	0.50	20.00	0	100	80	120				

Sample ID	ICSA5	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108313
Client ID:	ICSA	Batch ID:	R108313	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318297

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB5	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108313
Client ID:	ICSAB	Batch ID:	R108313	TestNo:	EPA 6020			Analysis Date:	5/7/2016	SeqNo:	2318298

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.845	0.10	20.00	0	104	80	120				
Manganese	17.901	0.50	20.00	0	89.5	80	120				
Molybdenum	23.092	0.50	20.00	0	115	80	120				
Selenium	20.148	0.50	20.00	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSA	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321086

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSAB	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321087

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	17.278	1.0	20.00	0	86.4	80	120				
Selenium	18.534	0.50	20.00	0	92.7	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSA	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321137

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSAB	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321138

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	17.785	1.0	20.00	0	88.9	80	120				
Selenium	19.184	0.50	20.00	0	95.9	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSA	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321171

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSA	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321171

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSAB	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321172

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	18.820	1.0	20.00	0	94.1	80	120				
Selenium	19.157	0.50	20.00	0	95.8	80	120				

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSA	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321210

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSAB	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/9/2016	SeqNo:	2321211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	21.438	1.0	20.00	0	107	80	120				
Selenium	20.312	0.50	20.00	0	102	80	120				

Sample ID	ICSA5	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ICSA	Batch ID:	R108342	TestNo:	EPA 6020			Analysis Date:	5/10/2016	SeqNo:	2321237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DQ	Surrogate Diluted Out		Calculations are based on raw values		

Samples N019559 were closed by CCV7/CCB7/LLCCV2/ICSA3/ICSAB3.

5/17/2016

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB5**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108342**
Client ID: **ICSAB**	Batch ID: **R108342**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2321238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	17.426	1.0	20.00	0	87.1	80	120				
Selenium	19.546	0.50	20.00	0	97.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSA**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSAB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.687	0.50	20.00	0	98.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSA**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSAB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.727	0.50	20.00	0	93.6	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.179	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.813	1.0	20.00	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.144	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.920	1.0	20.00	0	105	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.210	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/6/2016**	SeqNo: **2318089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.837	1.0	20.00	0	104	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.177	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.918	1.0	20.00	0	105	80	120				

Sample ID **ICSA5**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSA**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.198	1.0									

Sample ID **ICSAB5**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108312**
Client ID: **ICSAB**	Batch ID: **R108312**	TestNo: **EPA 6020**		Analysis Date: **5/7/2016**	SeqNo: **2318164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.458	1.0	20.00	0	107	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	6513486.4	6513486.4	100	PASS	70-130	102015.2	102015.2	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	6571900.5	6513486.4	100.9	PASS	70-130	100153.4	102015.2	98.17	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	6529261.2	6513486.4	100.24	PASS	70-130	99889.1	102015.2	97.92	PASS	70-130
Std3-5/50 ppb	ICAL	1	6559075.6	6513486.4	100.7	PASS	70-130	100314.5	102015.2	98.33	PASS	70-130
Std4-10/100 ppb	ICAL	1	6593971.2	6513486.4	101.24	PASS	70-130	100163.3	102015.2	98.18	PASS	70-130
Std5-20/200 ppb	ICAL	1	6599719.6	6513486.4	101.32	PASS	70-130	98624.6	102015.2	96.68	PASS	70-130
Std6-40/400 ppb	ICAL	1	6620453.6	6513486.4	101.64	PASS	70-130	97724.5	102015.2	95.79	PASS	70-130
Std7-100/1000 ppb	ICAL	1	6514374.1	6513486.4	100.01	PASS	70-130	96887.2	102015.2	94.97	PASS	70-130
Std8-200/2000 ppb	ICAL	1	6590771.8	6513486.4	101.19	PASS	70-130	98165.7	102015.2	96.23	PASS	70-130
ICV	ICV	1	6436664.3	6513486.4	98.82	PASS	70-130	95544.3	102015.2	93.66	PASS	70-130
ICB	ICB	1	6708313.8	6513486.4	102.99	PASS	70-130	100015.5	102015.2	98.04	PASS	70-130
LLICV	CCV1	1	6556469.3	6513486.4	100.66	PASS	70-130	98259.8	102015.2	96.32	PASS	70-130
ICSA1	ICSA	1	6718608.7	6513486.4	103.15	PASS	70-130	112946.2	102015.2	110.72	PASS	70-130
ICSAB1	ICSAB	1	6311377.8	6513486.4	96.9	PASS	70-130	104873.2	102015.2	102.8	PASS	70-130
CCV1	CCV	1	6281150.9	6513486.4	96.43	PASS	70-130	90188.1	102015.2	88.41	PASS	70-130
CCB1	CCB	1	6271664.8	6513486.4	96.29	PASS	70-130	92945.2	102015.2	91.11	PASS	70-130
LLCCV1	CCV2	1	6185983.8	6513486.4	94.97	PASS	70-130	90686.6	102015.2	88.9	PASS	70-130
ICSA2	ICSA	1	6336783.4	6513486.4	97.29	PASS	70-130	103056.6	102015.2	101.02	PASS	70-130
ICSAB2	ICSAB	1	6558328	6513486.4	100.69	PASS	70-130	113702.3	102015.2	111.46	PASS	70-130
CCV2	CCV	1	6313054	6513486.4	96.92	PASS	70-130	101464.4	102015.2	99.46	PASS	70-130
CCB2	CCB	1	6109867.8	6513486.4	93.8	PASS	70-130	96668.4	102015.2	94.76	PASS	70-130
CCV3	CCV	1	7208967.8	6513486.4	110.68	PASS	70-130	111252.4	102015.2	109.06	PASS	70-130
CCB3	CCB	1	6980753.9	6513486.4	107.17	PASS	70-130	106245.8	102015.2	104.15	PASS	70-130
CCV4	CCV	1	6545404.6	6513486.4	100.49	PASS	70-130	95650.3	102015.2	93.76	PASS	70-130
CCB4	CCB	1	6411417.1	6513486.4	98.43	PASS	70-130	95522	102015.2	93.64	PASS	70-130
LLCCV2	CCV2	1	6367499.6	6513486.4	97.76	PASS	70-130	93239	102015.2	91.4	PASS	70-130
ICSA3	ICSA	1	6357333.7	6513486.4	97.6	PASS	70-130	101207.6	102015.2	99.21	PASS	70-130
ICSAB3	ICSAB	1	6456648.7	6513486.4	99.13	PASS	70-130	106829.7	102015.2	104.72	PASS	70-130
MB-57247	MBLK	1	6215340.3	6513486.4	95.42	PASS	70-130	93425	102015.2	91.58	PASS	70-130
LCS-57247	LCS	1	6108472.3	6513486.4	93.78	PASS	70-130	91215.7	102015.2	89.41	PASS	70-130
N019559-001B	SAMP	1	5566292.7	6513486.4	85.46	PASS	70-130	83106.2	102015.2	81.46	PASS	70-130
N019559-001B	SAMP	5	5923776.5	6513486.4	90.95	PASS	70-130	86444.4	102015.2	84.74	PASS	70-130
CCV5	CCV	1	6230133.7	6513486.4	95.65	PASS	70-130	91166	102015.2	89.37	PASS	70-130
CCB5	CCB	1	5997934.7	6513486.4	92.085	PASS	70-130	86745.7	102015.2	85.032	PASS	70-130
N019559-001B-PS	PS	1	5820794.9	6513486.4	89.37	PASS	70-130	85077.5	102015.2	83.4	PASS	70-130
N019559-001B-MS	MS	1	5950243.9	6513486.4	91.35	PASS	70-130	87628	102015.2	85.9	PASS	70-130
N019559-001B-MSD	MSD	1	5923897.1	6513486.4	90.95	PASS	70-130	88313.9	102015.2	86.57	PASS	70-130
N019559-002B	SAMP	1	5589561.3	6513486.4	85.82	PASS	70-130	82954.5	102015.2	81.32	PASS	70-130
N019559-003B	SAMP	1	5555524.5	6513486.4	85.29	PASS	70-130	82662.1	102015.2	81.029	PASS	70-130
N019559-004B	SAMP	1	5735618.3	6513486.4	88.058	PASS	70-130	86311.5	102015.2	84.61	PASS	70-130
N019559-005B	SAMP	1	5532288.9	6513486.4	84.94	PASS	70-130	81688.1	102015.2	80.074	PASS	70-130

INTERNAL STANDARD: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019559-006B	SAMP	1	5675778.7	6513486.4	87.14	PASS	70-130	84699.9	102015.2	83.027	PASS	70-130
N019559-007B	SAMP	1	5643277.3	6513486.4	86.64	PASS	70-130	83712.4	102015.2	82.059	PASS	70-130
N019559-008B	SAMP	1	5552430.1	6513486.4	85.25	PASS	70-130	82817.7	102015.2	81.18	PASS	70-130
CCV6	CCV	1	5866834.3	6513486.4	90.072	PASS	70-130	87788.5	102015.2	86.054	PASS	70-130
CCB6	CCB	1	5773711.8	6513486.4	88.64	PASS	70-130	82980.6	102015.2	81.34	PASS	70-130
N019559-009B	SAMP	1	5431452	6513486.4	83.39	PASS	70-130	78683.8	102015.2	77.13	PASS	70-130
N019559-010B	SAMP	1	5459556	6513486.4	83.82	PASS	70-130	82091.8	102015.2	80.47	PASS	70-130
N019559-011B	SAMP	1	5535262.5	6513486.4	84.98	PASS	70-130	82245	102015.2	80.62	PASS	70-130
N019559-011B-MS	MS	1	5498584.9	6513486.4	84.42	PASS	70-130	83319.4	102015.2	81.67	PASS	70-130
N019559-012B	SAMP	1	5632271	6513486.4	86.47	PASS	70-130	84316.7	102015.2	82.65	PASS	70-130
N019559-013B	SAMP	1	5696540.5	6513486.4	87.46	PASS	70-130	84485.2	102015.2	82.82	PASS	70-130
N019559-014B	SAMP	1	5560906.8	6513486.4	85.38	PASS	70-130	82325.8	102015.2	80.7	PASS	70-130
N019570-001B	SAMP	1	4825795.1	6513486.4	74.089	PASS	70-130	79712.1	102015.2	78.14	PASS	70-130
N019570-002B	SAMP	1	4437178.8	6513486.4	68.12	NR!	70-130	69871.7	102015.2	68.49	NR!	70-130
N019570-003B	SAMP	1	5335862	6513486.4	81.92	PASS	70-130	82582.5	102015.2	80.95	PASS	70-130
CCV7	CCV	1	6149881.8	6513486.4	94.42	PASS	70-130	90525.6	102015.2	88.74	PASS	70-130
CCB7	CCB	1	5852093.9	6513486.4	89.85	PASS	70-130	86626	102015.2	84.91	PASS	70-130
LLCCV3	CCV2	1	6022889.3	6513486.4	92.47	PASS	70-130	87005	102015.2	85.29	PASS	70-130
ICSA4	ICSA	1	5873867.9	6513486.4	90.18	PASS	70-130	89545	102015.2	87.78	PASS	70-130
ICSAB4	ICSAB	1	5992032.8	6513486.4	91.99	PASS	70-130	94003.5	102015.2	92.15	PASS	70-130
N019570-004B	SAMP	1	4221711.1	6513486.4	64.81	NR!	70-130	71853.5	102015.2	70.43	PASS	70-130
N019570-005B	SAMP	1	4556154	6513486.4	69.95	NR!	70-130	70863.5	102015.2	69.46	NR!	70-130
CCV8	CCV	1	5837361.2	6513486.4	89.62	PASS	70-130	86373	102015.2	84.67	PASS	70-130
CCB8	CCB	1	5737278.3	6513486.4	88.083	PASS	70-130	82396.1	102015.2	80.77	PASS	70-130
CCV9	CCV	1	5971104.2	6513486.4	91.67	PASS	70-130	84968.8	102015.2	83.29	PASS	70-130
CCB9	CCB	1	5883249.3	6513486.4	90.32	PASS	70-130	82818.2	102015.2	81.18	PASS	70-130
CCV10	CCV	1	5734732.4	6513486.4	88.044	PASS	70-130	80094.8	102015.2	78.51	PASS	70-130
CCB10	CCB	1	5635116.1	6513486.4	86.51	PASS	70-130	78000.6	102015.2	76.46	PASS	70-130
LLCCV4	CCV2	1	5777190.4	6513486.4	88.7	PASS	70-130	80512.5	102015.2	78.92	PASS	70-130
ICSA5	ICSA	1	5635054.9	6513486.4	86.51	PASS	70-130	80400.7	102015.2	78.81	PASS	70-130
ICSAB5	ICSAB	1	5618431.9	6513486.4	86.26	PASS	70-130	84145.9	102015.2	82.48	PASS	70-130

INTERNAL STANDARD: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	73685.3	73685.3	100	PASS	70-130	83590.6	83590.6	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	73232.3	73685.3	99.39	PASS	70-130	83000.9	83590.6	99.29	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	72774.8	73685.3	98.76	PASS	70-130	81428.3	83590.6	97.41	PASS	70-130
Std3-5/50 ppb	ICAL	1	73630.9	73685.3	99.93	PASS	70-130	81667.3	83590.6	97.7	PASS	70-130
Std4-10/100 ppb	ICAL	1	73139.7	73685.3	99.26	PASS	70-130	80680.3	83590.6	96.52	PASS	70-130
Std5-20/200 ppb	ICAL	1	71831.1	73685.3	97.48	PASS	70-130	80259.3	83590.6	96.015	PASS	70-130
Std6-40/400 ppb	ICAL	1	72235.7	73685.3	98.033	PASS	70-130	78771	83590.6	94.23	PASS	70-130
Std7-100/1000 ppb	ICAL	1	70581.6	73685.3	95.79	PASS	70-130	77512	83590.6	92.73	PASS	70-130
Std8-200/2000 ppb	ICAL	1	69571.8	73685.3	94.42	PASS	70-130	77150	83590.6	92.3	PASS	70-130
ICV	ICV	1	70194.8	73685.3	95.26	PASS	70-130	74937.8	83590.6	89.65	PASS	70-130
ICB	ICB	1	74126.3	73685.3	100.6	PASS	70-130	81497.7	83590.6	97.5	PASS	70-130
LLICV	CCV1	1	71830.5	73685.3	97.48	PASS	70-130	79072.9	83590.6	94.6	PASS	70-130
ICSA1	ICSA	1	75086	73685.3	101.9	PASS	70-130	82600	83590.6	98.81	PASS	70-130
ICSAB1	ICSAB	1	70506.7	73685.3	95.69	PASS	70-130	75831.9	83590.6	90.72	PASS	70-130
CCV1	CCV	1	65564.5	73685.3	88.98	PASS	70-130	72493	83590.6	86.72	PASS	70-130
CCB1	CCB	1	68009.8	73685.3	92.3	PASS	70-130	75093.1	83590.6	89.83	PASS	70-130
LLCCV1	CCV2	1	66777	73685.3	90.62	PASS	70-130	73908.5	83590.6	88.42	PASS	70-130
ICSA2	ICSA	1	69619	73685.3	94.48	PASS	70-130	73605.2	83590.6	88.054	PASS	70-130
ICSAB2	ICSAB	1	77263.2	73685.3	104.86	PASS	70-130	84902.6	83590.6	101.57	PASS	70-130
CCV2	CCV	1	73846.1	73685.3	100.22	PASS	70-130	83468.8	83590.6	99.85	PASS	70-130
CCB2	CCB	1	70255.3	73685.3	95.35	PASS	70-130	81222.8	83590.6	97.17	PASS	70-130
CCV3	CCV	1	78774.5	73685.3	106.91	PASS	70-130	87991.2	83590.6	105.26	PASS	70-130
CCB3	CCB	1	76272.5	73685.3	103.51	PASS	70-130	83871.9	83590.6	100.34	PASS	70-130
CCV4	CCV	1	70763.8	73685.3	96.035	PASS	70-130	75138.9	83590.6	89.89	PASS	70-130
CCB4	CCB	1	70997.1	73685.3	96.35	PASS	70-130	76464.8	83590.6	91.48	PASS	70-130
LLCCV2	CCV2	1	69418.4	73685.3	94.21	PASS	70-130	72571.5	83590.6	86.82	PASS	70-130
ICSA3	ICSA	1	69307.4	73685.3	94.059	PASS	70-130	71529.2	83590.6	85.57	PASS	70-130
ICSAB3	ICSAB	1	72971.3	73685.3	99.031	PASS	70-130	73806.3	83590.6	88.29	PASS	70-130
MB-57247	MBLK	1	69439.3	73685.3	94.24	PASS	70-130	71231.3	83590.6	85.21	PASS	70-130
LCS-57247	LCS	1	66969.1	73685.3	90.89	PASS	70-130	70210.2	83590.6	83.99	PASS	70-130
N019559-001B	SAMP	1	59141.1	73685.3	80.26	PASS	70-130	62911	83590.6	75.26	PASS	70-130
N019559-001B	SAMP	5	64259.3	73685.3	87.21	PASS	70-130	67519.6	83590.6	80.77	PASS	70-130
CCV5	CCV	1	67670.8	73685.3	91.84	PASS	70-130	70916.6	83590.6	84.84	PASS	70-130
CCB5	CCB	1	63925.7	73685.3	86.76	PASS	70-130	66242.8	83590.6	79.25	PASS	70-130
N019559-001B-PS	PS	1	61174.4	73685.3	83.021	PASS	70-130	62663.2	83590.6	74.96	PASS	70-130
N019559-001B-MS	MS	1	63048.8	73685.3	85.56	PASS	70-130	65046.7	83590.6	77.82	PASS	70-130
N019559-001B-MSD	MSD	1	63406.2	73685.3	86.05	PASS	70-130	65978.2	83590.6	78.93	PASS	70-130
N019559-002B	SAMP	1	59623.1	73685.3	80.92	PASS	70-130	63497.6	83590.6	75.96	PASS	70-130
N019559-003B	SAMP	1	59026.4	73685.3	80.11	PASS	70-130	62357.7	83590.6	74.6	PASS	70-130
N019559-004B	SAMP	1	61699.4	73685.3	83.73	PASS	70-130	64521.5	83590.6	77.19	PASS	70-130
N019559-005B	SAMP	1	58959.3	73685.3	80.015	PASS	70-130	61367.4	83590.6	73.41	PASS	70-130

INTERNAL STANDARD: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019559-006B	SAMP	1	60723.5	73685.3	82.41	PASS	70-130	63833.2	83590.6	76.36	PASS	70-130
N019559-007B	SAMP	1	59990	73685.3	81.41	PASS	70-130	64111.1	83590.6	76.7	PASS	70-130
N019559-008B	SAMP	1	59353.1	73685.3	80.55	PASS	70-130	63328	83590.6	75.76	PASS	70-130
CCV6	CCV	1	63750.6	73685.3	86.52	PASS	70-130	68873.9	83590.6	82.39	PASS	70-130
CCB6	CCB	1	61014.8	73685.3	82.8	PASS	70-130	65408.4	83590.6	78.25	PASS	70-130
N019559-009B	SAMP	1	56586.7	73685.3	76.8	PASS	70-130	59309.5	83590.6	70.95	PASS	70-130
N019559-010B	SAMP	1	58888.9	73685.3	79.92	PASS	70-130	62464.7	83590.6	74.73	PASS	70-130
N019559-011B	SAMP	1	59520.5	73685.3	80.78	PASS	70-130	62820.3	83590.6	75.15	PASS	70-130
N019559-011B-MS	MS	1	59300.7	73685.3	80.48	PASS	70-130	63072.5	83590.6	75.45	PASS	70-130
N019559-012B	SAMP	1	60789.6	73685.3	82.5	PASS	70-130	64083.1	83590.6	76.66	PASS	70-130
N019559-013B	SAMP	1	61407.3	73685.3	83.34	PASS	70-130	65447.3	83590.6	78.3	PASS	70-130
N019559-014B	SAMP	1	59032	73685.3	80.11	PASS	70-130	62354.1	83590.6	74.59	PASS	70-130
N019570-001B	SAMP	1	52497.5	73685.3	71.25	PASS	70-130	50859.1	83590.6	60.84	NR!	70-130
N019570-002B	SAMP	1	46561.8	73685.3	63.19	NR!	70-130	44895	83590.6	53.71	NR!	70-130
N019570-003B	SAMP	1	56335.8	73685.3	76.45	PASS	70-130	57856.6	83590.6	69.21	NR!	70-130
CCV7	CCV	1	66076.7	73685.3	89.67	PASS	70-130	70612.1	83590.6	84.47	PASS	70-130
CCB7	CCB	1	63143.9	73685.3	85.69	PASS	70-130	67616.3	83590.6	80.89	PASS	70-130
LLCCV3	CCV2	1	64274.2	73685.3	87.23	PASS	70-130	68677.1	83590.6	82.16	PASS	70-130
ICSA4	ICSA	1	62219.5	73685.3	84.44	PASS	70-130	66000.8	83590.6	78.96	PASS	70-130
ICSAB4	ICSAB	1	65713	73685.3	89.18	PASS	70-130	68261	83590.6	81.66	PASS	70-130
N019570-004B	SAMP	1	47491	73685.3	64.45	NR!	70-130	47982.4	83590.6	57.4	NR!	70-130
N019570-005B	SAMP	1	47954.6	73685.3	65.08	NR!	70-130	48885.2	83590.6	58.48	NR!	70-130
CCV8	CCV	1	62621.8	73685.3	84.99	PASS	70-130	67018.2	83590.6	80.17	PASS	70-130
CCB8	CCB	1	60703.5	73685.3	82.38	PASS	70-130	63849.1	83590.6	76.38	PASS	70-130
CCV9	CCV	1	62724.6	73685.3	85.12	PASS	70-130	66058	83590.6	79.026	PASS	70-130
CCB9	CCB	1	61255.7	73685.3	83.13	PASS	70-130	65105.1	83590.6	77.89	PASS	70-130
CCV10	CCV	1	59712	73685.3	81.037	PASS	70-130	62982	83590.6	75.35	PASS	70-130
CCB10	CCB	1	59251.5	73685.3	80.41	PASS	70-130	62505	83590.6	74.78	PASS	70-130
LLCCV4	CCV2	1	59699.9	73685.3	81.02	PASS	70-130	63402.8	83590.6	75.85	PASS	70-130
ICSA5	ICSA	1	58849.1	73685.3	79.87	PASS	70-130	60020	83590.6	71.8	PASS	70-130
ICSAB5	ICSAB	1	60692.3	73685.3	82.37	PASS	70-130	63120.6	83590.6	75.51	PASS	70-130

INTERNAL STANDARD: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1998384.1	1998384.1	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	1980535.3	1998384.1	99.11	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	1967134.5	1998384.1	98.44	PASS	70-130
Std3-5/50 ppb	ICAL	1	1990899.9	1998384.1	99.63	PASS	70-130
Std4-10/100 ppb	ICAL	1	1978656	1998384.1	99.013	PASS	70-130
Std5-20/200 ppb	ICAL	1	1984402.9	1998384.1	99.3	PASS	70-130
Std6-40/400 ppb	ICAL	1	1964279.3	1998384.1	98.29	PASS	70-130
Std7-100/1000 ppb	ICAL	1	1928566.8	1998384.1	96.51	PASS	70-130
Std8-200/2000 ppb	ICAL	1	1908944.3	1998384.1	95.52	PASS	70-130
ICV	ICV	1	1933522.3	1998384.1	96.75	PASS	70-130
ICB	ICB	1	2027323.2	1998384.1	101.45	PASS	70-130
LLICV	CCV1	1	1964351.8	1998384.1	98.3	PASS	70-130
ICSA1	ICSA	1	1898599.1	1998384.1	95.007	PASS	70-130
ICSAB1	ICSAB	1	1765004.2	1998384.1	88.32	PASS	70-130
CCV1	CCV	1	1813851.9	1998384.1	90.77	PASS	70-130
CCB1	CCB	1	1880495.8	1998384.1	94.1	PASS	70-130
LLCCV1	CCV2	1	1830403.8	1998384.1	91.59	PASS	70-130
ICSA2	ICSA	1	1737684.6	1998384.1	86.95	PASS	70-130
ICSAB2	ICSAB	1	1880511.3	1998384.1	94.1	PASS	70-130
CCV2	CCV	1	1929631	1998384.1	96.56	PASS	70-130
CCB2	CCB	1	1886674.3	1998384.1	94.41	PASS	70-130
CCV3	CCV	1	2130472.6	1998384.1	106.61	PASS	70-130
CCB3	CCB	1	2075023	1998384.1	103.84	PASS	70-130
CCV4	CCV	1	1877360.3	1998384.1	93.94	PASS	70-130
CCB4	CCB	1	1862775.8	1998384.1	93.21	PASS	70-130
LLCCV2	CCV2	1	1833241.7	1998384.1	91.74	PASS	70-130
ICSA3	ICSA	1	1737826.4	1998384.1	86.96	PASS	70-130
ICSAB3	ICSAB	1	1782304.6	1998384.1	89.19	PASS	70-130
MB-57247	MBLK	1	1780449.4	1998384.1	89.094	PASS	70-130
LCS-57247	LCS	1	1743145.3	1998384.1	87.23	PASS	70-130
N019559-001B	SAMP	1	1486391.6	1998384.1	74.38	PASS	70-130
N019559-001B	SAMP	5	1644376.8	1998384.1	82.29	PASS	70-130
CCV5	CCV	1	1777242.9	1998384.1	88.93	PASS	70-130
CCB5	CCB	1	1693812.5	1998384.1	84.76	PASS	70-130
N019559-001B-PS	PS	1	1531157	1998384.1	76.62	PASS	70-130
N019559-001B-MS	MS	1	1571942.8	1998384.1	78.66	PASS	70-130
N019559-001B-MSD	MSD	1	1582694.5	1998384.1	79.2	PASS	70-130
N019559-002B	SAMP	1	1487335.3	1998384.1	74.43	PASS	70-130
N019559-003B	SAMP	1	1476899.1	1998384.1	73.9	PASS	70-130
N019559-004B	SAMP	1	1529301.1	1998384.1	76.53	PASS	70-130
N019559-005B	SAMP	1	1453079.2	1998384.1	72.71	PASS	70-130

INTERNAL STANDARD: 160506B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N019559-006B	SAMP	1	1523339.2	1998384.1	76.23	PASS	70-130
N019559-007B	SAMP	1	1502923.5	1998384.1	75.21	PASS	70-130
N019559-008B	SAMP	1	1478753.5	1998384.1	74	PASS	70-130
CCV6	CCV	1	1672318.7	1998384.1	83.68	PASS	70-130
CCB6	CCB	1	1620317.4	1998384.1	81.081	PASS	70-130
N019559-009B	SAMP	1	1436555.9	1998384.1	71.89	PASS	70-130
N019559-010B	SAMP	1	1475997.5	1998384.1	73.86	PASS	70-130
N019559-011B	SAMP	1	1483775.7	1998384.1	74.25	PASS	70-130
N019559-011B-MS	MS	1	1480176.9	1998384.1	74.069	PASS	70-130
N019559-012B	SAMP	1	1499665.6	1998384.1	75.044	PASS	70-130
N019559-013B	SAMP	1	1515956.6	1998384.1	75.86	PASS	70-130
N019559-014B	SAMP	1	1472695	1998384.1	73.69	PASS	70-130
N019570-001B	SAMP	1	1216457.7	1998384.1	60.87	NR!	70-130
N019570-002B	SAMP	1	1087107	1998384.1	54.4	NR!	70-130
N019570-003B	SAMP	1	1358628.1	1998384.1	67.99	NR!	70-130
CCV7	CCV	1	1735002.1	1998384.1	86.82	PASS	70-130
CCB7	CCB	1	1668491.2	1998384.1	83.49	PASS	70-130
LLCCV3	CCV2	1	1681922	1998384.1	84.16	PASS	70-130
ICSA4	ICSA	1	1543644.8	1998384.1	77.24	PASS	70-130
ICSAB4	ICSAB	1	1611843.2	1998384.1	80.66	PASS	70-130
N019570-004B	SAMP	1	1147270.9	1998384.1	57.41	NR!	70-130
N019570-005B	SAMP	1	1171037.8	1998384.1	58.6	NR!	70-130
CCV8	CCV	1	1647169.8	1998384.1	82.43	PASS	70-130
CCB8	CCB	1	1612254.8	1998384.1	80.68	PASS	70-130
CCV9	CCV	1	1657657.2	1998384.1	82.95	PASS	70-130
CCB9	CCB	1	1620096.9	1998384.1	81.07	PASS	70-130
CCV10	CCV	1	1597843.2	1998384.1	79.96	PASS	70-130
CCB10	CCB	1	1550073.9	1998384.1	77.57	PASS	70-130
LLCCV4	CCV2	1	1596965.3	1998384.1	79.91	PASS	70-130
ICSA5	ICSA	1	1452613.1	1998384.1	72.69	PASS	70-130
ICSAB5	ICSAB	1	1493985.2	1998384.1	74.76	PASS	70-130

INTERNAL STANDARD: 160509A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5923501.6	5923501.6	100	PASS	70-130	71195.3	71195.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	5902027.7	5923501.6	99.64	PASS	70-130	72188.9	71195.3	101.4	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	5864665.7	5923501.6	99.007	PASS	70-130	73030.7	71195.3	102.58	PASS	70-130
Std3-5/50 ppb	ICAL	1	5794946.4	5923501.6	97.83	PASS	70-130	70640.1	71195.3	99.22	PASS	70-130
Std4-10/100 ppb	ICAL	1	5787181.9	5923501.6	97.7	PASS	70-130	69537.6	71195.3	97.67	PASS	70-130
Std5-20/200 ppb	ICAL	1	5775005.8	5923501.6	97.49	PASS	70-130	69613.3	71195.3	97.78	PASS	70-130
Std6-40/400 ppb	ICAL	1	5727820.3	5923501.6	96.7	PASS	70-130	68611.4	71195.3	96.37	PASS	70-130
Std7-100/1000 ppb	ICAL	1	5740790.6	5923501.6	96.92	PASS	70-130	67588.3	71195.3	94.93	PASS	70-130
Std8-200/2000 ppb	ICAL	1	5712823.8	5923501.6	96.44	PASS	70-130	66699	71195.3	93.68	PASS	70-130
ICV	ICV	1	6068030.5	5923501.6	102.44	PASS	70-130	70174.9	71195.3	98.57	PASS	70-130
ICB	ICB	1	6329781.7	5923501.6	106.86	PASS	70-130	73272.3	71195.3	102.92	PASS	70-130
LLICV	CCV1	1	6913192	5923501.6	116.71	PASS	70-130	82230.2	71195.3	115.5	PASS	70-130
ICSA1	ICSA	1	6182381.8	5923501.6	104.37	PASS	70-130	76715	71195.3	107.75	PASS	70-130
ICSAB1	ICSAB	1	6121305.4	5923501.6	103.34	PASS	70-130	74100.5	71195.3	104.08	PASS	70-130
CCV1	CCV	1	6277491.6	5923501.6	105.98	PASS	70-130	78648.5	71195.3	110.47	PASS	70-130
CCB1	CCB	1	6277691.7	5923501.6	105.98	PASS	70-130	75943.2	71195.3	106.67	PASS	70-130
MB-57247	MBLK	1	6471079.6	5923501.6	109.24	PASS	70-130	78365.6	71195.3	110.07	PASS	70-130
LCS-57247	LCS	1	6650303.1	5923501.6	112.27	PASS	70-130	75973.7	71195.3	106.71	PASS	70-130
N019559-001B	SAMP	5	6362104	5923501.6	107.4	PASS	70-130	75060.5	71195.3	105.43	PASS	70-130
N019559-001B	SAMP	25	6412003.8	5923501.6	108.25	PASS	70-130	76910.4	71195.3	108.03	PASS	70-130
N019559-001B-PS	PS	5	6369306.6	5923501.6	107.53	PASS	70-130	73408.6	71195.3	103.11	PASS	70-130
N019559-001B-MS	MS	5	6394985.1	5923501.6	107.96	PASS	70-130	74614.3	71195.3	104.8	PASS	70-130
N019559-001B-MSD	MSD	5	6454300.6	5923501.6	108.96	PASS	70-130	75271.3	71195.3	105.73	PASS	70-130
N019559-002B	SAMP	1	6289178.4	5923501.6	106.17	PASS	70-130	74656.4	71195.3	104.86	PASS	70-130
N019559-003B	SAMP	1	6386042.4	5923501.6	107.81	PASS	70-130	74402.2	71195.3	104.5	PASS	70-130
CCV2	CCV	1	6529262.8	5923501.6	110.23	PASS	70-130	77797.6	71195.3	109.27	PASS	70-130
CCB2	CCB	1	6539218.5	5923501.6	110.39	PASS	70-130	76160.3	71195.3	106.97	PASS	70-130
N019559-004B	SAMP	1	6684470.3	5923501.6	112.85	PASS	70-130	77893.7	71195.3	109.41	PASS	70-130
N019559-005B	SAMP	1	6468452.9	5923501.6	109.2	PASS	70-130	72691	71195.3	102.1	PASS	70-130
N019559-006B	SAMP	1	6731139.1	5923501.6	113.63	PASS	70-130	75996.5	71195.3	106.74	PASS	70-130
N019559-007B	SAMP	1	6742907.7	5923501.6	113.83	PASS	70-130	77907	71195.3	109.43	PASS	70-130
N019559-008B	SAMP	1	6644959.1	5923501.6	112.18	PASS	70-130	78205.5	71195.3	109.85	PASS	70-130
N019559-009B	SAMP	1	6508438.6	5923501.6	109.87	PASS	70-130	75868.9	71195.3	106.56	PASS	70-130
N019559-010B	SAMP	1	6763673.9	5923501.6	114.18	PASS	70-130	79326.3	71195.3	111.42	PASS	70-130
N019559-011B	SAMP	5	6771969.5	5923501.6	114.32	PASS	70-130	83289.1	71195.3	116.99	PASS	70-130
N019559-011B-MS	MS	5	6813552.9	5923501.6	115.03	PASS	70-130	82530.8	71195.3	115.92	PASS	70-130
N019559-012B	SAMP	1	6723881.6	5923501.6	113.51	PASS	70-130	80115.4	71195.3	112.53	PASS	70-130
CCV3	CCV	1	6661704.5	5923501.6	112.46	PASS	70-130	81147.3	71195.3	113.98	PASS	70-130
CCB3	CCB	1	6611881.1	5923501.6	111.62	PASS	70-130	78919.5	71195.3	110.85	PASS	70-130
N019559-013B	SAMP	1	6815705.9	5923501.6	115.06	PASS	70-130	80050.6	71195.3	112.44	PASS	70-130
N019559-014B	SAMP	1	6689064.9	5923501.6	112.92	PASS	70-130	74872	71195.3	105.16	PASS	70-130

INTERNAL STANDARD: 160509A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019570-001B	SAMP	5	6130142.8	5923501.6	103.49	PASS	70-130	71905.5	71195.3	101	PASS	70-130
N019570-002B	SAMP	5	5880159.5	5923501.6	99.27	PASS	70-130	75993.8	71195.3	106.74	PASS	70-130
N019570-003B	SAMP	5	6333823.1	5923501.6	106.93	PASS	70-130	85955	71195.3	120.73	PASS	70-130
N019570-004B	SAMP	5	6073161	5923501.6	102.53	PASS	70-130	77213.8	71195.3	108.45	PASS	70-130
N019570-005B	SAMP	5	6161062.1	5923501.6	104.01	PASS	70-130	79464.5	71195.3	111.61	PASS	70-130
N019570-005B	SAMP	25	6606530.6	5923501.6	111.53	PASS	70-130	87241.6	71195.3	122.54	PASS	70-130
N019570-002B	SAMP	5	6056911.8	5923501.6	102.25	PASS	70-130	76967.2	71195.3	108.11	PASS	70-130
CCV4	CCV	1	6609195.8	5923501.6	111.58	PASS	70-130	85893.5	71195.3	120.64	PASS	70-130
CCB4	CCB	1	6703611.4	5923501.6	113.17	PASS	70-130	85237.9	71195.3	119.72	PASS	70-130
LLCCV1	CCV2	1	7170987.4	5923501.6	121.06	PASS	70-130	90450.2	71195.3	127.05	PASS	70-130
ICSA2	ICSA	1	7264026.3	5923501.6	122.63	PASS	70-130	85329.5	71195.3	119.85	PASS	70-130
ICSAB2	ICSAB	1	6262635.5	5923501.6	105.73	PASS	70-130	86255.4	71195.3	121.15	PASS	70-130
CCV5	CCV	1	6208867.1	5923501.6	104.82	PASS	70-130	78755.6	71195.3	110.62	PASS	70-130
CCB5	CCB	1	6219524.3	5923501.6	105	PASS	70-130	79211.3	71195.3	111.26	PASS	70-130
CCV6	CCV	1	6137986.2	5923501.6	103.62	PASS	70-130	75537.3	71195.3	106.1	PASS	70-130
CCB6	CCB	1	6137302	5923501.6	103.61	PASS	70-130	75644.1	71195.3	106.25	PASS	70-130
CCV7	CCV	1	6107045.9	5923501.6	103.1	PASS	70-130	75617.5	71195.3	106.21	PASS	70-130
CCB7	CCB	1	6115549.7	5923501.6	103.24	PASS	70-130	74183.4	71195.3	104.2	PASS	70-130
LLCCV2	CCV2	1	6654167.7	5923501.6	112.34	PASS	70-130	80198.1	71195.3	112.65	PASS	70-130
ICSA3	ICSA	1	6581367.5	5923501.6	111.11	PASS	70-130	76678.1	71195.3	107.7	PASS	70-130
ICSAB3	ICSAB	1	5741813.3	5923501.6	96.93	PASS	70-130	76595.3	71195.3	107.58	PASS	70-130
CCV8	CCV	1	6629120.5	5923501.6	111.91	PASS	70-130	84886.9	71195.3	119.23	PASS	70-130
CCB8	CCB	1	6584031.6	5923501.6	111.15	PASS	70-130	83945.8	71195.3	117.91	PASS	70-130
CCV9	CCV	1	7338519.3	5923501.6	123.89	PASS	70-130	87636.4	71195.3	123.09	PASS	70-130
CCB9	CCB	1	7187451.7	5923501.6	121.34	PASS	70-130	83539.2	71195.3	117.34	PASS	70-130
CCV10	CCV	1	7000694.6	5923501.6	118.19	PASS	70-130	77510.9	71195.3	108.87	PASS	70-130
CCB10	CCB	1	6887460.9	5923501.6	116.27	PASS	70-130	78156.1	71195.3	109.78	PASS	70-130
LLCCV3	CCV2	1	7486074.7	5923501.6	126.38	PASS	70-130	85600.6	71195.3	120.23	PASS	70-130
ICSA4	ICSA	1	7268655.6	5923501.6	122.71	PASS	70-130	80461.6	71195.3	113.02	PASS	70-130
ICSAB4	ICSAB	1	6548505.1	5923501.6	110.55	PASS	70-130	78944.3	71195.3	110.88	PASS	70-130
CCV11	CCV	1	6745652.7	5923501.6	113.88	PASS	70-130	79502.5	71195.3	111.67	PASS	70-130
CCB11	CCB	1	6715498.8	5923501.6	113.37	PASS	70-130	78117.2	71195.3	109.72	PASS	70-130
CCV12	CCV	1	6483227.2	5923501.6	109.45	PASS	70-130	75603.2	71195.3	106.19	PASS	70-130
CCB12	CCB	1	6480051.7	5923501.6	109.4	PASS	70-130	75494.7	71195.3	106.04	PASS	70-130
LLCCV4	CCV2	1	7050611.5	5923501.6	119.03	PASS	70-130	84724	71195.3	119	PASS	70-130
ICSA5	ICSA	1	7076986.8	5923501.6	119.47	PASS	70-130	77920.8	71195.3	109.45	PASS	70-130
ICSAB5	ICSAB	1	6265937.3	5923501.6	105.78	PASS	70-130	76740.3	71195.3	107.79	PASS	70-130

INTERNAL STANDARD: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	64095.1	64095.1	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	65161.6	64095.1	101.66	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	64201.2	64095.1	100.17	PASS	70-130
Std3-5/50 ppb	ICAL	1	63793	64095.1	99.53	PASS	70-130
Std4-10/100 ppb	ICAL	1	62364.1	64095.1	97.3	PASS	70-130
Std5-20/200 ppb	ICAL	1	61838.8	64095.1	96.48	PASS	70-130
Std6-40/400 ppb	ICAL	1	63586.5	64095.1	99.21	PASS	70-130
Std7-100/1000 ppb	ICAL	1	60987	64095.1	95.15	PASS	70-130
Std8-200/2000 ppb	ICAL	1	62645.7	64095.1	97.74	PASS	70-130
ICV	ICV	1	60410.3	64095.1	94.25	PASS	70-130
ICB	ICB	1	67768.8	64095.1	105.73	PASS	70-130
LLICV	CCV1	1	72413.3	64095.1	112.98	PASS	70-130
ICSA1	ICSA	1	67452.1	64095.1	105.24	PASS	70-130
ICSAB1	ICSAB	1	65165.3	64095.1	101.67	PASS	70-130
N019559-008B	SAMP	1	72581.6	64095.1	113.24	PASS	70-130
CCV1	CCV	1	67675.4	64095.1	105.59	PASS	70-130
CCB1	CCB	1	67012.5	64095.1	104.55	PASS	70-130
CCV2	CCV	1	70212.4	64095.1	109.54	PASS	70-130
CCB2	CCB	1	66598.5	64095.1	103.91	PASS	70-130
CCV3	CCV	1	62349.6	64095.1	97.28	PASS	70-130
CCB3	CCB	1	59695.2	64095.1	93.14	PASS	70-130
CCV4	CCV	1	72194.7	64095.1	112.64	PASS	70-130
CCB4	CCB	1	73926.3	64095.1	115.34	PASS	70-130
LLCCV1	CCV2	1	77682.8	64095.1	121.2	PASS	70-130
ICSA2	ICSA	1	72756.9	64095.1	113.51	PASS	70-130
ICSAB2	ICSAB	1	64203.3	64095.1	100.17	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N019559
Test Method: EPA 6020
Analysis Date: 5/6/2016

Matrix: Groundwater
Batch No.: 57247

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N019559-001B DT 5X	Arsenic	ug/L	2.403192	NA	2.331477	3.08%	10
N019559-001B DT 5X	Chromium	ug/L	0.799018	NA	0.121157	559.49%	10
N019559-001B DT 5X	Manganese	ug/L	0	NA	0		10
N019559-001B DT 5X	Molybdenum	ug/L	5.256025	NA	5.500301	4.44%	10
N019559-001B DT 5X	Selenium	ug/L	1.943264	NA	1.868184	4.02%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N019559
Test Method: EPA 6020
Analysis Date: 5/9/2016

Matrix: Groundwater
Batch No.: 57247

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N019559-001B DT 25X	Barium	ug/L	138.0029	PASS	136.7427	0.92%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019559-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108313
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/6/2016	SeqNo:	2318236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.114	0.10	10.00	2.331	97.8	80	120				
Manganese	94.171	0.50	100.0	0	94.2	80	120				
Molybdenum	16.161	0.50	10.00	5.500	107	80	120				
Selenium	11.561	0.50	10.00	1.868	96.9	80	120				

Sample ID	N019559-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2321105

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	240.673	5.0	100.0	136.7	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019559
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N019559-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108312
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/6/2016	SeqNo:	2318102

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.896	1.0	10.00	0.1212	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Detection Limit
Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

ACCEPTANCE CRITERIA: MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	MDL*10	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0313	0.3133	0.3000	0.187	0.50	0.515	103
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0248	0.2485	0.3000	0.049	0.10	0.103	103
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699	0.6986	0.3000	0.403	1.00	1.245	125
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0430	0.4304	0.3000	0.185	0.50	0.524	105
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0473	0.4734	0.3000	0.174	0.50	0.501	100
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0192	0.1925	0.3000	0.321	1.00	0.973	97
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263	0.2630	0.3000	0.163	0.50	0.475	95
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2626	2.6262	0.3000	0.328	1.00	1.062	106
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7517	7.5170	0.3000	0.605	10.00	11.338	113
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367	0.3670	0.3000	0.343	1.00	1.018	102
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0554	0.5543	0.3000	0.193	0.50	0.605	121
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0385	0.3853	0.3000	0.247	0.50	0.660	132
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0395	0.3954	0.3000	0.341	1.00	1.002	100
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276	0.2760	0.3000	0.170	0.50	0.502	100
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590	0.5899	0.3000	0.247	1.00	1.029	103
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296	0.2961	0.3000	0.186	0.50	0.549	110
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0327	0.3272	0.3000	0.181	0.50	0.533	107
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213	0.2133	0.3000	0.221	1.00	0.873	87
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2678	2.6780	0.3000	3.286	10.00	10.085	101

May 17, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019560

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 28, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N019560-004 and N019560-009 due to matrix interference. Samples were analyzed at lower dilution however retention time criteria and matrix spike were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N019560-004, N019560-009 and N019560-012 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) is outside recovery criteria for Chromium on QC sample N019560-012B-MS since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *17-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019560
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019560-001A	MW-711-Q216	Groundwater	4/28/2016 4:20:00 PM	4/28/2016	5/17/2016
N019560-002A	MW-911-Q216	Groundwater	4/28/2016 12:56:00 PM	4/28/2016	5/17/2016
N019560-002B	MW-911-Q216	Groundwater	4/28/2016 12:56:00 PM	4/28/2016	5/17/2016
N019560-002C	MW-911-Q216	Groundwater	4/28/2016 12:56:00 PM	4/28/2016	5/17/2016
N019560-003A	MW-912-Q216	Groundwater	4/28/2016 9:58:00 AM	4/28/2016	5/17/2016
N019560-003B	MW-912-Q216	Groundwater	4/28/2016 9:58:00 AM	4/28/2016	5/17/2016
N019560-003C	MW-912-Q216	Groundwater	4/28/2016 9:58:00 AM	4/28/2016	5/17/2016
N019560-004A	MW-72BR-200-Q216	Groundwater	4/28/2016 4:21:00 PM	4/28/2016	5/17/2016
N019560-004B	MW-72BR-200-Q216	Groundwater	4/28/2016 4:21:00 PM	4/28/2016	5/17/2016
N019560-004C	MW-72BR-200-Q216	Groundwater	4/28/2016 4:21:00 PM	4/28/2016	5/17/2016
N019560-005A	MW-63-065-Q216	Groundwater	4/28/2016 9:48:00 AM	4/28/2016	5/17/2016
N019560-005B	MW-63-065-Q216	Groundwater	4/28/2016 9:48:00 AM	4/28/2016	5/17/2016
N019560-005C	MW-63-065-Q216	Groundwater	4/28/2016 9:48:00 AM	4/28/2016	5/17/2016
N019560-006A	MW-60-125-Q216	Groundwater	4/28/2016 12:26:00 PM	4/28/2016	5/17/2016
N019560-006B	MW-60-125-Q216	Groundwater	4/28/2016 12:26:00 PM	4/28/2016	5/17/2016
N019560-006C	MW-60-125-Q216	Groundwater	4/28/2016 12:26:00 PM	4/28/2016	5/17/2016
N019560-007A	MW-26-Q216	Groundwater	4/28/2016 4:17:00 PM	4/28/2016	5/17/2016
N019560-007B	MW-26-Q216	Groundwater	4/28/2016 4:17:00 PM	4/28/2016	5/17/2016
N019560-007C	MW-26-Q216	Groundwater	4/28/2016 4:17:00 PM	4/28/2016	5/17/2016
N019560-008A	MW-57-070-Q216	Groundwater	4/28/2016 2:21:00 PM	4/28/2016	5/17/2016
N019560-008B	MW-57-070-Q216	Groundwater	4/28/2016 2:21:00 PM	4/28/2016	5/17/2016
N019560-008C	MW-57-070-Q216	Groundwater	4/28/2016 2:21:00 PM	4/28/2016	5/17/2016
N019560-009A	MW-57-185-Q216	Groundwater	4/28/2016 3:35:00 PM	4/28/2016	5/17/2016
N019560-009B	MW-57-185-Q216	Groundwater	4/28/2016 3:35:00 PM	4/28/2016	5/17/2016
N019560-009C	MW-57-185-Q216	Groundwater	4/28/2016 3:35:00 PM	4/28/2016	5/17/2016
N019560-010A	MW-58BR-Q216	Groundwater	4/28/2016 12:51:00 PM	4/28/2016	5/17/2016
N019560-010B	MW-58BR-Q216	Groundwater	4/28/2016 12:51:00 PM	4/28/2016	5/17/2016
N019560-010C	MW-58BR-Q216	Groundwater	4/28/2016 12:51:00 PM	4/28/2016	5/17/2016
N019560-011A	MW-70-105-Q216	Groundwater	4/28/2016 11:11:00 AM	4/28/2016	5/17/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019560
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019560-011B	MW-70-105-Q216	Groundwater	4/28/2016 11:11:00 AM	4/28/2016	5/17/2016
N019560-011C	MW-70-105-Q216	Groundwater	4/28/2016 11:11:00 AM	4/28/2016	5/17/2016
N019560-012A	MW-70BR-225-Q216	Groundwater	4/28/2016 10:16:00 AM	4/28/2016	5/17/2016
N019560-012B	MW-70BR-225-Q216	Groundwater	4/28/2016 10:16:00 AM	4/28/2016	5/17/2016
N019560-012C	MW-70BR-225-Q216	Groundwater	4/28/2016 10:16:00 AM	4/28/2016	5/17/2016
N019560-013A	MW-710-Q216	Groundwater	4/28/2016 4:35:00 PM	4/28/2016	5/17/2016

ASSET LABORATORIES
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11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-711-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 4:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505B**	QC Batch: **R108291**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 05:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 12:56:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505B**	QC Batch: **R108291**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	0.60	0.066	0.20		µg/L	1	5/5/2016 06:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/9/2016 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 9:58:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	1.5	0.066	0.20		µg/L	1	5/6/2016 11:37 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	2.2	0.019	1.0		µg/L	1	5/9/2016 08:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 4:21:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	3.9	0.33	1.0		µg/L	5	5/6/2016 12:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	3.6	0.019	1.0		µg/L	1	5/9/2016 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	1.5	0.066	0.20		µg/L	1	5/6/2016 12:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	2.2	0.019	1.0		µg/L	1	5/9/2016 09:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-006

Client Sample ID: MW-60-125-Q216
Collection Date: 4/28/2016 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505B**	QC Batch: **R108291**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	940	6.6	20		µg/L	100	5/5/2016 08:14 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	990	0.19	10		µg/L	10	5/10/2016 12:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 4:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505B**	QC Batch: **R108291**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	2500	33	100		µg/L	500	5/5/2016 08:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	2700	0.48	25		µg/L	25	5/10/2016 12:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 2:21:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505B**	QC Batch: **R108291**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	470	6.6	20		µg/L	100	5/5/2016 08:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	510	0.096	5.0		µg/L	5	5/10/2016 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 3:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	4.6	0.33	1.0		µg/L	5	5/6/2016 01:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	5.6	0.019	1.0		µg/L	1	5/9/2016 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	0.56	0.066	0.20		µg/L	1	5/6/2016 01:36 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/9/2016 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-011

Client Sample ID: MW-70-105-Q216
Collection Date: 4/28/2016 11:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505B**	QC Batch: **R108291**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	120	1.3	4.0		µg/L	20	5/5/2016 10:13 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	140	0.019	1.0		µg/L	1	5/9/2016 09:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 10:16:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505B**	QC Batch: **R108291**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	2000	13	40		µg/L	200	5/5/2016 10:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	2100	0.48	25		µg/L	25	5/10/2016 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-710-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 4:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160505B**	QC Batch: **R108291**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2016 10:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R108291**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108291**
Client ID: **PBW**	Batch ID: **R108291**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R108291**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108291**
Client ID: **LCSW**	Batch ID: **R108291**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.053	0.20	5.000	0	101	90	110				

Sample ID **N019560-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108291**
Client ID: **ZZZZZZ**	Batch ID: **R108291**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N019560-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108291**
Client ID: **ZZZZZZ**	Batch ID: **R108291**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.058	0.20	1.000	0	106	90	110				

Sample ID **N019560-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108291**
Client ID: **ZZZZZZ**	Batch ID: **R108291**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.091	0.20	1.000	0	109	90	110	1.058	3.04	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019560-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108291
Client ID:	ZZZZZZ	Batch ID:	R108291	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317547

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.694	0.20	1.000	0.6042	109	90	110				

Sample ID	N019560-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108291
Client ID:	ZZZZZZ	Batch ID:	R108291	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317557

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1432.210	20	500.0	939.7	98.5	90	110				

Sample ID	N019560-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108291
Client ID:	ZZZZZZ	Batch ID:	R108291	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317559

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5078.900	100	2500	2480	104	90	110				

Sample ID	N019560-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108291
Client ID:	ZZZZZZ	Batch ID:	R108291	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317561

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	968.890	20	500.0	468.3	100	90	110				

Sample ID	N019560-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108291
Client ID:	ZZZZZZ	Batch ID:	R108291	TestNo:	EPA 218.6			Analysis Date:	5/5/2016	SeqNo:	2317569

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	222.094	4.0	100.0	122.4	99.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019560-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108291**
Client ID: **ZZZZZZ**	Batch ID: **R108291**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3045.140	40	1000	2017	103	90	110				

Sample ID **N019560-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108291**
Client ID: **ZZZZZZ**	Batch ID: **R108291**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2016**	SeqNo: **2317573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.154	0.20	1.000	0.1080	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R108316**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **PBW**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R108316**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **LCSW**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.933	0.20	5.000	0	98.7	90	110				

Sample ID **N019560-003ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.359	0.20						1.500	9.92	20	

Sample ID **N019560-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.585	0.20	5.000	1.500	102	90	110				

Sample ID **N019560-003AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.436	0.20	5.000	1.500	98.7	90	110	6.585	2.29	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019560-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.674	1.0	25.00	3.866	99.2	90	110				

Sample ID	N019560-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.643	0.20	5.000	1.479	103	90	110				

Sample ID	N019560-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318386

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	30.518	1.0	25.00	4.626	104	90	110				

Sample ID	N019560-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318388

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.740	0.20	5.000	0.5618	104	90	110				

Sample ID	N019570-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.612	4.0	100.0	99.98	98.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019570-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	905.970	20	500.0	413.1	98.6	90	110				

Sample ID **N019570-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8496.800	200	5000	3340	103	90	110				

Sample ID **N019570-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.099	0.20	1.000	0	110	90	110				

Sample ID **N019570-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.481	1.0	5.000	0.4645	100	90	110				

Sample ID **N019570-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.005	1.0	25.00	20.46	98.2	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019590-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	62.072	1.0	25.00	37.29	99.1	90	110				

Sample ID **N019590-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3121.600	50	1250	1853	102	90	110				

Sample ID **N019590-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Sample ID **N019590-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID **N019590-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1173.700	20	500.0	667.7	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019590-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	27.365	1.0	25.00	2.674	98.8	90	110				

Sample ID **N019590-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-57284**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108343**
Client ID: **PBW**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-57284**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108343**
Client ID: **LCSW**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.236	1.0	10.00	0	102	85	115				

Sample ID **N019560-002B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108343**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.855	1.0	10.00	0.6707	91.8	75	125				

Sample ID **N019560-002B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108343**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.757	1.0	10.00	0.6707	90.9	75	125	9.855	1.00	20	

Sample ID **N019560-012B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108369**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2110.796	25	10.00	2125	-137	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 12:56:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.080	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 9:58:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.85	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 4:21:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.072	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.76	0.022	0.050		mg/L	1	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-006

Client Sample ID: MW-60-125-Q216
Collection Date: 4/28/2016 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	4.3	0.11	0.25		mg/L	5	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 4:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	21	0.44	1.0		mg/L	20	5/7/2016

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 2:21:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160507D**	QC Batch: **R108308**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	7.3	0.22	0.50		mg/L	10	5/7/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 3:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.085	0.022	0.050		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.081	0.022	0.050		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 11:11:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.9	0.11	0.25		mg/L	5	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 10:16:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.6	0.11	0.25		mg/L	5	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R108308	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	PBW	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318759

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R108308	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	LCSW	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.492	0.050	0.5000	0	98.4	85	115				

Sample ID	N019519-013CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	ZZZZZZ	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318762

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.03580	0	20	

Sample ID	N019519-013CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	ZZZZZZ	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318763

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0.03580	92.9	75	125				

Sample ID	N019519-013CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108308
Client ID:	ZZZZZZ	Batch ID:	R108308	TestNo:	SM4500-NO3			Analysis Date:	5/7/2016	SeqNo:	2318764

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0.03580	91.5	75	125	0.5005	1.45	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R108423**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **PBW**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R108423**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **LCSW**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.479	0.050	0.5000	0	95.8	85	115				

Sample ID **N019560-010CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **ZZZZZZ**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.068	0.050						0.08140	17.4	20	

Sample ID **N019560-010CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **ZZZZZZ**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.586	0.050	0.5000	0.08140	101	75	125				

Sample ID **N019560-010CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **ZZZZZZ**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.674	0.050	0.5000	0.08140	118	75	125	0.5861	13.9	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 12:56:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160509A**	QC Batch: **57284**				PrepDate	**5/4/2016**	Analyst: **CEI**
Arsenic	1.3	0.025	0.10		µg/L	1	5/9/2016 08:21 PM
Manganese	400	0.28	2.5		µg/L	5	5/9/2016 08:27 PM
Molybdenum	27	0.039	0.50		µg/L	1	5/9/2016 08:21 PM
Selenium	0.90	0.028	0.50		µg/L	1	5/10/2016 11:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-003

Client Sample ID: MW-912-Q216
Collection Date: 4/28/2016 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57284**			PrepDate	**5/4/2016**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	5/9/2016 08:49 PM
Manganese	2.2	0.056	0.50		µg/L	1	5/9/2016 08:49 PM
Molybdenum	19	0.039	0.50		µg/L	1	5/9/2016 08:49 PM
Selenium	0.86	0.028	0.50		µg/L	1	5/9/2016 08:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 4:21:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160509A**	QC Batch: **57284**				PrepDate	**5/4/2016**	Analyst: **CEI**
Arsenic	16	0.025	0.10		µg/L	1	5/9/2016 08:55 PM
Manganese	16	0.056	0.50		µg/L	1	5/9/2016 08:55 PM
Molybdenum	87	0.19	2.5		µg/L	5	5/10/2016 12:26 PM
Selenium	ND	0.028	0.50		µg/L	1	5/9/2016 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-005

Client Sample ID: MW-63-065-Q216
Collection Date: 4/28/2016 9:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Arsenic	1.6	0.025	0.10		µg/L	1	5/9/2016 09:00 PM
Manganese	2.3	0.056	0.50		µg/L	1	5/9/2016 09:00 PM
Molybdenum	20	0.039	0.50		µg/L	1	5/9/2016 09:00 PM
Selenium	0.91	0.028	0.50		µg/L	1	5/10/2016 12:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-006

Client Sample ID: MW-60-125-Q216
Collection Date: 4/28/2016 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57284**			PrepDate	**5/4/2016**	Analyst: **CEI**	
Arsenic	1.6	0.025	0.10		µg/L	1	5/9/2016 09:17 PM
Manganese	3.0	0.056	0.50		µg/L	1	5/9/2016 09:17 PM
Molybdenum	20	0.039	0.50		µg/L	1	5/9/2016 09:17 PM
Selenium	6.1	0.028	0.50		µg/L	1	5/9/2016 09:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 4:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160509A**	QC Batch: **57284**				PrepDate	**5/4/2016**	Analyst: **CEI**
Arsenic	2.0	0.025	0.10		µg/L	1	5/9/2016 09:22 PM
Manganese	ND	0.056	0.50		µg/L	1	5/9/2016 09:22 PM
Molybdenum	35	0.039	0.50		µg/L	1	5/9/2016 09:22 PM
Selenium	50	0.028	0.50		µg/L	1	5/9/2016 09:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-008

Client Sample ID: MW-57-070-Q216
Collection Date: 4/28/2016 2:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Arsenic	1.4	0.025	0.10		µg/L	1	5/9/2016 09:28 PM
Manganese	3.9	0.056	0.50		µg/L	1	5/9/2016 09:28 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/9/2016 09:28 PM
Selenium	3.2	0.028	0.50		µg/L	1	5/9/2016 09:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-009

Client Sample ID: MW-57-185-Q216
Collection Date: 4/28/2016 3:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57284**			PrepDate	**5/4/2016**	Analyst: **CEI**	
Arsenic	10	0.025	0.10		µg/L	1	5/9/2016 09:33 PM
Manganese	240	0.28	2.5		µg/L	5	5/10/2016 01:05 PM
Molybdenum	94	0.19	2.5		µg/L	5	5/10/2016 01:05 PM
Selenium	ND	0.028	0.50		µg/L	1	5/9/2016 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-010

Client Sample ID: MW-58BR-Q216
Collection Date: 4/28/2016 12:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57284**			PrepDate	**5/4/2016**	Analyst: **CEI**	
Arsenic	1.4	0.025	0.10		µg/L	1	5/9/2016 09:39 PM
Manganese	430	0.28	2.5		µg/L	5	5/10/2016 01:11 PM
Molybdenum	29	0.039	0.50		µg/L	1	5/9/2016 09:39 PM
Selenium	1.1	0.028	0.50		µg/L	1	5/9/2016 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019560
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019560-011

Client Sample ID: MW-70-105-Q216
Collection Date: 4/28/2016 11:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57284**			PrepDate	**5/4/2016**	Analyst: **CEI**	
Arsenic	4.8	0.025	0.10		µg/L	1	5/9/2016 09:45 PM
Manganese	37	0.056	0.50		µg/L	1	5/9/2016 09:45 PM
Molybdenum	91	0.039	0.50		µg/L	1	5/9/2016 09:45 PM
Selenium	4.9	0.028	0.50		µg/L	1	5/9/2016 09:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-Q216
Lab Order:	N019560	**Collection Date:**	4/28/2016 10:16:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019560-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160509A**	QC Batch: **57284**				PrepDate	**5/4/2016**	Analyst: **CEI**
Arsenic	2.0	0.025	0.10		µg/L	1	5/9/2016 09:50 PM
Manganese	1.2	0.056	0.50		µg/L	1	5/9/2016 09:50 PM
Molybdenum	19	0.19	2.5		µg/L	5	5/10/2016 01:16 PM
Selenium	2.5	0.028	0.50		µg/L	1	5/9/2016 09:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57284**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **PBW**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-57284**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **LCSW**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.228	0.10	10.00	0	102	85	115				
Manganese	103.046	0.50	100.0	0	103	85	115				
Molybdenum	10.802	0.50	10.00	0	108	85	115				
Selenium	9.505	0.50	10.00	0	95.1	85	115				

Sample ID **N019560-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.515	0.10	10.00	1.345	102	75	125				
Molybdenum	39.152	0.50	10.00	26.96	122	75	125				

Sample ID **N019560-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.814	0.10	10.00	1.345	105	75	125	11.52	2.57	20	
Molybdenum	39.026	0.50	10.00	26.96	121	75	125	39.15	0.322	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N019560-012B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.330	0.10	10.00	2.040	103	75	125				
Manganese	91.371	0.50	100.0	1.159	90.2	75	125				
Selenium	12.237	0.50	10.00	2.488	97.5	75	125				

Sample ID **N019560-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	505.884	2.5	100.0	404.0	102	75	125				

Sample ID **N019560-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	497.873	2.5	100.0	404.0	93.8	75	125	505.9	1.60	20	

Sample ID **N019560-012B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	30.503	2.5	10.00	19.11	114	75	125				

Sample ID **N019560-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2326884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.863	0.50	10.00	0.9006	89.6	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019560
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019560-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/4/2016	RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57284	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2326885

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.397	0.50	10.00	0.9006	95.0	75	125	9.863	5.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition	Y N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	1. Chilled	✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@ritigen.com	Address:	Geotracker	RWQCB ✓	2. Headspace	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	3. Container Intact	
Submitted By: Jason Medley			Others ✓	LEVEL III	4. Seal Present	
Title:	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Specify: RWQCB	LEVEL IV	5. IR number	2
Signature: Date: 4/28/16	Sampled By: Jacob Mathews		Global ID:	Regulatory	6. Method of Cooling: Ice	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface		Specify State:	Sample Temp: 29C	
Project Name: PG&E Topock - GMP	Signature: Date: 4/28/16				Courier:	
Project Number: RC000753.0801					Tracking No.:	

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019560 - 01	MW-711-Q216	4/28/2016	1620		X								E	1	P	B	
2	- 02	MW-911-Q216	4/28/2016	1256		X		X	X	X	X	X	X	E	3	P	BNS	
3	- 03	MW-912-Q216	4/28/2016	0958		X		X	X	X	X	X	X	E	3	P	BNS	
4	- 04	MW-72BR-200-Q216	4/28/2016	1621		X		X	X	X	X	X	X	E	3	P	BNS	
5	- 05	MW-63-065-Q216	4/28/2016	0948		X		X	X	X	X	X	X	E	3	P	BNS	
6	- 06	MW-60-125-Q216	4/28/2016	1226		X		X	X	X	X	X	X	E	3	P	BNS	
7	- 07	MW-26-Q216	4/28/2016	1617		X		X	X	X	X	X	X	E	3	P	BNS	
8	- 08	MW-57-070-Q216	4/28/2016	1421		X		X	X	X	X	X	X	E	3	P	BNS	
9	- 09	MW-57-185-Q216	4/28/2016	1535		X		X	X	X	X	X	X	E	3	P	BNS	
10	- 10	MW-58BR-Q216	4/28/2016	1251		X		X	X	X	X	X	X	E	3	P	BNS	
11	- 11	MW-70-105-Q216	4/28/2016	1111		X		X	X	X	X	X	X	E	3	P	BNS	
12	- 12	MW-70BR-225-Q216	4/28/2016	1016		X		X	X	X	X	X	X	E	3	P	BNS	
13	- 13	MW-710-Q216	4/28/2016	1635		X								E	1	P	B	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	4/28/16 1640		4/28/16 1640
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	4/28/16 1801		4/28/16 1951
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/28/2016	Workorder:	N019560
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: MBC For: 5/2/2016

Reviewed By: 05/05/16

ASSET Laboratories

WORK ORDER Summary

29-Apr-16

WorkOrder: N019560

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019560-001A	MW-711-Q216	4/28/2016 4:20:00 PM	5/12/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-002A	MW-911-Q216	4/28/2016 12:56:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-002B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-002C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-003A	MW-912-Q216	4/28/2016 9:58:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-003B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-003C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-004A	MW-72BR-200-Q216	4/28/2016 4:21:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-004B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-004C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-005A	MW-63-065-Q216	4/28/2016 9:48:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-005B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-005C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

29-Apr-16

WorkOrder: N019560

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019560-006A	MW-60-125-Q216	4/28/2016 12:26:00 PM	5/12/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-006B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-006C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-007A	MW-26-Q216	4/28/2016 4:17:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-007B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-007C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-008A	MW-57-070-Q216	4/28/2016 2:21:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-008B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-008C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-009A	MW-57-185-Q216	4/28/2016 3:35:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-009B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-009C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-010A	MW-58BR-Q216	4/28/2016 12:51:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

29-Apr-16

WorkOrder: N019560

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/28/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019560-010B	MW-58BR-Q216	4/28/2016 12:51:00 PM	5/12/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-010C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-011A	MW-70-105-Q216	4/28/2016 11:11:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-011B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-011C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-012A	MW-70BR-225-Q216	4/28/2016 10:16:00 AM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-012B			5/12/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019560-012C			5/12/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019560-013A	MW-710-Q216	4/28/2016 4:35:00 PM	5/12/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019560-014A	FOLDER		5/12/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/12/2016		Folder	Folder	☐	☐	☐	LAB

May 17, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019570

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 29, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N019570-001 due to matrix interference. Sample was analyzed at lower dilution however retention time criteria and matrix spike were not met indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for all samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET Laboratories

Date: *17-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019570
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019570-001A	MW-60BR-245-Q216	Groundwater	4/29/2016 8:20:00 AM	4/29/2016	5/17/2016
N019570-001B	MW-60BR-245-Q216	Groundwater	4/29/2016 8:20:00 AM	4/29/2016	5/17/2016
N019570-001C	MW-60BR-245-Q216	Groundwater	4/29/2016 8:20:00 AM	4/29/2016	5/17/2016
N019570-002A	MW-72-080-Q216	Groundwater	4/29/2016 10:52:00 AM	4/29/2016	5/17/2016
N019570-002B	MW-72-080-Q216	Groundwater	4/29/2016 10:52:00 AM	4/29/2016	5/17/2016
N019570-002C	MW-72-080-Q216	Groundwater	4/29/2016 10:52:00 AM	4/29/2016	5/17/2016
N019570-003A	MW-73-080-Q216	Groundwater	4/29/2016 7:40:00 AM	4/29/2016	5/17/2016
N019570-003B	MW-73-080-Q216	Groundwater	4/29/2016 7:40:00 AM	4/29/2016	5/17/2016
N019570-003C	MW-73-080-Q216	Groundwater	4/29/2016 7:40:00 AM	4/29/2016	5/17/2016
N019570-004A	MW-61-110-Q216	Groundwater	4/29/2016 9:05:00 AM	4/29/2016	5/17/2016
N019570-004B	MW-61-110-Q216	Groundwater	4/29/2016 9:05:00 AM	4/29/2016	5/17/2016
N019570-004C	MW-61-110-Q216	Groundwater	4/29/2016 9:05:00 AM	4/29/2016	5/17/2016
N019570-005A	MW-59-100-Q216	Groundwater	4/29/2016 9:50:00 AM	4/29/2016	5/17/2016
N019570-005B	MW-59-100-Q216	Groundwater	4/29/2016 9:50:00 AM	4/29/2016	5/17/2016
N019570-005C	MW-59-100-Q216	Groundwater	4/29/2016 9:50:00 AM	4/29/2016	5/17/2016
N019570-006A	MW-713-Q216	Groundwater	4/29/2016 10:00:00 AM	4/29/2016	5/17/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 8:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/6/2016 04:18 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/9/2016 03:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 10:52:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	100	1.3	4.0		µg/L	20	5/6/2016 02:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	89	0.019	1.0		µg/L	1	5/6/2016 11:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 7:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	20	0.33	1.0		µg/L	5	5/6/2016 04:39 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160506B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	20	0.019	1.0		µg/L	1	5/6/2016 11:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 9:05:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	410	6.6	20		µg/L	100	5/6/2016 03:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	400	0.096	5.0		µg/L	5	5/9/2016 03:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 9:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	3300	66	200		µg/L	1000	5/6/2016 03:36 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57247**			PrepDate	**5/2/2016**		Analyst: **CEI**
Chromium	3400	0.48	25		µg/L	25	5/9/2016 04:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-713-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/6/2016 03:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019570
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108316	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	PBW	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318373

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R108316	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	LCSW	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.933	0.20	5.000	0	98.7	90	110				

Sample ID	N019560-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318376

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.359	0.20						1.500	9.92	20	

Sample ID	N019560-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.585	0.20	5.000	1.500	102	90	110				

Sample ID	N019560-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.436	0.20	5.000	1.500	98.7	90	110	6.585	2.29	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019570
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019560-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.674	1.0	25.00	3.866	99.2	90	110				

Sample ID	N019560-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.643	0.20	5.000	1.479	103	90	110				

Sample ID	N019560-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318386

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	30.518	1.0	25.00	4.626	104	90	110				

Sample ID	N019560-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318388

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.740	0.20	5.000	0.5618	104	90	110				

Sample ID	N019570-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.612	4.0	100.0	99.98	98.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019570
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019570-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	905.970	20	500.0	413.1	98.6	90	110				

Sample ID **N019570-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8496.800	200	5000	3340	103	90	110				

Sample ID **N019570-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.099	0.20	1.000	0	110	90	110				

Sample ID **N019570-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.481	1.0	5.000	0.4645	100	90	110				

Sample ID **N019570-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.005	1.0	25.00	20.46	98.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019570
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019590-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	62.072	1.0	25.00	37.29	99.1	90	110				

Sample ID **N019590-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3121.600	50	1250	1853	102	90	110				

Sample ID **N019590-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Sample ID **N019590-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID **N019590-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1173.700	20	500.0	667.7	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019570
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019590-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318419

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	27.365	1.0	25.00	2.674	98.8	90	110				

Sample ID	N019590-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318422

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019570
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-57247**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **PBW**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.293	1.0									

Sample ID **LCS-57247**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **LCSW**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.812	1.0	10.00	0	108	85	115				

Sample ID **N019559-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.031	1.0	10.00	0.1212	99.1	75	125				

Sample ID **N019559-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.944	1.0	10.00	0.1212	98.2	75	125	10.03	0.867	20	

Sample ID **N019559-011B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108312**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.807	1.0	10.00	0	98.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 8:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.13	0.022	0.050		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 10:52:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.76	0.022	0.050		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 7:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.5	0.11	0.25		mg/L	5	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 9:05:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.65	0.022	0.050		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 9:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019570
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R108423	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	PBW	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324464

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R108423	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	LCSW	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324465

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.479	0.050	0.5000	0	95.8	85	115				

Sample ID	N019560-010CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	ZZZZZZ	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.068	0.050						0.08140	17.4	20	

Sample ID	N019560-010CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	ZZZZZZ	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324468

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.586	0.050	0.5000	0.08140	101	75	125				

Sample ID	N019560-010CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	ZZZZZZ	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.674	0.050	0.5000	0.08140	118	75	125	0.5861	13.9	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 8:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160509A**	QC Batch: **57247**				PrepDate	**5/2/2016**	Analyst: **CEI**
Arsenic	6.8	0.12	0.50		µg/L	5	5/9/2016 03:45 PM
Manganese	17	0.28	2.5		µg/L	5	5/9/2016 03:45 PM
Molybdenum	62	0.19	2.5		µg/L	5	5/9/2016 03:45 PM
Selenium	2.6	0.14	2.5		µg/L	5	5/9/2016 03:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019570
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019570-002

Client Sample ID: MW-72-080-Q216
Collection Date: 4/29/2016 10:52:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160506C**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	10	0.025	0.10		µg/L	1	5/6/2016 11:37 PM
Manganese	37	0.056	0.50		µg/L	1	5/6/2016 11:37 PM
Molybdenum	76	0.19	2.5		µg/L	5	5/9/2016 03:40 PM
Selenium	ND	0.14	2.5		µg/L	5	5/9/2016 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 7:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160506C**	QC Batch: **57247**				PrepDate	**5/2/2016**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	5/6/2016 11:48 PM
Manganese	2.4	0.056	0.50		µg/L	1	5/6/2016 11:48 PM
Molybdenum	22	0.19	2.5		µg/L	5	5/9/2016 03:51 PM
Selenium	ND	0.14	2.5		µg/L	5	5/9/2016 03:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q216
Lab Order:	N019570	**Collection Date:**	4/29/2016 9:05:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019570-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160509A**	QC Batch: **57247**				PrepDate	**5/2/2016**	Analyst: **CEI**
Arsenic	3.3	0.12	0.50		µg/L	5	5/9/2016 03:56 PM
Manganese	150	0.056	0.50		µg/L	1	5/7/2016 12:22 AM
Molybdenum	24	0.19	2.5		µg/L	5	5/9/2016 03:56 PM
Selenium	ND	0.14	2.5		µg/L	5	5/9/2016 03:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019570
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019570-005

Client Sample ID: MW-59-100-Q216
Collection Date: 4/29/2016 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57247**			PrepDate	**5/2/2016**	Analyst: **CEI**	
Arsenic	2.2	0.12	0.50		µg/L	5	5/9/2016 04:02 PM
Manganese	ND	0.28	2.5		µg/L	5	5/9/2016 04:02 PM
Molybdenum	8.0	0.19	2.5		µg/L	5	5/9/2016 04:02 PM
Selenium	2.5	0.14	2.5		µg/L	5	5/9/2016 04:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019570
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57247**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108313**
Client ID: **PBW**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.106	0.50									
Selenium	ND	0.50									

Sample ID **LCS-57247**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108313**
Client ID: **LCSW**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.090	0.10	10.00	0	101	85	115				
Manganese	102.399	0.50	100.0	0	102	85	115				
Molybdenum	10.380	0.50	10.00	0	104	85	115				
Selenium	10.490	0.50	10.00	0	105	85	115				

Sample ID **N019559-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.270	0.10	10.00	2.331	99.4	75	125				
Manganese	94.885	0.50	100.0	0	94.9	75	125				
Molybdenum	16.229	0.50	10.00	5.500	107	75	125				
Selenium	11.727	0.50	10.00	1.868	98.6	75	125				

Sample ID **N019559-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2016**	RunNo: **108313**
Client ID: **ZZZZZZ**	Batch ID: **57247**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/6/2016**	SeqNo: **2318238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.362	0.10	10.00	2.331	100	75	125	12.27	0.745	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019570
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019559-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108313
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/6/2016	SeqNo:	2318238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.422	0.50	100.0	0	94.4	75	125	94.88	0.489	20	
Molybdenum	16.086	0.50	10.00	5.500	106	75	125	16.23	0.888	20	
Selenium	11.589	0.50	10.00	1.868	97.2	75	125	11.73	1.19	20	

Sample ID	N019559-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/2/2016	RunNo:	108313
Client ID:	ZZZZZZ	Batch ID:	57247	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/6/2016	SeqNo:	2318251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.394	0.10	10.00	2.218	102	75	125				
Manganese	94.254	0.50	100.0	0	94.3	75	125				
Molybdenum	16.125	0.50	10.00	5.183	109	75	125				
Selenium	11.388	0.50	10.00	1.558	98.3	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigon.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Jacob Mathews		Phone: 949-727-1400, ext 200	Fax:
Title:	Phone: 916-786-3302 Fax:		
Signature: Date: 4/29/16	Sampled By: Nara Tay		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - GMP	Signature: Date: 4/28/16		
Project Number: RC000753.0801			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	/	
2. Headspace		
3. Container Intact	/	
4. Seal Present		/
5. IR number	2	
6. Method of Cooling: Ice		
Sample Temp: 2.6°C		

Courier:

Tracking No.:

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019570 - 1	MW-60BR-245-Q216	4/29/2016	0820		X		X	X	X	X	X	X	E	3	P	BNS	
2	-2	MW-72-080-Q216	4/29/2016	~~0740~~ 1052		X		X	X	X	X	X	X	E	3	P	BNS	
2	-3	MW-73-080-Q216	4/29/2016	~~1052~~ 0740		X		X	X	X	X	X	X	E	3	P	BNS	
3	-4	MW-61-110-Q216	4/29/2016	0905		X		X	X	X	X	X	X	E	3	P	BNS	
4	-5	MW-59-100-Q216	4/29/2016	0950		X		X	X	X	X	X	X	E	3	P	BNS	
5	-6	MW-713-Q216	4/29/2016	1000		X								E	1	P	B	
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Nara Tay	4/29/16 1120		4/29/16 @ 1300
	4/29/16 @ 1600	Yvonne Rodriguez	4/29/16 16:00

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days. surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis. TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/29/2016	Workorder:	N019570
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR For: 5/2/2016

Reviewed By: 05/05/16

ASSET Laboratories

WORK ORDER Summary

03-May-16

WorkOrder: N019570

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/29/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019570-001A	MW-60BR-245-Q216	4/29/2016 8:20:00 AM	5/13/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019570-001B			5/13/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019570-001C			5/13/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019570-002A	MW-72-080-Q216	4/29/2016 10:52:00 AM	5/13/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019570-002B			5/13/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019570-002C			5/13/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019570-003A	MW-73-080-Q216	4/29/2016 7:40:00 AM	5/13/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019570-003B			5/13/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019570-003C			5/13/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019570-004A	MW-61-110-Q216	4/29/2016 9:05:00 AM	5/13/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019570-004B			5/13/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019570-004C			5/13/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019570-005A	MW-59-100-Q216	4/29/2016 9:50:00 AM	5/13/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-16

WorkOrder: N019570

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/29/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019570-005B	MW-59-100-Q216	4/29/2016 9:50:00 AM	5/13/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/13/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019570-005C			5/13/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019570-006A	MW-713-Q216	4/29/2016 10:00:00 AM	5/13/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019570-007A	FOLDER		5/13/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/13/2016		Folder	Folder	☐	☐	☐	LAB

Laboratory Report

ASSET Laboratories

Project #: N19571

APPL SDG: 79717

APPL, Inc.

Number of pages in report: _____

Data Validation Package

for

ARF 79717

TABLE OF CONTENTS

LABORATORY NAME: *APPL, Inc.*

Case Narrative	3
ARF, COC, CRF, client communications	8
Metals Analysis	14
QC Summary	15
Sample Data	19
Calibration Data	32
Raw Data	67
Inorganic Analysis	89
QC Summary	90
Sample Data	94
Calibration Data	111
Raw Data	131

CASE NARRATIVE

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Case Narrative

ARF: 79717

Project: N19571 AZ GMP

State Certification Number: CA1312 (DW, WW & HW)

NELAP Certification number: CA00046 (HW)

Arizona Certification Number: AZ0474

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sample Receipt Information:

Eight water samples were received on May 3, 2016, at 3.5°C. The sample group was assigned Analytical Request Form (ARF) number 79717. The sample numbers and requested analyses were compared to the chain of custody. No exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
N019571-001/MW-54-85-EB-Q216	AZ34899	WATER	04/29/16	05/03/16
N019571-002/MW-54-085-Q216	AZ34900	WATER	04/29/16	05/03/16
N019571-003/MW-54-140-EB-Q216	AZ34901	WATER	04/29/16	05/03/16
N019571-004/MW-54-140-Q216	AZ34902	WATER	04/29/16	05/03/16
N019571-005/MW-54-195-EB-Q216	AZ34903	WATER	04/29/16	05/03/16
N019571-006/MW-54-195-Q216	AZ34904	WATER	04/29/16	05/03/16
N019571-007A/MW-712-Q216	AZ34905	WATER	04/29/16	05/03/16
N019571-008A/MW-715-Q216	AZ34906	WATER	04/29/16	05/03/16

EPA Method 6020A
Metals

Sample Preparation Information

The water samples were digested according to EPA method 3015. No exception was encountered. All holding times were met.

Analysis Information:

Samples:

The samples were analyzed for dissolved metals according to EPA method 6020A using an Agilent 7700X ICP-MS.

Calibrations:

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All calibration acceptance criteria were met. Manganese was detected above the LOD in the ICS-A. It is a trace impurity listed by the manufacturer.

Blanks:

No target compound was detected at or above one-half the PQL in the method blank.

Spikes:

A Laboratory Control Spike (LCS), matrix spikes (MS/MSD), post digestion spikes (PDS), and serial dilutions (DT) were used for quality assurance. All acceptance criteria were met in the LCS.

Sample N019571-006/MW-54-195-Q216 was designated by the laboratory for MS/MSD analysis. One analyte recovered above the 120% upper control limit in the MS. The MSD, PDS, and DT met acceptance criteria.

Internal Standards:

All method acceptance criteria were met for the internal standards.

Summary:

No other analytical exception is noted. All data are acceptable.

Inorganic Analysis
EPA Method 218.7

Sample Preparation Information:

The water samples were prepared according to the method.

Analysis Information:

Samples:

The samples were analyzed according to EPA methods 218.7 using a Dionex IC5000 ion chromatograph.

Calibrations:

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard.

Blanks:

No target compound was detected at or above one-half the PQL in the method blank.

Spikes:

A Laboratory Control Spike (LCS) and matrix spikes (MS/MSD) were used for quality assurance. All LCS acceptance criteria were met.

Sample N019571-001/MW-54-85-EB-Q216 was designated by the laboratory for MS/MSD analysis. All acceptance criteria were met.

Summary:

No analytical exception is noted. All data are acceptable.

CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

for PM 5-24-16

Paula McCartney, Laboratory Director / Date

CHAIN OF CUSTODY, ARF, CRF, AND CLIENT COMMUNICATION

APPL - Analysis Request Form 79717

Client: **ASSET Laboratories**
Address: **3151-3153 W. Post Rd.**
Las Vegas, NV 89118
Attn: **Marlon Cartin**
Phone: **702-307-2659** Fax: **702-307-2691**
Job: **N19571 AZ GMP**
PO #: **N19571A**
Chain of Custody (Y/N): **Y** # **050216**
RAD Screen (Y/N): **Y** pH (Y/N): **Y**
Turn Around Type: **14 DAYS**

Received by: **CM**
Date Received: **05/03/16** Time: **11:15**
Delivered by: **GSO**
Shuttle Custody Seals (Y/N): **N** Time Zone: **-7**
Chest Temp(s): **3.5°C**
Color: **C-BLK/O-ORGGRN**
Samples Chilled until Placed in Refrig/Freezer: **Y**
Project Manager: **Cynthia Clark**
QC Report Type: **DVP4/EDD/AZ**
Due Date: **05/17/16**

Comments:
std TAT is 2 weeks, no later than 3 weeks

email report to marlon@, reports.lv@assetlaboratories.com;
EDD: excel to marlon@assetlaboratories.com;
Use AZ certified methods

Sample Distribution:
Metals: 3-$62A14WD(Cr), 3-$62A14WD(As,Cr,Mn)
Wetlab: 8-$2187
Other: 6-_M3015F

Charges:

Invoice To:
ATL/ASSET
edrom@assetlaboratories.com

	Client ID	APPL ID	Sampled	Analyses Requested
1.	N019571-001/MW-54-85-EB-Q216	AZ34899W	04/29/16 07:45	$2187, $62A14WD(Cr)
2.	N019571-002/MW-54-085-Q216	AZ34900W	04/29/16 08:26	$2187, $62A14WD(As,Cr,Mn)
3.	N019571-003/MW-54-140-EB-Q216	AZ34901W	04/29/16 08:35	$2187, $62A14WD(Cr)
4.	N019571-004/MW-54-140-Q216	AZ34902W	04/29/16 09:03	$2187, $62A14WD(As,Cr,Mn)
5.	N019571-005/MW-54-195-EB-Q216	AZ34903W	04/29/16 07:40	$2187, $62A14WD(Cr)
6.	N019571-006/MW-54-195-Q216	AZ34904W	04/29/16 08:20	$2187, $62A14WD(As,Cr,Mn)

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -7 UTC
Page 1 Client Code: ADVTL *Printed 05/03/16 7:21:21 PM* Computer: RENEECOMPUT **# 79717**

7.	N019571-007A/MW-712-Q216	AZ34905W	04/29/16	08:35	$2187
8.	N019571-008A/MW-715-Q216	AZ34906W	04/29/16	08:30	$2187

APPL Sample Receipt Form

ARF# **79717**

Sample	Container Type	Count	pH
AZ34899	6 PL 500mL - HNO3	1	1.7
	26 Other	1	10
AZ34900	6 PL 500mL - HNO3	1	1.7
	26 Other	2	10
AZ34901	6 PL 500mL - HNO3	1	1.7
	26 Other	1	10
AZ34902	6 PL 500mL - HNO3	1	1.7
	26 Other	2	10
AZ34903	6 PL 500mL - HNO3	1	1.7
	26 Other	1	10
AZ34904	6 PL 500mL - HNO3	1	1.7
	26 Other	2	10
AZ34905	26 Other	1	10
AZ34906	26 Other	1	10

Sample	Container Type	Count	pH

79717

35

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

APPL, Inc.
908 N. Temperance Ave.
Clovis, CA 93611

TEL: (559) 275-2175
FAX: (209) 275-4422
Acct #:

Field Sampler: Jason Mahn

02-May-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: Cr6+ EPA 218.6	Requested Tests: EPA 6020 (Dissolved)	
N019571-001A / MW-54-085-EB-Q216	Groundwater	4/29/2016 7:45:00 AM	8OZP	1		
N019571-001B / MW-54-085-EB-Q216	Groundwater	4/29/2016 7:45:00 AM	16OZP		1	Cr
N019571-002A / MW-54-085-Q216	Groundwater	4/29/2016 8:26:00 AM	8OZP	1		
N019571-002B / MW-54-085-Q216	Groundwater	4/29/2016 8:26:00 AM	16OZP		1	As, Cr, Mn
N019571-003A / MW-54-140-EB-Q216	Groundwater	4/29/2016 8:35:00 AM	8OZP	1		
N019571-003B / MW-54-140-EB-Q216	Groundwater	4/29/2016 8:35:00 AM	16OZP		1	Cr
N019571-004A / MW-54-140-Q216	Groundwater	4/29/2016 9:03:00 AM	8OZP	1		
N019571-004B / MW-54-140-Q216	Groundwater	4/29/2016 9:03:00 AM	16OZP		1	As, Cr, Mn
N019571-005A / MW-54-195-EB-Q216	Groundwater	4/29/2016 7:40:00 AM	8OZP	1		
N019571-005B / MW-54-195-EB-Q216	Groundwater	4/29/2016 7:40:00 AM	16OZP		1	Cr
N019571-006A / MW-54-195-Q216	Groundwater	4/29/2016 8:20:00 AM	8OZP	1		
N019571-006B / MW-54-195-Q216	Groundwater	4/29/2016 8:20:00 AM	16OZP		1	As, Cr, Mn
N019571-007A / MW-712-Q216	Groundwater	4/29/2016 8:35:00 AM	8OZP	1		
N019571-008A / MW-715-Q216	Groundwater	4/29/2016 8:30:00 AM	8OZP	1		

AZ GMP

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N19571A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

GSO #: 5317857746

		Date/Time			Date/Time
Relinquished by:	Yoandra Rodriguez	5/2/16 17:00	Received by:		
Relinquished by:			Received by:		5/3/16 11:15

COOLER RECEIPT FORM **ARF: 79717**

1) Project: NA Date Received: 05/03/16

2) Coolers: Number of Coolers: 1

3) No Were custody seals present and intact?
How many? 0 Name/Date on seal? ____

4) YES Was there a shipping slip? Carrier name: GSO

5) Type of packing in cooler: __ bubble wrap __ popcorn __ foam X plastic bags
X wet ice __ dry ice __ no ice __ other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use J5297

8) Cooler temp(s): In °C
1: 3.5 2: ____ 3: ____ 4: ____ 5: ____ 6: ____
7: ____ 8: ____ 9: ____ 10: ____ 11: ____ 12: ____

Chain of custody:

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) NA Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea: ____
Smaller than a pea: ____

Preservation Hold time:

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) Yes Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) Yes Was the pH of acid preserved non-VOA samples < 2?

21) Yes Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) NO Were unpreserved VOA Vials received?

23) NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: 90B2031, HC573149
Lab notified if pH was not adequate: ____

Notes/Deficiencies:

Personnel receiving samples: IC Second reviewer: VL
Personnel labeling samples: ____
Project manager notified: ____ Date/Time of notification ____
Name of client notified: ____ Date/Time of notification ____

Revision: 22, November 5, 2013

METALS

APPL, INC.

METALS
QC Summary

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
6020A	ARSENIC (AS) (DISSOLVED)	Not detected	5.0	0.31	ug/L	05/19/16	05/20/16	#62A14-160519B-AZ34904
6020A	CHROMIUM (CR) (DISSOLV	Not detected	10.0	0.45	ug/L	05/19/16	05/20/16	#62A14-160519B-AZ34904
6020A	MANGANESE (MN) (DISSOL	Not detected	3.5	0.30	ug/L	05/19/16	05/20/16	#62A14-160519B-AZ34904

Metals SC-Blank-REG MDLs
Printed: 05/22/16 10:10:39 AM

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	ARSENIC (AS) (DISSOLVED)	50.0	42.8	85.6	80-120	05/19/16	05/20/16	#62A14-160519B-AZ34904
EPA 6020A	CHROMIUM (CR) (DISSOLVED)	50.0	46.9	93.8	80-120	05/19/16	05/20/16	#62A14-160519B-AZ34904
EPA 6020A	MANGANESE (MN) (DISSOLVED	50.0	46.0	92.0	80-120	05/19/16	05/20/16	#62A14-160519B-AZ34904

Comments: _____

Matrix Spike Recoveries

METALS

APPL ID: **160519W-34904 MS - 207674**

Sample ID: AZ34904

Client ID: N019571-006/MW-54-195-Q216

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	ARSENIC (AS) (DISSO	50.0	0.87	51.1	51.2	100	101	0.2	20	80-120	05/19/16	05/19/16	05/19/16	05/19/16	207674	AZ34904
EPA 6020A	CHROMIUM (CR) (DIS	50.0	ND	49.7	48.1	99.4	96.2	3.3	20	80-120	05/19/16	05/19/16	05/19/16	05/19/16	207674	AZ34904
EPA 6020A	MANGANESE (MN) (DI	50.0	185	251	239	132 #	108	4.9	20	80-120	05/19/16	05/19/16	05/19/16	05/19/16	207674	AZ34904

= Recovery is outside QC limits.

Comments:

METALS
Sample Data

APPL, INC.

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19571 AZ GMP
Sample ID: N019571-001/MW-54-85-EB-Q216
Sample Collection Date: 04/29/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79717
APPL ID: AZ34899

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	0.83 J	10.0	0.45	ug/L	1	05/19/16	05/19/16

J = Estimated value.

Printed: 05/22/16 10:10:35 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ34899W02 DF10
Data File Name	072SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:35:15-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.026	-0.293	-12.29	160	16.53	10000	
B	11	45	NoGas	1.125	12.501	10.01	59474	1.02	10000	
Na	23	45	He	32.412	360.138	11.57	29430	2.45	1000000	
Mg	24	45	He	6.842	76.022	19.38	1161	15.42	1000000	
Al	27	45	He	1.648	18.315	73.83	272	17.16	1000000	
K	39	45	He	5.079	56.439	65.94	6682	3.64	500000	
Ca	40	45	H2	14.870	165.221	12.17	97835	1.40	500000	
Ti	47	45	He	0.023	0.250	315.00	3	100.05	10000	
V	51	45	He	0.079	0.873	38.57	247	30.55	10000	
Cr	52	45	He	0.075	0.832	3.51	730	3.45	10000	
Mn	55	45	He	0.055	0.611	118.85	161	43.61	50000	
Fe	56	45	He	0.325	3.609	9.46	4498	1.14	1000000	
Co	59	45	He	0.062	0.687	29.79	570	21.91	10000	
Ni	60	45	He	0.107	1.186	15.75	363	8.85	10000	
Cu	63	45	He	0.081	0.902	10.28	2155	0.73	10000	
Zn	66	115	He	-0.140	-1.556	-67.65	809	7.48	50000	
As	75	115	He	0.086	0.958	24.17	41	19.05	2000	
Se	78	72	H2	0.154	1.712	13.30	79	7.42	10000	
Se	78	115	He	-0.024	-0.264	-1404.58	2	173.21	10000	
Sr	88	115	NoGas	0.040	0.442	15.51	8132	5.94	50000	
Mo	95	115	NoGas	0.064	0.714	22.81	1227	18.24	10000	
Ag	107	115	NoGas	0.010	0.112	26.71	550	20.49	5000	
Cd	111	115	He	0.022	0.246	17.08	29	10.66	10000	
Sn	118	115	He	0.159	1.763	28.20	408	13.24	10000	
Sn	118	115	NoGas	0.102	1.133	2.26	5458	1.38	10000	
Sb	121	115	NoGas	1.474	16.374	1.54	55320	1.80	10000	
Ba	137	165	NoGas	0.024	0.261	38.85	703	13.44	50000	
Tl	205	165	NoGas	0.034	0.375	5.62	2360	5.89	5000	
Pb	208	165	NoGas	-0.003	-0.028	-126.12	6821	3.31	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	245994	0.21	236257	104.12	70	120	
Sc	45	H2	488155	4.01	485596	100.53	70	120	
Sc	45	He	32595	2.43	32391	100.63	70	120	
Sc	45	NoGas	3666213	0.18	3469736	105.66	70	120	
Ge	72	H2	142012	5.30	144823	98.06	70	120	
Ge	72	He	31599	2.36	31735	99.57	70	120	
Ge	72	NoGas	890274	0.17	850290	104.70	70	120	
In	115	H2	3242705	5.44	3158297	102.67	70	120	
In	115	He	234697	2.02	233876	100.35	70	120	
In	115	NoGas	5833601	0.81	5452775	106.98	70	120	
Tb	159	H2	6388171	4.83	6131794	104.18	70	120	
Tb	159	He	1298254	1.91	1276461	101.71	70	120	
Tb	159	NoGas	7705139	0.23	7146294	107.82	70	120	
Ho	165	H2	6061939	4.92	5782470	104.83	70	120	
Ho	165	He	1279190	1.74	1264936	101.13	70	120	
Ho	165	NoGas	7215440	0.98	6686360	107.91	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin
Project: N19571 AZ GMP
Sample ID: N019571-002/MW-54-085-Q216
Sample Collection Date: 04/29/16

ARF: 79717
APPL ID: AZ34900

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	ARSENIC (AS) (DISSOLVED)	4.7 J	5.0	0.31	ug/L	1	05/19/16	05/19/16
6020A/3015^	CHROMIUM (CR) (DISSOLV	0.60 J	10.0	0.45	ug/L	1	05/19/16	05/19/16
6020A/3015^	MANGANESE (MN) (DISSOL	777	3.5	0.30	ug/L	1	05/19/16	05/19/16

J = Estimated value.

Printed: 05/22/16 10:10:35 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ34900W02 DF10
Data File Name	073SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:38:38-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.032	-0.356	-21.08	113	48.60	10000	
B	11	45	NoGas	100.728	1119.202	1.37	573602	0.43	10000	
Na	23	45	He	166780.337	1853114.859	1.39	56849193	0.83	1000000	
Mg	24	45	He	7597.962	84421.798	1.54	1137544	0.94	1000000	
Al	27	45	He	1.194	13.263	125.83	256	17.71	1000000	
K	39	45	He	1125.096	12501.065	1.54	89216	0.99	500000	
Ca	40	45	H2	15096.355	167737.276	6.90	41903946	2.04	500000	
Ti	47	45	He	-0.001	-0.010	-4551.76	2	86.60	10000	
V	51	45	He	0.062	0.693	26.62	206	21.41	10000	
Cr	52	45	He	0.054	0.604	20.49	654	5.23	10000	
Mn	55	45	He	69.929	776.989	1.57	76148	0.83	50000	
Fe	56	45	He	10.020	111.335	2.83	30798	1.60	1000000	
Co	59	45	He	0.010	0.115	18.23	189	6.20	10000	
Ni	60	45	He	0.235	2.612	10.65	654	10.20	10000	
Cu	63	45	He	-0.023	-0.255	-70.29	1467	5.63	10000	
Zn	66	115	He	1.052	11.687	14.64	1584	7.78	50000	
As	75	115	He	0.420	4.663	7.76	172	8.60	2000	
Se	78	72	H2	0.041	0.451	6.08	23	0.99	10000	
Se	78	115	He	-0.188	-2.094	-25.62	0	173.21	10000	
Sr	88	115	NoGas	352.882	3920.914	1.69	26564800	1.85	50000	
Mo	95	115	NoGas	3.822	42.462	3.57	58157	3.69	10000	
Ag	107	115	NoGas	0.001	0.011	201.01	170	47.06	5000	
Cd	111	115	He	0.006	0.068	58.06	13	24.12	10000	
Sn	118	115	He	0.060	0.663	117.69	259	35.60	10000	
Sn	118	115	NoGas	0.029	0.327	33.20	3628	6.12	10000	
Sb	121	115	NoGas	0.564	6.263	3.49	21715	2.85	10000	
Ba	137	165	NoGas	4.711	52.349	2.17	51847	2.16	50000	
Tl	205	165	NoGas	0.006	0.070	24.75	657	15.25	5000	
Pb	208	165	NoGas	-0.038	-0.422	-2.76	3770	3.13	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	217111	0.64	236257	91.90	70	120	
Sc	45	H2	477291	4.90	485596	98.29	70	120	
Sc	45	He	32540	1.65	32391	100.46	70	120	
Sc	45	NoGas	3648140	1.36	3469736	105.14	70	120	
Ge	72	H2	135459	4.74	144823	93.53	70	120	
Ge	72	He	31408	3.80	31735	98.97	70	120	
Ge	72	NoGas	872844	0.95	850290	102.65	70	120	
In	115	H2	3057226	3.27	3158297	96.80	70	120	
In	115	He	224917	1.70	233876	96.17	70	120	
In	115	NoGas	5608353	0.29	5452775	102.85	70	120	
Tb	159	H2	6110162	5.37	6131794	99.65	70	120	
Tb	159	He	1256121	1.40	1276461	98.41	70	120	
Tb	159	NoGas	7493009	0.55	7146294	104.85	70	120	
Ho	165	H2	5758427	4.55	5782470	99.58	70	120	
Ho	165	He	1244087	2.01	1264936	98.35	70	120	
Ho	165	NoGas	7093774	0.86	6686360	106.09	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin
Project: N19571 AZ GMP
Sample ID: N019571-003/MW-54-140-EB-Q216
Sample Collection Date: 04/29/16

ARF: 79717
APPL ID: AZ34901

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	Not detected	10.0	0.45	ug/L	1	05/19/16	05/19/16

Printed: 05/22/16 10:10:35 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ34901W02 DF10
Data File Name	074SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:42:06-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.036	-0.402	-6.25	80	21.65	10000	
B	11	45	NoGas	1.619	17.985	6.33	62129	1.16	10000	
Na	23	45	He	261.583	2906.475	19.65	106429	12.65	1000000	
Mg	24	45	He	15.673	174.142	18.13	2456	12.18	1000000	
Al	27	45	He	1.123	12.477	107.24	251	11.05	1000000	
K	39	45	He	11.776	130.843	37.90	7120	2.52	500000	
Ca	40	45	H2	47.050	522.775	11.36	191356	4.28	500000	
Ti	47	45	He	0.023	0.257	533.32	3	173.21	10000	
V	51	45	He	0.002	0.023	478.43	52	51.19	10000	
Cr	52	45	He	0.023	0.254	97.15	537	11.85	10000	
Mn	55	45	He	0.128	1.421	45.46	237	20.31	50000	
Fe	56	45	He	0.498	5.539	14.17	4939	6.60	1000000	
Co	59	45	He	-0.007	-0.077	-7.94	60	0.00	10000	
Ni	60	45	He	0.020	0.225	109.29	168	32.91	10000	
Cu	63	45	He	-0.002	-0.018	-94.18	1600	6.36	10000	
Zn	66	115	He	-0.282	-3.130	-47.51	696	14.25	50000	
As	75	115	He	0.022	0.245	56.96	14	31.13	2000	
Se	78	72	H2	0.016	0.176	40.21	13	22.42	10000	
Se	78	115	He	-0.100	-1.108	-137.20	1	114.56	10000	
Sr	88	115	NoGas	0.295	3.275	7.31	27889	5.55	50000	
Mo	95	115	NoGas	0.022	0.249	34.36	563	21.47	10000	
Ag	107	115	NoGas	0.000	-0.002	-85.60	127	4.56	5000	
Cd	111	115	He	0.008	0.091	183.07	15	96.74	10000	
Sn	118	115	He	0.016	0.180	73.63	206	0.94	10000	
Sn	118	115	NoGas	0.029	0.322	15.81	3737	2.64	10000	
Sb	121	115	NoGas	0.243	2.705	3.66	10994	3.14	10000	
Ba	137	165	NoGas	-0.005	-0.056	-15.41	383	1.51	50000	
Tl	205	165	NoGas	0.003	0.039	81.24	490	35.35	5000	
Pb	208	165	NoGas	-0.044	-0.489	-3.28	3290	4.22	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	241625	0.37	236257	102.27	70	120	
Sc	45	H2	494160	3.80	485596	101.76	70	120	
Sc	45	He	32396	6.67	32391	100.02	70	120	
Sc	45	NoGas	3671888	1.47	3469736	105.83	70	120	
Ge	72	H2	141395	3.90	144823	97.63	70	120	
Ge	72	He	30959	7.05	31735	97.56	70	120	
Ge	72	NoGas	884065	0.84	850290	103.97	70	120	
In	115	H2	3248299	2.38	3158297	102.85	70	120	
In	115	He	230474	7.79	233876	98.55	70	120	
In	115	NoGas	5793568	0.73	5452775	106.25	70	120	
Tb	159	H2	6373904	3.67	6131794	103.95	70	120	
Tb	159	He	1266733	7.63	1276461	99.24	70	120	
Tb	159	NoGas	7616943	0.82	7146294	106.59	70	120	
Ho	165	H2	5988276	2.64	5782470	103.56	70	120	
Ho	165	He	1258269	7.56	1264936	99.47	70	120	
Ho	165	NoGas	7137961	0.74	6686360	106.75	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19571 AZ GMP
Sample ID: N019571-004/MW-54-140-Q216
Sample Collection Date: 04/29/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79717
APPL ID: AZ34902

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	ARSENIC (AS) (DISSOLVED)	3.0 J	5.0	0.31	ug/L	1	05/19/16	05/19/16
6020A/3015^	CHROMIUM (CR) (DISSOLV	0.63 J	10.0	0.45	ug/L	1	05/19/16	05/19/16
6020A/3015^	MANGANESE (MN) (DISSOL	123	3.5	0.30	ug/L	1	05/19/16	05/19/16

J = Estimated value.

Printed: 05/22/16 10:10:35 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ34902W02 DF10
Data File Name	075SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:45:32-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.035	-0.384	-4.41	93	12.37	10000	
B	11	45	NoGas	135.250	1502.777	1.11	758167	1.21	10000	
Na	23	45	He	218864.922	2431832.470	1.10	76596028	1.47	1000000	
Mg	24	45	He	1453.487	16149.857	2.67	223498	0.24	1000000	
Al	27	45	He	1.556	17.285	141.59	274	25.77	1000000	
K	39	45	He	1646.290	18292.109	2.17	131032	1.29	500000	
Ca	40	45	H2	14187.117	157634.634	6.75	39278930	2.24	500000	
Ti	47	45	He	0.022	0.242	326.16	3	100.05	10000	
V	51	45	He	0.139	1.540	7.28	410	4.95	10000	
Cr	52	45	He	0.057	0.630	4.29	681	2.95	10000	
Mn	55	45	He	11.092	123.247	1.81	12489	1.02	50000	
Fe	56	45	He	0.260	2.886	29.26	4428	3.08	1000000	
Co	59	45	He	-0.001	-0.007	-240.56	110	13.89	10000	
Ni	60	45	He	0.093	1.028	25.46	339	13.78	10000	
Cu	63	45	He	0.011	0.120	207.07	1732	6.28	10000	
Zn	66	115	He	1.316	14.625	8.01	1765	4.87	50000	
As	75	115	He	0.266	2.955	23.97	111	23.30	2000	
Se	78	72	H2	0.037	0.417	9.57	22	7.39	10000	
Se	78	115	He	0.121	1.349	249.62	4	90.14	10000	
Sr	88	115	NoGas	287.888	3198.756	1.32	21490541	0.98	50000	
Mo	95	115	NoGas	3.956	43.954	1.74	59685	1.55	10000	
Ag	107	115	NoGas	0.000	0.001	343.96	133	11.46	5000	
Cd	111	115	He	0.007	0.075	90.28	13	43.30	10000	
Sn	118	115	He	0.036	0.397	9.17	228	3.05	10000	
Sn	118	115	NoGas	0.026	0.288	14.67	3520	2.14	10000	
Sb	121	115	NoGas	0.156	1.729	1.46	7539	1.47	10000	
Ba	137	165	NoGas	4.331	48.123	2.26	47283	2.32	50000	
Tl	205	165	NoGas	0.039	0.438	6.50	2637	6.13	5000	
Pb	208	165	NoGas	-0.035	-0.388	-7.22	3990	4.59	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	206201	0.97	236257	87.28	70	120	
Sc	45	H2	475918	4.51	485596	98.01	70	120	
Sc	45	He	33414	2.58	32391	103.16	70	120	
Sc	45	NoGas	3678224	0.98	3469736	106.01	70	120	
Ge	72	H2	134955	4.07	144823	93.19	70	120	
Ge	72	He	31433	1.96	31735	99.05	70	120	
Ge	72	NoGas	866389	0.97	850290	101.89	70	120	
In	115	H2	3016478	4.96	3158297	95.51	70	120	
In	115	He	225146	1.25	233876	96.27	70	120	
In	115	NoGas	5561417	0.45	5452775	101.99	70	120	
Tb	159	H2	5969871	4.25	6131794	97.36	70	120	
Tb	159	He	1240156	1.56	1276461	97.16	70	120	
Tb	159	NoGas	7474090	0.97	7146294	104.59	70	120	
Ho	165	H2	5668205	4.32	5782470	98.02	70	120	
Ho	165	He	1236643	1.42	1264936	97.76	70	120	
Ho	165	NoGas	7032264	0.90	6686360	105.17	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19571 AZ GMP
Sample ID: N019571-005/MW-54-195-EB-Q216
Sample Collection Date: 04/29/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79717
APPL ID: AZ34903

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	Not detected	10.0	0.45	ug/L	1	05/19/16	05/19/16

Printed: 05/22/16 10:10:35 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ34903W02 DF10
Data File Name	076SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:48:55-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.039	-0.431	-9.48	60	50.00	10000	
B	11	45	NoGas	2.453	27.250	8.28	67107	1.38	10000	
Na	23	45	He	363.822	4042.467	14.55	143513	13.00	1000000	
Mg	24	45	He	3.128	34.754	29.45	610	22.77	1000000	
Al	27	45	He	1.489	16.540	62.47	268	10.73	1000000	
K	39	45	He	9.993	111.035	49.42	7090	5.19	500000	
Ca	40	45	H2	49.631	551.457	12.71	198721	5.34	500000	
Ti	47	45	He	0.119	1.319	243.25	8	173.21	10000	
V	51	45	He	0.001	0.009	487.93	49	19.69	10000	
Cr	52	45	He	0.009	0.097	158.94	494	9.82	10000	
Mn	55	45	He	0.054	0.597	10.16	161	4.31	50000	
Fe	56	45	He	1.238	13.750	4.18	7024	1.50	1000000	
Co	59	45	He	-0.008	-0.093	-21.46	50	26.66	10000	
Ni	60	45	He	-0.003	-0.034	-583.53	116	36.30	10000	
Cu	63	45	He	0.032	0.352	31.65	1841	4.34	10000	
Zn	66	115	He	3.700	41.110	8.17	3552	3.70	50000	
As	75	115	He	0.017	0.192	39.85	13	24.12	2000	
Se	78	72	H2	0.001	0.010	619.49	5	44.71	10000	
Se	78	115	He	-0.029	-0.323	-686.61	2	107.85	10000	
Sr	88	115	NoGas	0.271	3.009	2.50	26614	2.45	50000	
Mo	95	115	NoGas	0.014	0.152	22.30	437	11.53	10000	
Ag	107	115	NoGas	0.001	0.010	159.15	173	32.81	5000	
Cd	111	115	He	0.009	0.098	41.83	16	21.65	10000	
Sn	118	115	He	0.015	0.170	165.60	211	18.70	10000	
Sn	118	115	NoGas	0.016	0.172	49.69	3503	5.08	10000	
Sb	121	115	NoGas	0.084	0.933	6.23	5411	3.78	10000	
Ba	137	165	NoGas	0.057	0.636	37.61	1100	21.44	50000	
Tl	205	165	NoGas	0.000	0.005	111.54	313	10.26	5000	
Pb	208	165	NoGas	-0.045	-0.505	-8.90	3270	10.29	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	246833	0.95	236257	104.48	70	120	
Sc	45	H2	494187	3.83	485596	101.77	70	120	
Sc	45	He	32798	0.87	32391	101.26	70	120	
Sc	45	NoGas	3707289	0.26	3469736	106.85	70	120	
Ge	72	H2	142602	3.80	144823	98.47	70	120	
Ge	72	He	31934	2.29	31735	100.63	70	120	
Ge	72	NoGas	898842	1.00	850290	105.71	70	120	
In	115	H2	3234007	3.73	3158297	102.40	70	120	
In	115	He	236733	2.55	233876	101.22	70	120	
In	115	NoGas	5921501	0.43	5452775	108.60	70	120	
Tb	159	H2	6341378	3.88	6131794	103.42	70	120	
Tb	159	He	1294426	1.64	1276461	101.41	70	120	
Tb	159	NoGas	7733008	0.76	7146294	108.21	70	120	
Ho	165	H2	5957937	5.03	5782470	103.03	70	120	
Ho	165	He	1275183	1.39	1264936	100.81	70	120	
Ho	165	NoGas	7365565	0.75	6686360	110.16	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19571 AZ GMP
Sample ID: N019571-006/MW-54-195-Q216
Sample Collection Date: 04/29/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79717
APPL ID: AZ34904

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	ARSENIC (AS) (DISSOLVED)	0.87 J	5.0	0.31	ug/L	1	05/19/16	05/19/16
6020A/3015^	CHROMIUM (CR) (DISSOLV	Not detected	10.0	0.45	ug/L	1	05/19/16	05/19/16
6020A/3015^	MANGANESE (MN) (DISSOL	185	3.5	0.30	ug/L	1	05/19/16	05/19/16

J = Estimated value.

Printed: 05/22/16 10:10:35 AM

APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ34904W02 DF10
Data File Name	077SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:52:23-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.039	-0.430	-6.76	60	33.33	10000	
B	11	45	NoGas	192.016	2133.508	7.25	1054232	4.32	10000	
Na	23	45	He	337394.163	3748824.035	1.94	112600898	0.76	1000000	
Mg	24	45	He	377.277	4191.969	2.40	55442	1.80	1000000	
Al	27	45	He	1.503	16.697	105.10	261	20.68	1000000	
K	39	45	He	2551.268	28347.427	2.27	190297	1.52	500000	
Ca	40	45	H2	10450.522	116116.907	5.16	29420913	1.08	500000	
Ti	47	45	He	0.073	0.812	55.60	6	34.70	10000	
V	51	45	He	-0.004	-0.049	-102.90	34	31.11	10000	
Cr	52	45	He	0.019	0.206	78.08	516	11.39	10000	
Mn	55	45	He	16.633	184.817	1.05	17818	2.43	50000	
Fe	56	45	He	6.139	68.206	3.61	19846	2.22	1000000	
Co	59	45	He	-0.006	-0.070	-78.97	64	56.74	10000	
Ni	60	45	He	0.035	0.385	24.52	196	8.06	10000	
Cu	63	45	He	-0.013	-0.139	-151.43	1503	7.33	10000	
Zn	66	115	He	-0.182	-2.020	-1.74	721	0.71	50000	
As	75	115	He	0.078	0.871	9.25	35	7.56	2000	
Se	78	72	H2	0.013	0.141	77.33	11	43.46	10000	
Se	78	115	He	-0.099	-1.103	-204.46	1	173.21	10000	
Sr	88	115	NoGas	255.405	2837.836	2.48	19024208	0.82	50000	
Mo	95	115	NoGas	8.696	96.623	3.43	130655	1.70	10000	
Ag	107	115	NoGas	0.003	0.031	38.34	237	17.08	5000	
Cd	111	115	He	0.003	0.031	276.49	9	75.25	10000	
Sn	118	115	He	0.047	0.525	23.59	234	7.01	10000	
Sn	118	115	NoGas	0.014	0.154	44.56	3245	3.10	10000	
Sb	121	115	NoGas	0.068	0.753	14.44	4514	5.78	10000	
Ba	137	165	NoGas	2.879	31.985	6.25	31437	3.38	50000	
Tl	205	165	NoGas	-0.001	-0.007	-80.34	237	13.58	5000	
Pb	208	165	NoGas	-0.051	-0.561	-4.47	2697	7.49	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	204943	1.77	236257	86.75	70	120	
Sc	45	H2	483388	4.05	485596	99.55	70	120	
Sc	45	He	31867	1.61	32391	98.38	70	120	
Sc	45	NoGas	3684235	2.72	3469736	106.18	70	120	
Ge	72	H2	135670	4.19	144823	93.68	70	120	
Ge	72	He	30169	0.20	31735	95.07	70	120	
Ge	72	NoGas	868861	2.13	850290	102.18	70	120	
In	115	H2	2995561	4.84	3158297	94.85	70	120	
In	115	He	217024	0.87	233876	92.79	70	120	
In	115	NoGas	5550550	1.76	5452775	101.79	70	120	
Tb	159	H2	6021919	4.69	6131794	98.21	70	120	
Tb	159	He	1197925	1.06	1276461	93.85	70	120	
Tb	159	NoGas	7442354	2.45	7146294	104.14	70	120	
Ho	165	H2	5665996	2.88	5782470	97.99	70	120	
Ho	165	He	1195552	1.31	1264936	94.51	70	120	
Ho	165	NoGas	7010440	3.02	6686360	104.85	70	120	

METALS
Calibration Data

APPL, INC.

A.P.P.L. INC.

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No: 79717 SDG: 79717

Initial Calibration Source: CPI

Continuing Calibration Source: Environmental Express

Analysis Date: 05/19/16 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 15:50	%R(1)	True CCV1	Found 19:18	%R(1)	True CCV1	Found 20:26	%R(1)	
Arsenic (As)	100	97.4711	97.5	50	46.8667	93.7	50	48.2179	96.4	P
Chromium (Cr)	100	104.185	104	50	48.2626	96.5	50	48.8641	97.7	P
Manganese (Mn)	100	105.174	105	50	48.2855	96.6	50	49.2643	98.5	P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No.: 79717 SDG: 79717

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 05/19/16

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
	16:32		19:25		20:33						
Arsenic (As)	5.00	U	5.00	U	5.00	U					P
Chromium (Cr)	10.00	U	10.00	U	10.00	U					P
Manganese (Mn)	3.50	U	3.50	U	3.50	U					P

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories
ARF No.: 79717 SDG: 79717
ICP ID Number: Megatron ICS Source: Environmental Express

Analysis Date: 05/19/16 Concentration Units: ug/L

Analyte	True		Initial Found		
	Sol A	Sol AB	Sol A 16:36	Sol AB 16:39	%R(1)
Arsenic (As)		50	0.198435	49.358284	98.7
Chromium (Cr)		50	0.451793	47.102517	94.2
Manganese (Mn)		50	1.916912	50.06511	100

(1) Control Limits: Metals 80-120

A.P.P.L. INC.

5B

POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.

N019571-006/MW-54-195-Q216

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No.: 79717 SDG: 79717

Analysis Date: 05/19/16 Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic (As)	75-125	1252.378343		0.870644		1250.000	100		
Chromium (Cr)	75-125	1260.789236		0.205666		1250.000	101		

Comments:

05/19/16 19:52 AZ34904W02 DF10

05/19/16 20:02 AZ34904W02-A DF10

Sample Report

Sample Table

Sample Name	AZ34904W02-A DF10
Data File Name	080SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:02:36-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	20.721	230.232	2.52	169392	1.92	10000	
B	11	45	NoGas	288.998	3211.093	0.85	1566524	0.53	10000	
Na	23	45	He	356307.418	3958971.310	2.22	123255333	0.47	1000000	
Mg	24	45	He	12159.462	135105.137	3.47	1847346	0.81	1000000	
Al	27	45	He	925.367	10281.858	2.40	31269	1.82	1000000	
K	39	45	He	4858.119	53979.096	2.68	369783	0.04	500000	
Ca	40	45	H2	24290.851	269898.345	6.94	67824575	2.61	500000	
Ti	47	45	He	116.706	1296.728	6.84	5529	4.30	10000	
V	51	45	He	119.199	1324.435	3.43	308082	0.78	10000	
Cr	52	45	He	113.471	1260.789	2.95	414343	0.37	10000	
Mn	55	45	He	130.257	1447.305	2.98	143869	0.85	50000	
Fe	56	45	He	444.824	4942.485	2.96	1228721	0.44	1000000	
Co	59	45	He	112.064	1245.160	2.98	844868	0.64	10000	
Ni	60	45	He	108.951	1210.569	2.61	250596	0.19	10000	
Cu	63	45	He	109.195	1213.283	2.95	729568	0.81	10000	
Zn	66	115	He	222.435	2471.504	0.92	150397	0.11	50000	
As	75	115	He	112.714	1252.378	1.52	44444	0.61	2000	
Se	78	72	H2	119.003	1322.252	7.35	54371	2.55	10000	
Se	78	115	He	112.656	1251.732	2.31	1328	1.87	10000	
Sr	88	115	NoGas	384.778	4275.313	2.24	28265112	1.73	50000	
Mo	95	115	NoGas	127.468	1416.316	2.12	1886345	1.45	10000	
Ag	107	115	NoGas	42.905	476.718	2.32	1659378	1.67	5000	
Cd	111	115	He	22.061	245.118	1.99	20291	1.00	10000	
Sn	118	115	He	122.154	1357.267	1.32	161891	0.34	10000	
Sn	118	115	NoGas	119.004	1322.272	2.54	2594905	1.87	10000	
Sb	121	115	NoGas	92.638	1029.307	1.86	3128363	1.22	10000	
Ba	137	165	NoGas	113.634	1262.597	0.90	1216285	1.07	50000	
Tl	205	165	NoGas	105.519	1172.432	0.48	6263435	1.35	5000	
Pb	208	165	NoGas	106.114	1179.047	0.68	8634506	0.76	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	194071	1.17	236257	82.14	70	120	
Sc	45	H2	480219	4.28	485596	98.89	70	120	
Sc	45	He	33037	2.69	32391	102.00	70	120	
Sc	45	NoGas	3696346	0.72	3469736	106.53	70	120	
Ge	72	H2	135721	4.77	144823	93.72	70	120	
Ge	72	He	31208	2.81	31735	98.34	70	120	
Ge	72	NoGas	852352	0.42	850290	100.24	70	120	
In	115	H2	2955217	3.39	3158297	93.57	70	120	
In	115	He	223157	1.01	233876	95.42	70	120	
In	115	NoGas	5473298	0.72	5452775	100.38	70	120	
Tb	159	H2	5857564	4.63	6131794	95.53	70	120	
Tb	159	He	1241327	1.04	1276461	97.25	70	120	
Tb	159	NoGas	7314589	1.66	7146294	102.35	70	120	
Ho	165	H2	5550282	4.01	5782470	95.98	70	120	
Ho	165	He	1233762	1.73	1264936	97.54	70	120	
Ho	165	NoGas	6955780	0.92	6686360	104.03	70	120	

A.P.P.L. INC.

9

ICP SERIAL DILUTION

CLIENT SAMPLE NO.

N019571-006/MW-54-195-Q216

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No.: 79717 SDG: 79717

Matrix: water

Analysis Date: 05/19/16 Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	%D	Q	M
Manganese (Mn)	184.816594		167.106414		9.58		

Comments:

05/19/16 19:52 AZ34904W02 DF10

05/19/16 20:09 AZ34904W02 DF50 DT

Sample Report

Sample Table

Sample Name	AZ34904W02 DF50 DT
Data File Name	082SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:09:15-07:00
Sample Type	Sample
Dilution	55.55555556
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.036	-2.016	-12.27	80	45.07	10000	
B	11	45	NoGas	40.859	2269.970	2.44	267600	1.58	10000	
Na	23	45	He	64492.337	3582907.585	0.85	22539227	0.63	1000000	
Mg	24	45	He	72.541	4030.073	0.15	11269	0.44	1000000	
Al	27	45	He	1.848	102.689	70.89	284	15.07	1000000	
K	39	45	He	487.170	27064.974	2.12	43246	1.46	500000	
Ca	40	45	H2	2065.621	114756.710	7.03	5748496	2.26	500000	
Ti	47	45	He	0.022	1.197	321.76	3	100.05	10000	
V	51	45	He	0.014	0.761	71.73	83	30.20	10000	
Cr	52	45	He	0.031	1.701	23.66	583	4.00	10000	
Mn	55	45	He	3.008	167.106	3.09	3456	2.79	50000	
Fe	56	45	He	1.042	57.916	4.79	6599	2.68	1000000	
Co	59	45	He	-0.002	-0.115	-27.81	99	3.89	10000	
Ni	60	45	He	0.015	0.849	144.84	160	32.54	10000	
Cu	63	45	He	0.010	0.530	186.62	1722	6.80	10000	
Zn	66	115	He	-0.139	-7.700	-50.54	797	6.52	50000	
As	75	115	He	0.063	3.505	9.69	31	8.53	2000	
Se	78	72	H2	0.030	1.666	29.79	19	25.57	10000	
Se	78	115	He	-0.106	-5.916	-89.36	1	86.60	10000	
Sr	88	115	NoGas	49.544	2752.447	0.80	3835134	0.25	50000	
Mo	95	115	NoGas	1.662	92.347	2.49	26100	2.10	10000	
Ag	107	115	NoGas	0.005	0.282	30.92	340	18.37	5000	
Cd	111	115	He	-0.001	-0.072	-707.20	6	145.30	10000	
Sn	118	115	He	0.062	3.470	39.47	270	12.89	10000	
Sn	118	115	NoGas	0.058	3.213	20.24	4378	6.46	10000	
Sb	121	115	NoGas	1.405	78.041	0.76	52183	1.26	10000	
Ba	137	165	NoGas	0.557	30.919	7.06	6622	6.43	50000	
Tl	205	165	NoGas	0.008	0.445	20.96	773	13.27	5000	
Pb	208	165	NoGas	-0.044	-2.444	-3.46	3327	2.78	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	225627	1.52	236257	95.50	70	120	
Sc	45	H2	474594	4.66	485596	97.73	70	120	
Sc	45	He	33342	0.59	32391	102.94	70	120	
Sc	45	NoGas	3692167	0.37	3469736	106.41	70	120	
Ge	72	H2	135928	4.91	144823	93.86	70	120	
Ge	72	He	31958	0.96	31735	100.71	70	120	
Ge	72	NoGas	887566	0.52	850290	104.38	70	120	
In	115	H2	3092762	4.41	3158297	97.92	70	120	
In	115	He	230694	0.60	233876	98.64	70	120	
In	115	NoGas	5760823	0.54	5452775	105.65	70	120	
Tb	159	H2	6187543	4.56	6131794	100.91	70	120	
Tb	159	He	1268821	0.28	1276461	99.40	70	120	
Tb	159	NoGas	7638440	0.98	7146294	106.89	70	120	
Ho	165	H2	5809659	5.56	5782470	100.47	70	120	
Ho	165	He	1262618	0.43	1264936	99.82	70	120	
Ho	165	NoGas	7217549	1.12	6686360	107.94	70	120	

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories
ARF No: 79717 SDG: 79717
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 05/20/16 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 9:15	%R(1)	True CCV1	Found 11:34	%R(1)	True	Found	%R(1)	
Arsenic (As)	100	96.6856	96.7	50	49.0949	98.2				P
Chromium (Cr)	100	106.219	106	50	51.2559	103				P
Manganese (Mn)	100	107.349	107	50	52.5290	105				P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No.: 79717 SDG: 79717

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 05/20/16

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	1	C	2	C	3	C		C	
	10:04		11:41						11:06		
Arsenic (As)	5.00	U	5.00	U					5.00	U	P
Chromium (Cr)	10.00	U	10.00	U					10.00	U	P
Manganese (Mn)	3.50	U	3.50	U					3.50	U	P

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories
ARF No.: 79717 SDG: 79717
ICP ID Number: Megatron ICS Source: Environmental Express

Analysis Date: 05/20/16 Concentration Units: ug/L

Analyte	True		Initial Found		
	Sol A	Sol AB	Sol A 10:32	Sol AB 10:26	%R(1)
Arsenic (As)		50	0.222937	51.752687	104
Chromium (Cr)		50	0.624589	53.963584	108
Manganese (Mn)		50	2.244799	56.816453	114

(1) Control Limits: Metals 80-120

Calibration Blank Report

Sample Table

Sample Name	Calibration Blank 05/19/16
Data File Name	005CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:33:26-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD
Be	9	45	NoGas	353	18.19
B	11	45	NoGas	50762	1.97
Na	23	45	He	18268	2.13
Mg	24	45	He	137	24.02
Al	27	45	He	216	9.45
K	39	45	He	6268	2.21
Ca	40	45	H2	55390	2.33
Ca (no)	44	45	He	123	2.70
Ti	47	45	He	2	86.60
V	51	45	He	47	65.47
Cr	52	45	He	457	9.54
Mn	55	45	He	101	18.16
Fe	56	45	He	3593	1.48
Co	59	45	He	111	35.15
Ni	60	45	He	121	29.43
Cu	63	45	He	1610	5.93
Zn	66	115	He	904	8.24
As	75	115	He	5	47.19
Se	78	72	H2	5	40.70
Se	78	115	He	3	43.30
Sr	88	115	NoGas	4688	2.49
Mo	95	115	NoGas	200	13.23
Ag	107	115	NoGas	127	39.74
Cd	111	115	He	7	31.49
Sn	118	115	He	187	19.32
Sn	118	115	NoGas	2888	4.97
Sb	121	115	NoGas	2160	10.31
Ba	137	165	NoGas	410	34.58
Tl	205	165	NoGas	260	37.88
[Pb]	206	165	NoGas	1627	3.76
[Pb]	207	165	NoGas	1420	3.07
Pb	208	165	NoGas	6521	1.62

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	NoGas	236257	0.38
Sc	45	H2	485596	4.25
Sc	45	He	32391	1.76
Sc	45	NoGas	3469736	0.68
Ge	72	H2	144823	4.83
Ge	72	He	31735	2.77
Ge	72	NoGas	850290	0.09
In	115	H2	3158297	4.15
In	115	He	233876	1.28
In	115	NoGas	5452775	0.59
Tb	159	H2	6131794	5.05
Tb	159	He	1276461	1.57
Tb	159	NoGas	7146294	1.12
Ho	165	H2	5782470	4.94
Ho	165	He	1264936	1.25
Ho	165	NoGas	6686360	0.64

Calibration Standard Report

Sample Table

Sample Name	Standard 1 05/19/16
Data File Name	006CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:36:55-07:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	1220	13.54	1.0000
B	11	45	NoGas	51391	2.32	-1.0000
Na	23	45	He	19729	0.75	1.0000
Mg	24	45	He	957	9.96	1.0000
Al	27	45	He	311	3.44	1.0000
K	39	45	He	6876	4.96	1.0000
Ca	40	45	H2	82546	1.02	1.0000
Ca (no)	44	45	He	139	7.72	
Tl	47	45	He	13	43.29	1.0000
V	51	45	He	323	14.29	1.0000
Cr	52	45	He	850	1.18	1.0000
Mn	55	45	He	241	11.09	1.0000
Fe	56	45	He	10135	3.79	1.0000
Co	59	45	He	934	9.85	1.0000
Ni	60	45	He	438	4.33	1.0000
Cu	63	45	He	2814	2.99	1.0000
Zn	66	115	He	994	8.38	1.0000
As	75	115	He	42	29.83	1.0000
Se	78	72	H2	46	15.22	1.0000
Se	78	115	He	3	105.36	1.0000
Sr	88	115	NoGas	12051	0.29	1.0000
Mo	95	115	NoGas	1507	14.99	1.0000
Ag	107	115	NoGas	2097	7.18	1.0000
Cd	111	115	He	118	15.53	1.0000
Sn	118	115	He	319	10.73	1.0000
Sn	118	115	NoGas	4675	5.98	1.0000
Sb	121	115	NoGas	5314	4.63	1.0000
Ba	137	165	NoGas	1770	9.40	1.0000
Tl	205	165	NoGas	6428	0.70	1.0000
[Pb]	206	165	NoGas	3614	3.06	
[Pb]	207	165	NoGas	3324	5.98	
Pb	208	165	NoGas	14557	1.79	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	238215	2.42	236257	100.83	70	120	
Sc	45	H2	485801	3.07	485596	100.04	70	120	
Sc	45	He	32220	1.78	32391	99.47	70	120	
Sc	45	NoGas	3515807	1.04	3469736	101.33	70	120	
Ge	72	H2	143058	4.46	144823	98.78	70	120	
Ge	72	He	31271	1.91	31735	98.54	70	120	
Ge	72	NoGas	844417	0.70	850290	99.31	70	120	
In	115	H2	3187705	4.73	3158297	100.93	70	120	
In	115	He	234251	1.13	233876	100.16	70	120	
In	115	NoGas	5492362	0.27	5452775	100.73	70	120	
Tb	159	H2	6174668	4.54	6131794	100.70	70	120	
Tb	159	He	1287728	1.09	1276461	100.88	70	120	
Tb	159	NoGas	7219231	1.77	7146294	101.02	70	120	
Ho	165	H2	5811323	5.03	5782470	100.50	70	120	
Ho	165	He	1271704	0.65	1264936	100.54	70	120	
Ho	165	NoGas	6756987	1.43	6686360	101.06	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 2 05/19/16
Data File Name	007CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:40:20-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	8012	2.06	1.0000
B	11	45	NoGas	54823	1.51	0.9951
Na	23	45	He	28583	2.52	0.9989
Mg	24	45	He	7615	0.65	1.0000
Al	27	45	He	934	2.91	0.9995
K	39	45	He	7854	2.98	0.9544
Ca	40	45	H2	202358	1.46	0.9968
Ca (no)	44	45	He	420	19.31	
Ti	47	45	He	80	41.05	0.9991
V	51	45	He	2445	1.73	0.9999
Cr	52	45	He	4113	3.53	1.0000
Mn	55	45	He	1273	5.26	0.9998
Fe	56	45	He	56708	0.82	0.9998
Co	59	45	He	7478	0.78	0.9999
Ni	60	45	He	2467	1.52	0.9994
Cu	63	45	He	8791	4.96	0.9978
Zn	66	115	He	1653	3.24	0.9999
As	75	115	He	392	3.26	1.0000
Se	78	72	H2	471	1.49	0.9999
Se	78	115	He	15	42.43	0.9990
Sr	88	115	NoGas	75390	0.71	1.0000
Mo	95	115	NoGas	14396	4.94	1.0000
Ag	107	115	NoGas	18627	2.04	1.0000
Cd	111	115	He	977	4.80	0.9999
Sn	118	115	He	1519	4.63	1.0000
Sn	118	115	NoGas	23029	1.62	0.9999
Sb	121	115	NoGas	34843	2.58	1.0000
Ba	137	165	NoGas	11521	4.04	0.9998
Tl	205	165	NoGas	54579	2.18	0.9999
[Pb]	206	165	NoGas	19703	1.36	
[Pb]	207	165	NoGas	17507	2.19	
Pb	208	165	NoGas	80352	0.17	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	234060	0.90	236257	99.07	70	120	
Sc	45	H2	479835	4.56	485596	98.81	70	120	
Sc	45	He	32030	0.86	32391	98.89	70	120	
Sc	45	NoGas	3442503	2.24	3469736	99.22	70	120	
Ge	72	H2	141963	4.18	144823	98.02	70	120	
Ge	72	He	31188	0.84	31735	98.28	70	120	
Ge	72	NoGas	836242	1.37	850290	98.35	70	120	
In	115	H2	3135071	4.57	3158297	99.26	70	120	
In	115	He	230804	1.92	233876	98.69	70	120	
In	115	NoGas	5461311	0.53	5452775	100.16	70	120	
Tb	159	H2	6106488	4.62	6131794	99.59	70	120	
Tb	159	He	1277212	1.18	1276461	100.06	70	120	
Tb	159	NoGas	7118414	1.15	7146294	99.61	70	120	
Ho	165	H2	5731155	4.89	5782470	99.11	70	120	
Ho	165	He	1257782	1.31	1264936	99.43	70	120	
Ho	165	NoGas	6693189	1.34	6686360	100.10	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 3 05/19/16
Data File Name	008CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:43:45-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	383302	0.67	1.0000
B	11	45	NoGas	296337	1.35	1.0000
Na	23	45	He	449935	0.68	1.0000
Mg	24	45	He	375927	0.06	1.0000
Al	27	45	He	33762	1.83	1.0000
K	39	45	He	80982	0.44	1.0000
Ca	40	45	H2	7198251	1.79	1.0000
Ca (no)	44	45	He	12101	2.13	
Ti	47	45	He	2270	7.77	0.9999
V	51	45	He	128417	0.36	1.0000
Cr	52	45	He	180727	0.96	1.0000
Mn	55	45	He	55186	1.54	1.0000
Fe	56	45	He	2758609	0.67	1.0000
Co	59	45	He	372214	0.72	1.0000
Ni	60	45	He	115096	0.94	1.0000
Cu	63	45	He	334336	0.29	1.0000
Zn	66	115	He	35421	1.01	1.0000
As	75	115	He	20317	1.48	1.0000
Se	78	72	H2	24321	1.47	1.0000
Se	78	115	He	612	8.87	1.0000
Sr	88	115	NoGas	3687775	0.16	1.0000
Mo	95	115	NoGas	710522	0.95	1.0000
Ag	107	115	NoGas	922271	0.89	1.0000
Cd	111	115	He	47814	1.05	1.0000
Sn	118	115	He	69344	0.22	1.0000
Sn	118	115	NoGas	1053529	0.85	1.0000
Sb	121	115	NoGas	1703877	0.83	1.0000
Ba	137	165	NoGas	524873	1.85	1.0000
Tl	205	165	NoGas	2966792	0.49	1.0000
[Pb]	206	165	NoGas	937334	0.83	
[Pb]	207	165	NoGas	813896	1.54	
Pb	208	165	NoGas	3903526	1.25	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	228618	1.04	236257	96.77	70	120	
Sc	45	H2	486873	4.92	485596	100.26	70	120	
Sc	45	He	32464	1.40	32391	100.23	70	120	
Sc	45	NoGas	3463517	0.61	3469736	99.82	70	120	
Ge	72	H2	143806	5.17	144823	99.30	70	120	
Ge	72	He	31510	0.49	31735	99.29	70	120	
Ge	72	NoGas	836987	0.39	850290	98.44	70	120	
In	115	H2	3119776	4.49	3158297	98.78	70	120	
In	115	He	230277	1.58	233876	98.46	70	120	
In	115	NoGas	5387784	0.53	5452775	98.81	70	120	
Tb	159	H2	6210687	4.95	6131794	101.29	70	120	
Tb	159	He	1278711	1.48	1276461	100.18	70	120	
Tb	159	NoGas	7085156	1.02	7146294	99.14	70	120	
Ho	165	H2	5801845	4.53	5782470	100.34	70	120	
Ho	165	He	1261724	1.40	1264936	99.75	70	120	
Ho	165	NoGas	6695226	0.08	6686360	100.13	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 4 05/19/16
Data File Name	009CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:47:13-07:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	766289	1.33	1.0000
B	11	45	NoGas	542210	1.33	1.0000
Na	23	45	He	852548	0.35	1.0000
Mg	24	45	He	735082	0.21	1.0000
Al	27	45	He	64956	0.64	0.9999
K	39	45	He	150579	0.32	1.0000
Ca	40	45	H2	14064024	1.26	1.0000
Ca (no)	44	45	He	24174	1.39	
Ti	47	45	He	4627	5.45	0.9998
V	51	45	He	249841	0.46	1.0000
Cr	52	45	He	353443	0.85	1.0000
Mn	55	45	He	106642	0.51	1.0000
Fe	56	45	He	5317946	0.53	0.9999
Co	59	45	He	729852	0.73	1.0000
Ni	60	45	He	221930	1.18	0.9999
Cu	63	45	He	645104	0.55	1.0000
Zn	66	115	He	69452	1.09	1.0000
As	75	115	He	40196	0.99	1.0000
Se	78	72	H2	47766	1.85	1.0000
Se	78	115	He	1200	0.64	1.0000
Sr	88	115	NoGas	7248929	0.85	0.9999
Mo	95	115	NoGas	1475698	0.26	0.9999
Ag	107	115	NoGas	1931388	0.47	0.9998
Cd	111	115	He	93519	0.56	1.0000
Sn	118	115	He	134643	0.24	1.0000
Sn	118	115	NoGas	2172351	1.48	0.9999
Sb	121	115	NoGas	3325939	1.79	0.9999
Ba	137	165	NoGas	1034992	1.33	0.9999
Tl	205	165	NoGas	5710381	1.44	0.9997
[Pb]	206	165	NoGas	1989560	0.66	
[Pb]	207	165	NoGas	1747253	1.02	
Pb	208	165	NoGas	7912969	0.72	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	231871	0.48	236257	98.14	70	120	
Sc	45	H2	483272	4.25	485596	99.52	70	120	
Sc	45	He	32006	1.94	32391	98.81	70	120	
Sc	45	NoGas	3472503	0.51	3469736	100.08	70	120	
Ge	72	H2	142059	5.13	144823	98.09	70	120	
Ge	72	He	31208	2.24	31735	98.34	70	120	
Ge	72	NoGas	845501	0.65	850290	99.44	70	120	
In	115	H2	3092042	5.61	3158297	97.90	70	120	
In	115	He	227377	1.15	233876	97.22	70	120	
In	115	NoGas	5423764	0.47	5452775	99.47	70	120	
Tb	159	H2	6154720	5.08	6131794	100.37	70	120	
Tb	159	He	1286571	1.20	1276461	100.79	70	120	
Tb	159	NoGas	7148326	0.36	7146294	100.03	70	120	
Ho	165	H2	5717087	4.72	5782470	98.87	70	120	
Ho	165	He	1266269	1.14	1264936	100.11	70	120	
Ho	165	NoGas	6756924	0.26	6686360	101.06	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV 160519
Data File Name	010_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:50:33-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	105.195	1.408	806909	1.09	100	105.2	89.6	110.4	
B	11	45	NoGas	104.163	1.885	563181	1.20	100	104.2	89.6	110.4	
Na	23	45	He	2612.144	1.083	909130	0.80	2500	104.5	89.6	110.4	
Mg	24	45	He	2644.102	1.437	396281	1.81	2500	105.8	89.6	110.4	
Al	27	45	He	2649.877	1.499	87874	1.45	2500	106.0	89.6	110.4	
K	39	45	He	2638.676	2.160	200899	1.05	2500	105.5	89.6	110.4	
Ca	40	45	H2	2720.673	6.394	7809832	1.38	2500	108.8	89.6	110.4	
Ti	47	45	He	100.235	1.741	4686	2.43	100	100.2	89.6	110.4	
V	51	45	He	104.137	0.990	265432	0.59	100	104.1	89.6	110.4	
Cr	52	45	He	104.185	1.141	375178	1.02	100	104.2	89.6	110.4	
Mn	55	45	He	105.174	0.550	114568	0.80	100	105.2	89.6	110.4	
Fe	56	45	He	2630.623	1.442	7147161	0.37	2500	105.2	89.6	110.4	
Co	59	45	He	104.529	0.519	777115	0.88	100	104.5	89.6	110.4	
Ni	60	45	He	106.771	0.645	242153	0.73	100	106.8	89.6	110.4	
Cu	63	45	He	106.889	0.174	704273	1.19	100	106.9	89.6	110.4	
Zn	66	115	He	104.555	1.325	73950	0.88	100	104.6	89.6	110.4	
As	75	115	He	97.471	1.029	39950	1.35	100	97.5	89.6	110.4	
Se	78	72	H2	108.396	7.580	52254	1.95	100	108.4	89.6	110.4	
Se	78	115	He	104.905	1.463	1286	2.18	100	104.9	89.6	110.4	
Sr	88	115	NoGas	104.906	1.539	7702796	1.42	100	104.9	89.6	110.4	
Mo	95	115	NoGas	105.291	1.668	1556791	1.32	100	105.3	89.6	110.4	
Ag	107	115	NoGas	51.977	0.858	2008762	2.06	50	104.0	89.6	110.4	
Cd	111	115	He	103.195	0.141	98638	0.90	100	103.2	89.6	110.4	
Sn	118	115	He	53.648	0.271	74006	0.64	100	53.6	89.6	110.4	>+\- 10%
Sn	118	115	NoGas	51.271	1.697	1118594	0.75	100	51.3	89.6	110.4	>+\- 10%
Sb	121	115	NoGas	93.490	1.461	3154190	0.59	100	93.5	89.6	110.4	
Ba	137	165	NoGas	106.965	0.298	1113042	1.34	100	107.0	89.6	110.4	
Tl	205	165	NoGas	107.710	1.905	6214626	1.72	100	107.7	89.6	110.4	
Pb	208	165	NoGas	106.945	0.948	8459991	1.91	100	106.9	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	230824	1.79	236257	97.70	70	120	
Sc	45	H2	490645	5.09	485596	101.04	70	120	
Sc	45	He	32562	1.17	32391	100.53	70	120	
Sc	45	NoGas	3474373	1.19	3469736	100.13	70	120	
Ge	72	H2	143279	5.80	144823	98.93	70	120	
Ge	72	He	31435	1.10	31735	99.06	70	120	
Ge	72	NoGas	846574	1.16	850290	99.56	70	120	
In	115	H2	3131184	5.96	3158297	99.14	70	120	
In	115	He	231935	0.88	233876	99.17	70	120	
In	115	NoGas	5468618	1.77	5452775	100.29	70	120	
Tb	159	H2	6162012	4.80	6131794	100.49	70	120	
Tb	159	He	1292756	1.56	1276461	101.28	70	120	
Tb	159	NoGas	7160421	1.05	7146294	100.20	70	120	
Ho	165	H2	5820319	4.89	5782470	100.65	70	120	
Ho	165	He	1278477	1.57	1264936	101.07	70	120	
Ho	165	NoGas	6762016	1.48	6686360	101.13	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB 160519
Data File Name	019_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T16:32:54-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.019	-26.6	203	19.9	0.1	
B	11	45	NoGas	0.433	47.9	52129	0.8	8	
Na	23	45	He	6.216	41.2	20153	2.7	50	
Mg	24	45	He	0.243	49.5	171	13.0	20	
Al	27	45	He	3.223	50.1	319	18.3	10	
K	39	45	He	13.437	40.4	7173	2.6	40	
Ca	40	45	H2	2.320	37.1	61586	0.8	150	
Ti	47	45	He	0.026	287.5	3	100.1	0.5	
V	51	45	He	0.014	51.1	80	23.2	0.4	
Cr	52	45	He	0.002	669.0	460	10.7	0.2	
Mn	55	45	He	-0.002	-1200.6	98	18.8	0.3	
Fe	56	45	He	0.309	9.5	4384	4.0	30	
Co	59	45	He	0.003	132.2	130	17.9	0.4	
Ni	60	45	He	0.023	39.5	171	11.1	0.4	
Cu	63	45	He	0.040	43.1	1851	5.3	0.4	
Zn	66	115	He	-0.130	-14.0	800	2.3	15	
As	75	115	He	0.012	145.9	10	70.0	0.2	
Se	78	72	H2	0.011	53.2	10	26.6	0.4	
Se	78	115	He	-0.076	-318.8	2	173.2	0.4	
Sr	88	115	NoGas	0.015	4.3	5638	0.2	0.1	
Mo	95	115	NoGas	0.012	41.5	370	18.7	0.3	
Ag	107	115	NoGas	0.001	213.6	150	37.1	0.1	
Cd	111	115	He	0.009	73.4	15	39.8	0.1	
Sn	118	115	He	0.033	128.7	228	23.7	0.1	
Sn	118	115	NoGas	0.026	15.3	3379	3.1	0.1	
Sb	121	115	NoGas	0.020	60.3	2760	13.5	0.5	
Ba	137	165	NoGas	-0.004	-376.1	370	38.1	0.4	
Tl	205	165	NoGas	0.007	43.6	663	27.1	0.2	
Pb	208	165	NoGas	-0.026	-4.9	4484	2.2	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	226005	0.43	236257	95.66	70	120	
Sc	45	H2	482988	4.11	485596	99.46	70	120	
Sc	45	He	32057	2.95	32391	98.97	70	120	
Sc	45	NoGas	3420624	1.28	3469736	98.58	70	120	
Ge	72	H2	140812	4.42	144823	97.23	70	120	
Ge	72	He	31129	0.58	31735	98.09	70	120	
Ge	72	NoGas	832044	0.98	850290	97.85	70	120	
In	115	H2	3137737	4.69	3158297	99.35	70	120	
In	115	He	230036	1.73	233876	98.36	70	120	
In	115	NoGas	5331751	1.02	5452775	97.78	70	120	
Tb	159	H2	6201285	3.83	6131794	101.13	70	120	
Tb	159	He	1267259	1.26	1276461	99.28	70	120	
Tb	159	NoGas	6983404	0.66	7146294	97.72	70	120	
Ho	165	H2	5820581	4.67	5782470	100.66	70	120	
Ho	165	He	1255723	1.19	1264936	99.27	70	120	
Ho	165	NoGas	6631486	0.51	6686360	99.18	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA 160519
Data File Name	020ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T16:36:16-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.003	-200.4	320	11.3	0.1	
B	11	45	NoGas	1.044	22.8	53921	1.7	8	
Na	23	45	He	46371.335	0.3	15543988	0.3	60000	
Mg	24	45	He	43287.435	1.7	6367359	1.6	60000	
Al	27	45	He	45132.383	1.8	1466078	1.9	60000	
K	39	45	He	43318.960	1.2	3143166	1.3	60000	
Ca	40	45	H2	45123.276	5.4	123990653	0.9	60000	
Ti	47	45	He	915.264	0.9	41991	0.8	1200	
V	51	45	He	0.033	31.2	128	19.9	0.2	
Cr	52	45	He	0.452	2.9	2047	2.5	30	
Mn	55	45	He	1.917	2.5	2148	2.4	24	
Fe	56	45	He	44147.304	0.7	117715431	0.6	60000	
Co	59	45	He	0.101	11.9	844	10.5	5	
Ni	60	45	He	0.236	5.5	646	4.4	20	
Cu	63	45	He	0.401	9.7	4179	5.9	25	
Zn	66	115	He	0.673	12.8	1252	5.1	60	
As	75	115	He	0.198	10.7	79	10.7	0.4	
Se	78	72	H2	0.057	4.0	30	5.5	0.4	
Se	78	115	He	0.141	110.4	4	43.3	0.4	
Sr	88	115	NoGas	0.556	1.6	41657	1.0	5	
Mo	95	115	NoGas	920.398	1.2	12450211	0.3	1200	
Ag	107	115	NoGas	0.091	0.5	3320	0.5	5	
Cd	111	115	He	0.115	17.7	107	17.3	0.5	
Sn	118	115	He	0.281	14.0	523	9.0	5	
Sn	118	115	NoGas	0.242	2.6	7468	2.1	5	
Sb	121	115	NoGas	0.179	6.7	7502	4.0	5	
Ba	137	165	NoGas	0.367	8.3	4057	7.7	1.5	
Tl	205	165	NoGas	0.019	6.6	1313	5.1	0.2	
Pb	208	165	NoGas	0.267	0.0	26616	1.3	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	202453	0.51	236257	85.69	70	120	
Sc	45	H2	472587	4.41	485596	97.32	70	120	
Sc	45	He	31969	0.17	32391	98.70	70	120	
Sc	45	NoGas	3347931	1.38	3469736	96.49	70	120	
Ge	72	H2	133261	4.46	144823	92.02	70	120	
Ge	72	He	29755	1.60	31735	93.76	70	120	
Ge	72	NoGas	816760	0.34	850290	96.06	70	120	
In	115	H2	2879418	6.82	3158297	91.17	70	120	
In	115	He	212327	0.70	233876	90.79	70	120	
In	115	NoGas	5003385	0.97	5452775	91.76	70	120	
Tb	159	H2	5902356	4.09	6131794	96.26	70	120	
Tb	159	He	1231320	0.75	1276461	96.46	70	120	
Tb	159	NoGas	6862916	0.22	7146294	96.03	70	120	
Ho	165	H2	5560178	4.76	5782470	96.16	70	120	
Ho	165	He	1223576	1.19	1264936	96.73	70	120	
Ho	165	NoGas	6488671	1.28	6686360	97.04	70	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB 160519
Data File Name	021ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T16:39:33-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	45.157	1.601	336077	1.18	50	90.3	80	120	
B	11	45	NoGas	0.892	33.396	53543	2.98	-8	-11.2	80	120	
Na	23	45	He	48160.319	0.841	16281675	0.13	50000	96.3	80	120	
Mg	24	45	He	44550.482	0.685	6609577	0.31	50000	89.1	80	120	
Al	27	45	He	45152.691	1.003	1479424	1.52	50000	90.3	80	120	
K	39	45	He	44909.728	0.263	3286501	0.86	50000	89.8	80	120	
Ca	40	45	H2	46038.756	4.809	127614186	1.16	50000	92.1	80	120	
Ti	47	45	He	920.582	1.607	42597	1.06	1000	92.1	80	120	
V	51	45	He	48.539	1.329	122542	1.05	50	97.1	80	120	
Cr	52	45	He	47.103	1.835	168214	1.36	50	94.2	80	120	
Mn	55	45	He	50.065	0.678	54059	0.87	50	100.1	80	120	
Fe	56	45	He	44854.794	1.041	120628769	0.28	50000	89.7	80	120	
Co	59	45	He	47.498	0.290	349750	0.55	50	95.0	80	120	
Ni	60	45	He	93.791	0.802	210667	1.11	100	93.8	80	120	
Cu	63	45	He	47.308	0.394	309555	0.52	50	94.6	80	120	
Zn	66	115	He	96.900	1.528	62732	0.67	100	96.9	80	120	
As	75	115	He	49.358	2.398	18498	0.56	50	98.7	80	120	
Se	78	72	H2	47.997	5.510	21682	1.39	50	96.0	80	120	
Se	78	115	He	47.928	10.786	539	11.48	50	95.9	80	120	
Sr	88	115	NoGas	0.567	1.245	42839	1.31	-5	-11.3	80	120	
Mo	95	115	NoGas	988.663	1.696	13510034	0.76	1050	94.2	80	120	
Ag	107	115	NoGas	87.119	1.316	3111670	0.97	100	87.1	80	120	
Cd	111	115	He	97.840	2.007	85507	0.52	100	97.8	80	120	
Sn	118	115	He	0.249	24.518	484	17.53	50	0.5	80	120	>+\- 20%
Sn	118	115	NoGas	0.244	3.520	7592	1.61	50	0.5	80	120	>+\- 20%
Sb	121	115	NoGas	48.272	1.283	1506408	0.73	50	96.5	80	120	
Ba	137	165	NoGas	48.423	0.842	490552	0.76	50	96.8	80	120	
Tl	205	165	NoGas	46.159	0.685	2592130	1.03	50	92.3	80	120	
Pb	208	165	NoGas	92.486	0.098	7120379	0.87	100	92.5	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	206474	0.63	236257	87.39	70	120	
Sc	45	H2	476558	3.95	485596	98.14	70	120	
Sc	45	He	32245	0.78	32391	99.55	70	120	
Sc	45	NoGas	3369074	1.14	3469736	97.10	70	120	
Ge	72	H2	134062	4.14	144823	92.57	70	120	
Ge	72	He	30806	1.93	31735	97.08	70	120	
Ge	72	NoGas	825533	0.07	850290	97.09	70	120	
In	115	H2	2891387	4.38	3158297	91.55	70	120	
In	115	He	212115	1.87	233876	90.70	70	120	
In	115	NoGas	5054551	0.93	5452775	92.70	70	120	
Tb	159	H2	6034549	4.90	6131794	98.41	70	120	
Tb	159	He	1218901	0.95	1276461	95.49	70	120	
Tb	159	NoGas	6907989	0.53	7146294	96.67	70	120	
Ho	165	H2	5680012	4.92	5782470	98.23	70	120	
Ho	165	He	1217490	1.32	1264936	96.25	70	120	
Ho	165	NoGas	6580337	0.79	6686360	98.41	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 160519
Data File Name	067_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:18:16-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	44.665	0.937	375128	0.83	50	89.3	89.6	110.4	>+/- 10%
B	11	45	NoGas	44.616	0.952	295769	0.57	50	89.2	89.6	110.4	>+/- 10%
Na	23	45	He	1267.634	4.094	465188	0.96	1250	101.4	89.6	110.4	
Mg	24	45	He	2450.669	3.745	379152	0.76	2500	98.0	89.6	110.4	
Al	27	45	He	937.050	3.407	32228	1.57	1000	93.7	89.6	110.4	
K	39	45	He	979.314	3.874	81074	0.90	1000	97.9	89.6	110.4	
Ca	40	45	H2	2673.506	6.876	7624897	2.32	2500	106.9	89.6	110.4	
Ti	47	45	He	45.789	2.702	2212	3.62	50	91.6	89.6	110.4	
V	51	45	He	48.567	3.675	127821	0.80	50	97.1	89.6	110.4	
Cr	52	45	He	48.263	3.352	179682	0.37	50	96.5	89.6	110.4	
Mn	55	45	He	48.286	3.303	54359	0.79	50	96.6	89.6	110.4	
Fe	56	45	He	988.388	3.150	2775026	1.00	1000	98.8	89.6	110.4	
Co	59	45	He	48.408	3.362	371601	0.57	50	96.8	89.6	110.4	
Ni	60	45	He	48.072	3.520	112623	0.92	50	96.1	89.6	110.4	
Cu	63	45	He	48.352	2.766	329840	0.23	50	96.7	89.6	110.4	
Zn	66	115	He	47.755	0.424	35305	1.41	50	95.5	89.6	110.4	
As	75	115	He	46.867	1.887	19791	0.92	50	93.7	89.6	110.4	
Se	78	72	H2	51.575	7.375	24611	2.36	50	103.2	89.6	110.4	
Se	78	115	He	47.228	3.473	598	2.28	50	94.5	89.6	110.4	
Sr	88	115	NoGas	46.393	1.578	3706989	0.76	50	92.8	89.6	110.4	
Mo	95	115	NoGas	44.439	0.422	714659	0.46	50	88.9	89.6	110.4	>+/- 10%
Ag	107	115	NoGas	21.851	0.849	918262	0.01	25	87.4	89.6	110.4	>+/- 10%
Cd	111	115	He	47.277	1.062	46559	0.24	50	94.6	89.6	110.4	
Sn	118	115	He	48.036	1.928	68284	0.77	50	96.1	89.6	110.4	
Sn	118	115	NoGas	44.654	0.427	1059908	0.55	50	89.3	89.6	110.4	>+/- 10%
Sb	121	115	NoGas	48.991	1.092	1798582	0.79	50	98.0	89.6	110.4	
Ba	137	165	NoGas	46.286	0.837	536195	0.09	50	92.6	89.6	110.4	
Tl	205	165	NoGas	47.335	1.081	3039415	0.33	50	94.7	89.6	110.4	
Pb	208	165	NoGas	45.163	0.346	3979718	0.83	50	90.3	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	249333	0.27	236257	105.53	70	120	
Sc	45	H2	487392	4.68	485596	100.37	70	120	
Sc	45	He	33637	2.95	32391	103.85	70	120	
Sc	45	NoGas	3801674	0.21	3469736	109.57	70	120	
Ge	72	H2	141771	5.37	144823	97.89	70	120	
Ge	72	He	33003	1.05	31735	104.00	70	120	
Ge	72	NoGas	905583	0.57	850290	106.50	70	120	
In	115	H2	3189197	3.06	3158297	100.98	70	120	
In	115	He	238967	1.30	233876	102.18	70	120	
In	115	NoGas	5946315	0.84	5452775	109.05	70	120	
Tb	159	H2	6434569	4.73	6131794	104.94	70	120	
Tb	159	He	1327770	1.11	1276461	104.02	70	120	
Tb	159	NoGas	7901007	0.90	7146294	110.56	70	120	
Ho	165	H2	6023247	5.08	5782470	104.16	70	120	
Ho	165	He	1308483	1.22	1264936	103.44	70	120	
Ho	165	NoGas	7524609	0.81	6686360	112.54	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 160519
Data File Name	069_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:25:03-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.032	-12.2	117	27.6	0.1	
B	11	45	NoGas	0.579	59.8	56723	1.5	8	
Na	23	45	He	28.326	13.7	27788	1.4	50	
Mg	24	45	He	0.333	23.4	186	7.5	20	
Al	27	45	He	0.388	420.5	227	20.6	10	
K	39	45	He	10.957	49.3	7049	2.1	40	
Ca	40	45	H2	1.705	46.3	58001	1.7	150	
Ti	47	45	He	-0.024	-175.2	1	173.2	0.5	
V	51	45	He	0.010	53.3	71	16.5	0.4	
Cr	52	45	He	-0.010	-106.1	422	12.3	0.2	
Mn	55	45	He	-0.005	-607.9	94	33.4	0.3	
Fe	56	45	He	0.111	54.4	3882	1.2	30	
Co	59	45	He	-0.002	-188.2	96	34.9	0.4	
Ni	60	45	He	0.005	117.0	132	10.2	0.4	
Cu	63	45	He	0.005	553.8	1639	10.0	0.4	
Zn	66	115	He	0.104	41.8	966	2.7	15	
As	75	115	He	0.022	31.5	14	17.6	0.2	
Se	78	72	H2	0.021	56.6	14	32.3	0.4	
Se	78	115	He	0.083	143.5	4	41.7	0.4	
Sr	88	115	NoGas	-0.001	-238.4	4911	2.9	0.1	
Mo	95	115	NoGas	0.043	34.9	880	26.6	0.3	
Ag	107	115	NoGas	0.003	19.8	240	8.3	0.1	
Cd	111	115	He	0.006	75.8	13	34.6	0.1	
Sn	118	115	He	0.035	87.6	232	16.8	0.1	
Sn	118	115	NoGas	0.033	25.6	3835	5.2	0.1	
Sb	121	115	NoGas	0.165	6.2	8189	5.3	0.5	
Ba	137	165	NoGas	-0.005	-35.9	380	5.3	0.4	
Tl	205	165	NoGas	0.019	5.6	1447	3.9	0.2	
Pb	208	165	NoGas	-0.043	-2.4	3384	2.2	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	244118	1.02	236257	103.33	70	120	
Sc	45	H2	468139	5.40	485596	96.41	70	120	
Sc	45	He	32327	3.93	32391	99.80	70	120	
Sc	45	NoGas	3673238	2.28	3469736	105.87	70	120	
Ge	72	H2	135920	5.69	144823	93.85	70	120	
Ge	72	He	31445	1.81	31735	99.09	70	120	
Ge	72	NoGas	882261	0.14	850290	103.76	70	120	
In	115	H2	3140291	6.05	3158297	99.43	70	120	
In	115	He	230843	2.40	233876	98.70	70	120	
In	115	NoGas	5803041	0.93	5452775	106.42	70	120	
Tb	159	H2	6135656	5.30	6131794	100.06	70	120	
Tb	159	He	1264191	2.18	1276461	99.04	70	120	
Tb	159	NoGas	7654438	1.70	7146294	107.11	70	120	
Ho	165	H2	5830865	5.04	5782470	100.84	70	120	
Ho	165	He	1255525	1.69	1264936	99.26	70	120	
Ho	165	NoGas	7138297	0.70	6686360	106.76	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 160519
Data File Name	087_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:26:18-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	44.760	0.139	371050	0.45	50	89.5	89.6	110.4	>+/- 10%
B	11	45	NoGas	46.169	0.134	300185	0.46	50	92.3	89.6	110.4	
Na	23	45	He	1333.607	2.325	489990	0.31	1250	106.7	89.6	110.4	
Mg	24	45	He	2448.711	2.043	380069	0.08	2500	97.9	89.6	110.4	
Al	27	45	He	980.910	3.113	33825	1.22	1000	98.1	89.6	110.4	
K	39	45	He	982.326	1.848	81565	0.53	1000	98.2	89.6	110.4	
Ca	40	45	H2	2679.735	5.087	7665606	1.36	2500	107.2	89.6	110.4	
Tl	47	45	He	48.803	5.460	2365	5.95	50	97.6	89.6	110.4	
V	51	45	He	49.200	1.798	129904	0.19	50	98.4	89.6	110.4	
Cr	52	45	He	48.864	1.791	182493	0.37	50	97.7	89.6	110.4	
Mn	55	45	He	49.264	2.621	55627	0.64	50	98.5	89.6	110.4	
Fe	56	45	He	985.016	2.145	2774086	0.77	1000	98.5	89.6	110.4	
Co	59	45	He	48.760	1.315	375511	0.66	50	97.5	89.6	110.4	
Ni	60	45	He	48.147	2.020	113157	0.38	50	96.3	89.6	110.4	
Cu	63	45	He	48.259	1.200	330245	0.80	50	96.5	89.6	110.4	
Zn	66	115	He	48.602	1.360	35517	1.54	50	97.2	89.6	110.4	
As	75	115	He	48.218	1.647	20137	0.50	50	96.4	89.6	110.4	
Se	78	72	H2	51.619	6.151	24535	2.28	50	103.2	89.6	110.4	
Se	78	115	He	50.309	0.987	630	2.23	50	100.6	89.6	110.4	
Sr	88	115	NoGas	47.391	1.082	3740109	1.44	50	94.8	89.6	110.4	
Mo	95	115	NoGas	44.950	1.329	713936	1.30	50	89.9	89.6	110.4	
Ag	107	115	NoGas	22.344	0.575	927423	0.86	25	89.4	89.6	110.4	>+/- 10%
Cd	111	115	He	48.275	1.678	47016	1.18	50	96.6	89.6	110.4	
Sn	118	115	He	49.079	1.293	68997	0.82	50	98.2	89.6	110.4	
Sn	118	115	NoGas	45.545	0.269	1067621	0.45	50	91.1	89.6	110.4	
Sb	121	115	NoGas	48.258	0.373	1749854	0.79	50	96.5	89.6	110.4	
Ba	137	165	NoGas	47.991	0.512	540325	0.13	50	96.0	89.6	110.4	
Tl	205	165	NoGas	48.486	0.875	3025951	0.98	50	97.0	89.6	110.4	
Pb	208	165	NoGas	46.131	1.157	3950514	0.95	50	92.3	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	249775	1.44	236257	105.72	70	120	
Sc	45	H2	488438	3.65	485596	100.59	70	120	
Sc	45	He	33730	1.95	32391	104.13	70	120	
Sc	45	NoGas	3752371	0.45	3469736	108.15	70	120	
Ge	72	H2	141072	3.89	144823	97.41	70	120	
Ge	72	He	32625	1.91	31735	102.81	70	120	
Ge	72	NoGas	902243	1.03	850290	106.11	70	120	
In	115	H2	3165136	3.47	3158297	100.22	70	120	
In	115	He	236328	1.32	233876	101.05	70	120	
In	115	NoGas	5872708	0.47	5452775	107.70	70	120	
Tb	159	H2	6240282	3.91	6131794	101.77	70	120	
Tb	159	He	1308580	1.36	1276461	102.52	70	120	
Tb	159	NoGas	7830679	0.77	7146294	109.58	70	120	
Ho	165	H2	5910510	3.64	5782470	102.21	70	120	
Ho	165	He	1300169	1.51	1264936	102.79	70	120	
Ho	165	NoGas	7313093	0.39	6686360	109.37	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 160519
Data File Name	089_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:33:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.033	-21.1	103	55.9	0.1	
B	11	45	NoGas	1.612	2.5	62504	0.8	8	
Na	23	45	He	67.116	1.0	42492	1.5	50	>LOD
Mg	24	45	He	0.368	68.1	198	19.2	20	
Al	27	45	He	-0.166	-629.9	218	16.9	10	
K	39	45	He	5.049	78.9	6872	3.0	40	
Ca	40	45	H2	1.403	55.3	58349	1.1	150	
Ti	47	45	He	-0.003	-3053.0	2	173.2	0.5	
V	51	45	He	-0.001	-535.3	46	29.6	0.4	
Cr	52	45	He	-0.023	-7.1	390	2.3	0.2	
Mn	55	45	He	0.022	44.9	129	9.1	0.3	
Fe	56	45	He	0.011	266.4	3753	2.4	30	
Co	59	45	He	-0.003	-141.7	92	33.6	0.4	
Ni	60	45	He	0.025	33.2	182	9.2	0.4	
Cu	63	45	He	-0.007	-203.8	1620	7.7	0.4	
Zn	66	115	He	-0.050	-184.0	883	7.5	15	
As	75	115	He	0.012	93.3	10	44.7	0.2	
Se	78	72	H2	0.018	15.7	13	6.4	0.4	
Se	78	115	He	-0.029	-655.0	2	99.0	0.4	
Sr	88	115	NoGas	0.003	63.0	5331	3.6	0.1	
Mo	95	115	NoGas	0.037	15.4	803	11.2	0.3	
Ag	107	115	NoGas	0.001	71.8	197	21.2	0.1	
Cd	111	115	He	0.012	53.6	19	30.9	0.1	
Sn	118	115	He	0.045	37.5	253	10.4	0.1	
Sn	118	115	NoGas	0.027	3.8	3764	1.3	0.1	
Sb	121	115	NoGas	0.078	1.2	5181	1.2	0.5	
Ba	137	165	NoGas	-0.003	-166.8	410	14.8	0.4	
Tl	205	165	NoGas	0.018	12.1	1380	9.3	0.2	
Pb	208	165	NoGas	-0.052	-6.6	2687	11.0	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	245405	0.65	236257	103.87	70	120	
Sc	45	H2	477624	4.71	485596	98.36	70	120	
Sc	45	He	33542	1.70	32391	103.55	70	120	
Sc	45	NoGas	3696010	0.68	3469736	106.52	70	120	
Ge	72	H2	137311	3.35	144823	94.81	70	120	
Ge	72	He	32211	1.49	31735	101.50	70	120	
Ge	72	NoGas	897025	1.12	850290	105.50	70	120	
In	115	H2	3163239	4.36	3158297	100.16	70	120	
In	115	He	237380	1.95	233876	101.50	70	120	
In	115	NoGas	5915130	0.68	5452775	108.48	70	120	
Tb	159	H2	6215178	5.73	6131794	101.36	70	120	
Tb	159	He	1298259	1.66	1276461	101.71	70	120	
Tb	159	NoGas	7678284	0.05	7146294	107.44	70	120	
Ho	165	H2	5851266	4.54	5782470	101.19	70	120	
Ho	165	He	1296382	2.04	1264936	102.49	70	120	
Ho	165	NoGas	7268435	0.38	6686360	108.71	70	120	

Calibration Blank Report

Sample Table

Sample Name	Calibration Blank 05/20/16
Data File Name	006CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T08:58:46-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD
Be	9	6	NoGas	127	16.43
B	11	45	NoGas	39776	0.68
Na	23	45	He	25071	1.35
Mg	24	45	He	108	12.88
Al	27	45	He	198	1.94
K	39	45	He	5471	5.42
Ca	40	45	H2	78096	1.63
Ca (no)	44	45	He	117	29.00
Ti	47	45	He	1	173.21
V	51	45	He	62	35.67
Cr	52	45	He	583	8.93
Mn	55	45	He	58	33.81
Fe	56	45	He	2588	9.25
Co	59	45	He	43	33.52
Ni	60	45	He	210	24.95
Cu	63	45	He	2450	3.27
Zn	66	115	He	1047	2.23
As	75	115	He	5	21.65
Se	78	72	H2	7	24.74
Se	78	115	He	0	173.21
Sr	88	115	NoGas	5698	2.84
Mo	95	115	NoGas	130	60.08
Ag	107	115	NoGas	53	57.28
Cd	111	115	He	11	20.38
Sn	118	115	He	299	2.81
Sn	118	115	NoGas	3854	2.99
Sb	121	115	NoGas	2510	8.52
Ba	137	165	NoGas	247	30.43
Tl	205	165	NoGas	217	17.48
[Pb]	206	165	NoGas	1123	12.91
[Pb]	207	165	NoGas	1180	9.77
Pb	208	165	NoGas	5017	4.99

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	NoGas	115259	0.48
Sc	45	H2	497539	3.68
Sc	45	He	29688	2.77
Sc	45	NoGas	3567710	0.87
Ge	72	H2	154208	3.77
Ge	72	He	30282	2.25
Ge	72	NoGas	872567	0.96
In	115	H2	3044907	4.19
In	115	He	224982	2.32
In	115	NoGas	5525169	0.27
Tb	159	H2	5558678	4.55
Tb	159	He	1315002	1.82
Tb	159	NoGas	7249592	1.36
Ho	165	H2	5171419	5.19
Ho	165	He	1293090	1.99
Ho	165	NoGas	6788564	1.03

Calibration Standard Report

Sample Table

Sample Name	Standard 1 05/20/16
Data File Name	007CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:02:17-07:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	6	NoGas	543	12.25	1.0000
B	11	45	NoGas	41086	2.52	0.9997
Na	23	45	He	24468	1.90	0.9999
Mg	24	45	He	736	7.11	0.9999
Al	27	45	He	286	14.12	0.9999
K	39	45	He	5311	2.58	0.9999
Ca	40	45	H2	90886	0.52	0.9997
Ca (no)	44	45	He	133	13.23	
Ti	47	45	He	2	173.21	1.0000
V	51	45	He	317	16.94	0.9999
Cr	52	45	He	912	10.70	0.9998
Mn	55	45	He	144	35.48	0.9999
Fe	56	45	He	7652	1.07	0.9996
Co	59	45	He	800	11.92	0.9999
Ni	60	45	He	426	9.08	0.9998
Cu	63	45	He	3016	4.45	0.9998
Zn	66	115	He	1128	6.23	0.9999
As	75	115	He	40	19.26	1.0000
Se	78	72	H2	52	12.29	0.9999
Se	78	115	He	3	88.19	1.0000
Sr	88	115	NoGas	12341	3.94	1.0000
Mo	95	115	NoGas	1537	8.67	0.9999
Ag	107	115	NoGas	1790	12.10	0.9999
Cd	111	115	He	88	15.91	1.0000
Sn	118	115	He	364	10.03	1.0000
Sn	118	115	NoGas	5984	1.61	0.9999
Sb	121	115	NoGas	5441	3.14	0.9999
Ba	137	165	NoGas	1323	0.44	1.0000
Tl	205	165	NoGas	5845	0.43	0.9998
[Pb]	206	165	NoGas	2810	0.94	
[Pb]	207	165	NoGas	2580	4.57	
Pb	208	165	NoGas	11739	3.43	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	116149	1.46	115259	100.77	70	120	
Sc	45	H2	505207	4.22	497539	101.54	70	120	
Sc	45	He	29750	1.13	29688	100.21	70	120	
Sc	45	NoGas	3527242	0.66	3567710	98.87	70	120	
Ge	72	H2	156581	4.95	154208	101.54	70	120	
Ge	72	He	29748	2.74	30282	98.24	70	120	
Ge	72	NoGas	868568	0.37	872567	99.54	70	120	
In	115	H2	3058692	4.72	3044907	100.45	70	120	
In	115	He	225286	2.06	224982	100.14	70	120	
In	115	NoGas	5522041	0.70	5525169	99.94	70	120	
Tb	159	H2	5602554	5.03	5558678	100.79	70	120	
Tb	159	He	1328338	2.04	1315002	101.01	70	120	
Tb	159	NoGas	7270480	1.20	7249592	100.29	70	120	
Ho	165	H2	5247981	3.63	5171419	101.48	70	120	
Ho	165	He	1299204	1.31	1293090	100.47	70	120	
Ho	165	NoGas	6790152	0.87	6788564	100.02	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 2 05/20/16
Data File Name	008CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:05:39-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	6	NoGas	4554	3.63	1.0000
B	11	45	NoGas	43066	1.60	0.9997
Na	23	45	He	30604	0.43	0.9999
Mg	24	45	He	6200	1.33	0.9999
Al	27	45	He	739	8.47	0.9999
K	39	45	He	6819	5.30	0.9999
Ca	40	45	H2	240321	1.43	0.9997
Ca (no)	44	45	He	308	3.80	
Ti	47	45	He	37	56.77	1.0000
V	51	45	He	2269	5.73	0.9999
Cr	52	45	He	3724	2.78	0.9998
Mn	55	45	He	1012	4.89	0.9999
Fe	56	45	He	49161	1.08	0.9996
Co	59	45	He	6746	0.29	0.9999
Ni	60	45	He	2378	0.35	0.9998
Cu	63	45	He	8533	3.58	0.9998
Zn	66	115	He	1675	5.58	0.9999
As	75	115	He	362	4.25	1.0000
Se	78	72	H2	508	2.02	0.9999
Se	78	115	He	14	12.37	1.0000
Sr	88	115	NoGas	70584	2.63	1.0000
Mo	95	115	NoGas	13616	6.21	0.9999
Ag	107	115	NoGas	18003	0.90	0.9999
Cd	111	115	He	885	1.73	1.0000
Sn	118	115	He	1406	5.59	1.0000
Sn	118	115	NoGas	23565	3.11	0.9999
Sb	121	115	NoGas	30842	0.32	0.9999
Ba	137	165	NoGas	10320	1.31	1.0000
Tl	205	165	NoGas	53255	0.40	0.9998
[Pb]	206	165	NoGas	19452	0.76	
[Pb]	207	165	NoGas	17153	6.81	
Pb	208	165	NoGas	77946	1.61	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	114774	0.65	115259	99.58	70	120	
Sc	45	H2	504032	4.20	497539	101.31	70	120	
Sc	45	He	29407	3.10	29688	99.05	70	120	
Sc	45	NoGas	3514677	1.27	3567710	98.51	70	120	
Ge	72	H2	155195	3.46	154208	100.64	70	120	
Ge	72	He	30228	2.33	30282	99.82	70	120	
Ge	72	NoGas	871019	0.56	872567	99.82	70	120	
In	115	H2	3064004	3.53	3044907	100.63	70	120	
In	115	He	224528	2.42	224982	99.80	70	120	
In	115	NoGas	5504769	0.68	5525169	99.63	70	120	
Tb	159	H2	5587094	3.59	5558678	100.51	70	120	
Tb	159	He	1321215	2.09	1315002	100.47	70	120	
Tb	159	NoGas	7303683	0.23	7249592	100.75	70	120	
Ho	165	H2	5240017	4.32	5171419	101.33	70	120	
Ho	165	He	1301875	2.33	1293090	100.68	70	120	
Ho	165	NoGas	6864188	0.82	6788564	101.11	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 3 05/20/16
Data File Name	009CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:09:03-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	6	NoGas	229326	0.61	1.0000
B	11	45	NoGas	194827	0.74	0.9997
Na	23	45	He	375012	0.32	0.9999
Mg	24	45	He	311659	0.87	0.9999
Al	27	45	He	27164	1.46	0.9999
K	39	45	He	65793	0.93	0.9999
Ca	40	45	H2	8144743	3.48	0.9997
Ca (no)	44	45	He	10970	0.90	
Ti	47	45	He	2015	3.08	1.0000
V	51	45	He	112349	0.12	0.9999
Cr	52	45	He	162856	0.42	0.9998
Mn	55	45	He	47955	0.25	0.9999
Fe	56	45	He	2464427	1.37	0.9996
Co	59	45	He	339992	0.51	0.9999
Ni	60	45	He	105442	0.90	0.9998
Cu	63	45	He	309236	0.60	0.9998
Zn	66	115	He	32721	0.64	0.9999
As	75	115	He	18309	0.10	1.0000
Se	78	72	H2	25149	1.96	0.9999
Se	78	115	He	524	3.79	1.0000
Sr	88	115	NoGas	3358441	0.66	1.0000
Mo	95	115	NoGas	687798	0.41	0.9999
Ag	107	115	NoGas	893523	0.63	0.9999
Cd	111	115	He	44175	1.11	1.0000
Sn	118	115	He	64770	0.21	1.0000
Sn	118	115	NoGas	1018701	0.61	0.9999
Sb	121	115	NoGas	1491570	0.29	0.9999
Ba	137	165	NoGas	502074	0.75	1.0000
Tl	205	165	NoGas	2791174	1.43	0.9998
[Pb]	206	165	NoGas	918489	0.69	
[Pb]	207	165	NoGas	800072	0.69	
Pb	208	165	NoGas	3719482	0.98	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	114960	1.15	115259	99.74	70	120	
Sc	45	H2	497518	4.50	497539	100.00	70	120	
Sc	45	He	30140	2.61	29688	101.52	70	120	
Sc	45	NoGas	3636306	1.39	3567710	101.92	70	120	
Ge	72	H2	153478	4.63	154208	99.53	70	120	
Ge	72	He	30500	1.81	30282	100.72	70	120	
Ge	72	NoGas	874396	0.53	872567	100.21	70	120	
In	115	H2	3016790	5.95	3044907	99.08	70	120	
In	115	He	230109	1.50	224982	102.28	70	120	
In	115	NoGas	5562579	0.84	5525169	100.68	70	120	
Tb	159	H2	5596951	4.55	5558678	100.69	70	120	
Tb	159	He	1354057	2.08	1315002	102.97	70	120	
Tb	159	NoGas	7398528	0.85	7249592	102.05	70	120	
Ho	165	H2	5208007	5.16	5171419	100.71	70	120	
Ho	165	He	1333325	2.33	1293090	103.11	70	120	
Ho	165	NoGas	6916746	0.13	6788564	101.89	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 4 05/20/16
Data File Name	010CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:12:28-07:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	6	NoGas	462231	1.06	1.0000
B	11	45	NoGas	350689	1.06	0.9997
Na	23	45	He	702590	1.06	0.9999
Mg	24	45	He	605605	0.37	0.9999
Al	27	45	He	52594	0.39	0.9999
K	39	45	He	122421	0.58	0.9999
Ca	40	45	H2	15658118	0.23	0.9997
Ca (no)	44	45	He	20646	0.11	
Ti	47	45	He	3976	4.20	1.0000
V	51	45	He	218658	0.32	0.9999
Cr	52	45	He	313340	0.73	0.9998
Mn	55	45	He	92707	0.57	0.9999
Fe	56	45	He	4651558	0.86	0.9996
Co	59	45	He	659180	0.50	0.9999
Ni	60	45	He	202132	0.28	0.9998
Cu	63	45	He	593442	0.22	0.9998
Zn	66	115	He	61639	1.04	0.9999
As	75	115	He	35740	1.01	1.0000
Se	78	72	H2	49780	2.11	0.9999
Se	78	115	He	1033	1.74	1.0000
Sr	88	115	NoGas	6513149	1.35	1.0000
Mo	95	115	NoGas	1357799	3.47	0.9999
Ag	107	115	NoGas	1767671	1.08	0.9999
Cd	111	115	He	85991	1.15	1.0000
Sn	118	115	He	126421	0.76	1.0000
Sn	118	115	NoGas	2030963	1.16	0.9999
Sb	121	115	NoGas	2968223	0.34	0.9999
Ba	137	165	NoGas	975138	0.79	1.0000
Tl	205	165	NoGas	5303889	0.88	0.9998
[Pb]	206	165	NoGas	1826986	0.88	
[Pb]	207	165	NoGas	1605435	1.29	
Pb	208	165	NoGas	7218408	0.52	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	117906	1.13	115259	102.30	70	120	
Sc	45	H2	505444	3.06	497539	101.59	70	120	
Sc	45	He	30114	0.41	29688	101.43	70	120	
Sc	45	NoGas	3500228	2.24	3567710	98.11	70	120	
Ge	72	H2	154996	3.44	154208	100.51	70	120	
Ge	72	He	30263	2.46	30282	99.94	70	120	
Ge	72	NoGas	864924	0.66	872567	99.12	70	120	
In	115	H2	3032610	1.01	3044907	99.60	70	120	
In	115	He	225429	1.61	224982	100.20	70	120	
In	115	NoGas	5365689	1.37	5525169	97.11	70	120	
Tb	159	H2	5655793	2.49	5558678	101.75	70	120	
Tb	159	He	1344698	1.12	1315002	102.26	70	120	
Tb	159	NoGas	7255210	0.64	7249592	100.08	70	120	
Ho	165	H2	5263632	2.46	5171419	101.78	70	120	
Ho	165	He	1329038	1.48	1293090	102.78	70	120	
Ho	165	NoGas	6851988	1.42	6788564	100.93	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV 160519
Data File Name	011_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:15:47-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	6	NoGas	103.592	0.850	477171	1.25	100	103.6	89.6	110.4	
B	11	45	NoGas	104.499	0.898	372974	0.63	100	104.5	89.6	110.4	
Na	23	45	He	2708.300	2.835	741679	0.34	2500	108.3	89.6	110.4	
Mg	24	45	He	2704.777	2.284	320049	0.40	2500	108.2	89.6	110.4	
Al	27	45	He	2683.349	2.881	68854	0.26	2500	107.3	89.6	110.4	
K	39	45	He	2697.843	2.356	159438	0.83	2500	107.9	89.6	110.4	
Ca	40	45	H2	2696.130	6.722	8438692	1.04	2500	107.8	89.6	110.4	
Ti	47	45	He	104.462	1.610	4045	1.13	100	104.5	89.6	110.4	
V	51	45	He	106.322	2.912	226983	0.58	100	106.3	89.6	110.4	
Cr	52	45	He	106.220	3.010	325586	0.39	100	106.2	89.6	110.4	
Mn	55	45	He	107.349	2.642	97297	0.19	100	107.3	89.6	110.4	
Fe	56	45	He	2671.095	2.795	6102790	0.78	2500	106.8	89.6	110.4	
Co	59	45	He	106.556	2.647	686407	0.45	100	106.6	89.6	110.4	
Ni	60	45	He	108.647	2.369	215049	0.33	100	108.6	89.6	110.4	
Cu	63	45	He	108.681	2.187	630929	0.60	100	108.7	89.6	110.4	
Zn	66	115	He	105.540	1.401	64955	0.37	100	105.5	89.6	110.4	
As	75	115	He	96.686	1.510	34399	0.24	100	96.7	89.6	110.4	
Se	78	72	H2	107.342	8.166	52772	2.66	100	107.3	89.6	110.4	
Se	78	115	He	106.174	2.958	1089	1.67	100	106.2	89.6	110.4	
Sr	88	115	NoGas	102.481	1.281	6812044	0.83	100	102.5	89.6	110.4	
Mo	95	115	NoGas	99.278	0.958	1371030	1.40	100	99.3	89.6	110.4	
Ag	107	115	NoGas	49.313	1.665	1772609	1.02	50	98.6	89.6	110.4	
Cd	111	115	He	104.137	1.362	89212	0.77	100	104.1	89.6	110.4	
Sn	118	115	He	52.798	1.188	66563	0.60	100	52.8	89.6	110.4	>+\- 10%
Sn	118	115	NoGas	50.422	0.755	1041151	0.16	100	50.4	89.6	110.4	>+\- 10%
Sb	121	115	NoGas	93.561	0.590	2820291	0.43	100	93.6	89.6	110.4	
Ba	137	165	NoGas	102.588	0.775	1014292	0.90	100	102.6	89.6	110.4	
Tl	205	165	NoGas	104.278	0.396	5633254	0.83	100	104.3	89.6	110.4	
Pb	208	165	NoGas	105.267	0.632	7704729	0.21	100	105.3	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	117092	1.37	115259	101.59	70	120	
Sc	45	H2	498590	5.61	497539	100.21	70	120	
Sc	45	He	29259	2.63	29688	98.55	70	120	
Sc	45	NoGas	3609088	0.57	3567710	101.16	70	120	
Ge	72	H2	152689	5.29	154208	99.02	70	120	
Ge	72	He	30083	2.66	30282	99.34	70	120	
Ge	72	NoGas	867767	1.50	872567	99.45	70	120	
In	115	H2	3008645	4.87	3044907	98.81	70	120	
In	115	He	224254	1.28	224982	99.68	70	120	
In	115	NoGas	5482874	0.72	5525169	99.23	70	120	
Tb	159	H2	5604230	5.54	5558678	100.82	70	120	
Tb	159	He	1334526	2.01	1315002	101.48	70	120	
Tb	159	NoGas	7423272	0.22	7249592	102.40	70	120	
Ho	165	H2	5183139	6.34	5171419	100.23	70	120	
Ho	165	He	1315500	1.93	1293090	101.73	70	120	
Ho	165	NoGas	6919543	0.59	6788564	101.93	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB 160520
Data File Name	017_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T10:04:03-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	6	NoGas	-0.002	-122.7	117	9.9	0.1	
B	11	45	NoGas	1.022	24.6	42001	1.9	8	
Na	23	45	He	-5.854	-10.1	22816	1.9	50	
Mg	24	45	He	-0.206	-81.3	81	26.1	20	
Al	27	45	He	1.494	47.9	230	10.1	10	
K	39	45	He	-6.633	-32.9	4945	3.7	40	
Ca	40	45	H2	-2.319	-41.3	69015	0.7	150	
Ti	47	45	He	0.001	9848.8	1	173.2	0.5	
V	51	45	He	0.006	170.1	72	26.6	0.4	
Cr	52	45	He	0.002	449.4	573	6.6	0.2	
Mn	55	45	He	-0.006	-136.3	50	13.3	0.3	
Fe	56	45	He	0.000	12489.7	2512	2.3	30	
Co	59	45	He	0.001	171.5	49	25.8	0.4	
Ni	60	45	He	-0.020	-9.9	164	1.2	0.4	
Cu	63	45	He	-0.120	-4.1	1693	1.6	0.4	
Zn	66	115	He	-0.367	-34.3	814	10.8	15	
As	75	115	He	0.007	171.6	8	52.7	0.2	
Se	78	72	H2	0.000	729.4	6	10.8	0.4	
Se	78	115	He	0.261	98.8	3	88.2	0.4	
Sr	88	115	NoGas	-0.002	-37.5	5618	1.8	0.1	
Mo	95	115	NoGas	0.002	218.5	163	43.4	0.3	
Ag	107	115	NoGas	0.002	98.8	120	54.6	0.1	
Cd	111	115	He	0.001	817.1	12	57.7	0.1	
Sn	118	115	He	-0.069	-14.8	210	7.9	0.1	
Sn	118	115	NoGas	-0.020	-22.8	3468	3.3	0.1	
Sb	121	115	NoGas	0.002	208.0	2600	5.7	0.5	
Ba	137	165	NoGas	-0.005	-99.0	207	24.4	0.4	
Tl	205	165	NoGas	0.004	36.3	440	18.6	0.2	
Pb	208	165	NoGas	-0.021	-8.0	3690	3.4	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	114433	2.23	115259	99.28	70	120	
Sc	45	H2	484687	4.89	497539	97.42	70	120	
Sc	45	He	28821	2.48	29688	97.08	70	120	
Sc	45	NoGas	3485321	0.46	3567710	97.69	70	120	
Ge	72	H2	148961	4.77	154208	96.60	70	120	
Ge	72	He	29547	2.48	30282	97.57	70	120	
Ge	72	NoGas	860284	0.91	872567	98.59	70	120	
In	115	H2	3033044	4.57	3044907	99.61	70	120	
In	115	He	222132	1.95	224982	98.73	70	120	
In	115	NoGas	5562179	1.20	5525169	100.67	70	120	
Tb	159	H2	5689981	5.47	5558678	102.36	70	120	
Tb	159	He	1318974	1.61	1315002	100.30	70	120	
Tb	159	NoGas	7543022	1.31	7249592	104.05	70	120	
Ho	165	H2	5345218	4.85	5171419	103.36	70	120	
Ho	165	He	1303711	1.39	1293090	100.82	70	120	
Ho	165	NoGas	7067440	1.19	6788564	104.11	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSAB 160520
Data File Name	020ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T10:26:06-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	NoGas	55.999	3.4	165102	0.9	60	
B	11	NoGas	-0.345	-5.9	31935	2.1	9.6	
Na	23	He	58619.592	2.2	13317916	0.1	60000	
Mg	24	He	52127.585	1.6	5283433	0.6	60000	
Al	27	He	47184.131	2.4	1034635	0.4	60000	
K	39	He	51489.829	1.2	2523812	1.0	60000	
Ca	40	H2	48523.463	4.1	132724159	1.4	60000	
Ti	47	He	1007.368	1.4	33411	0.7	1200	
V	51	He	55.767	3.7	102018	1.6	60	
Cr	52	He	53.964	3.5	141955	1.6	60	
Mn	55	He	56.816	3.7	44136	1.5	60	
Fe	56	He	50165.351	2.6	98161138	0.5	60000	
Co	59	He	55.061	2.4	303910	0.3	60	
Ni	60	He	108.422	1.9	183877	0.3	120	
Cu	63	He	54.646	3.0	272795	1.0	60	
Zn	66	He	111.893	3.0	56856	0.7	120	
As	75	He	51.753	2.2	15221	1.6	60	
Se	78	H2	54.883	5.5	22592	1.9	60	
Se	78	He	51.671	2.5	438	0.8	60	
Sr	88	NoGas	0.613	4.9	41934	3.0	6	
Mo	95	NoGas	1029.077	3.0	12859905	1.2	1260	
Ag	107	NoGas	92.582	3.3	3012009	1.9	120	
Cd	111	He	113.644	3.9	80434	0.9	120	
Sn	118	He	0.176	45.7	429	19.3	60	>+\- 20%
Sn	118	NoGas	0.223	4.7	7611	1.1	60	>+\- 20%
Sb	121	NoGas	49.205	2.8	1343453	1.1	60	
Ba	137	NoGas	50.856	2.3	507642	1.4	60	
Tl	205	NoGas	52.756	1.4	2876850	0.9	60	
Pb	208	NoGas	106.571	2.1	7873151	1.1	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	74977	3.06	115259	65.05	70	120	ISTD Failed
Sc	45	H2	438781	2.59	497539	88.19	70	120	
Sc	45	He	25066	2.17	29688	84.43	70	120	
Sc	45	NoGas	2944878	2.21	3567710	82.54	70	120	
Ge	72	H2	127627	3.55	154208	82.76	70	120	
Ge	72	He	25537	3.28	30282	84.33	70	120	
Ge	72	NoGas	768434	0.70	872567	88.07	70	120	
In	115	H2	2728642	3.91	3044907	89.61	70	120	
In	115	He	185400	2.97	224982	82.41	70	120	
In	115	NoGas	4963898	2.02	5525169	89.84	70	120	
Tb	159	H2	5626069	4.20	5558678	101.21	70	120	
Tb	159	He	1192908	2.73	1315002	90.72	70	120	
Tb	159	NoGas	7301424	1.73	7249592	100.71	70	120	
Ho	165	H2	5252516	4.06	5171419	101.57	70	120	
Ho	165	He	1195754	2.20	1293090	92.47	70	120	
Ho	165	NoGas	6985499	1.57	6788564	102.90	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA 160520
Data File Name	022ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T10:32:46-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	NoGas	0.059	39.0	220	27.3	0.1	
B	11	NoGas	-1.165	-21.7	27270	2.1	8	
Na	23	He	58887.126	4.7	12630962	1.2	60000	
Mg	24	He	51415.269	4.7	4919526	1.0	60000	
Al	27	He	46655.630	5.1	965728	0.2	60000	
K	39	He	51010.824	4.8	2360161	0.8	60000	
Ca	40	H2	48487.155	5.7	122994617	0.6	60000	
Ti	47	He	1006.928	4.2	31533	1.4	1200	
V	51	He	0.050	10.4	137	6.5	0.2	
Cr	52	He	0.625	8.7	2009	1.5	30	
Mn	55	He	2.245	6.3	1690	2.5	24	
Fe	56	He	50126.797	5.9	92566083	0.8	60000	
Co	59	He	0.134	9.9	732	5.7	5	
Ni	60	He	0.322	4.6	682	2.2	20	
Cu	63	He	0.395	9.6	3802	5.0	25	
Zn	66	He	2.394	1.4	1970	7.9	60	
As	75	He	0.223	16.8	67	14.4	0.4	
Se	78	H2	0.068	24.7	31	17.0	0.4	
Se	78	He	0.005	1326.2	0	173.2	0.4	
Sr	88	NoGas	0.575	3.4	38443	2.2	5	
Mo	95	NoGas	960.809	0.6	11627138	0.8	1200	
Ag	107	NoGas	0.122	9.0	3887	9.1	5	
Cd	111	He	0.160	16.0	118	20.0	0.5	
Sn	118	He	0.211	24.2	444	11.9	5	
Sn	118	NoGas	0.197	4.5	6908	2.6	5	
Sb	121	NoGas	0.540	4.4	16438	3.3	5	
Ba	137	NoGas	0.456	2.3	4677	2.3	1.5	
Tl	205	NoGas	0.044	9.4	2564	7.8	0.2	
Pb	208	NoGas	0.347	2.8	30025	1.6	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	64256	0.84	115259	55.75	70	120	ISTD Failed
Sc	45	H2	407423	5.11	497539	81.89	70	120	
Sc	45	He	23696	5.34	29688	79.82	70	120	
Sc	45	NoGas	2694394	0.23	3567710	75.52	70	120	
Ge	72	H2	118266	5.23	154208	76.69	70	120	
Ge	72	He	24965	5.98	30282	82.44	70	120	
Ge	72	NoGas	723764	1.04	872567	82.95	70	120	
In	115	H2	2632474	5.32	3044907	86.45	70	120	
In	115	He	177133	7.12	224982	78.73	70	120	
In	115	NoGas	4805059	0.76	5525169	86.97	70	120	
Tb	159	H2	5539865	5.01	5558678	99.66	70	120	
Tb	159	He	1154042	6.01	1315002	87.76	70	120	
Tb	159	NoGas	7207618	0.74	7249592	99.42	70	120	
Ho	165	H2	5199498	4.45	5171419	100.54	70	120	
Ho	165	He	1162083	6.21	1293090	89.87	70	120	
Ho	165	NoGas	6806686	0.86	6788564	100.27	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 160520
Data File Name	033_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T11:34:22-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	6	NoGas	49.795	1.887	182196	0.38	50	99.6	89.6	110.4	
B	11	45	NoGas	40.751	2.170	154449	1.50	50	81.5	89.6	110.4	>+/- 10%
Na	23	45	He	1310.012	8.032	354025	1.06	1250	104.8	89.6	110.4	
Mg	24	45	He	2537.668	7.850	286103	1.92	2500	101.5	89.6	110.4	
Al	27	45	He	978.832	7.977	24051	2.18	1000	97.9	89.6	110.4	
K	39	45	He	1011.592	9.316	60150	2.00	1000	101.2	89.6	110.4	
Ca	40	45	H2	2337.741	6.375	7668310	1.52	2500	93.5	89.6	110.4	
Ti	47	45	He	49.934	6.713	1843	1.19	50	99.9	89.6	110.4	
V	51	45	He	51.102	8.467	103950	2.08	50	102.2	89.6	110.4	
Cr	52	45	He	51.256	8.762	149918	2.06	50	102.5	89.6	110.4	
Mn	55	45	He	52.529	6.285	45423	0.81	50	105.1	89.6	110.4	
Fe	56	45	He	1033.151	7.862	2250481	1.18	1000	103.3	89.6	110.4	
Co	59	45	He	51.912	7.371	318700	0.92	50	103.8	89.6	110.4	
Ni	60	45	He	51.378	8.371	96967	1.67	50	102.8	89.6	110.4	
Cu	63	45	He	51.582	7.982	286493	1.61	50	103.2	89.6	110.4	
Zn	66	115	He	49.917	8.403	30502	2.18	50	99.8	89.6	110.4	
As	75	115	He	49.095	6.953	17049	1.04	50	98.2	89.6	110.4	
Se	78	72	H2	49.071	5.603	24459	0.49	50	98.1	89.6	110.4	
Se	78	115	He	48.165	11.212	482	5.52	50	96.3	89.6	110.4	
Sr	88	115	NoGas	47.056	2.522	3146828	0.53	50	94.1	89.6	110.4	
Mo	95	115	NoGas	46.331	3.088	643048	0.80	50	92.7	89.6	110.4	
Ag	107	115	NoGas	23.230	2.864	839259	0.87	25	92.9	89.6	110.4	
Cd	111	115	He	50.125	8.046	41891	2.01	50	100.2	89.6	110.4	
Sn	118	115	He	50.102	7.100	61650	1.01	50	100.2	89.6	110.4	
Sn	118	115	NoGas	47.422	3.129	984281	0.72	50	94.8	89.6	110.4	
Sb	121	115	NoGas	49.057	4.561	1486938	2.17	50	98.1	89.6	110.4	
Ba	137	165	NoGas	47.030	0.234	491281	0.39	50	94.1	89.6	110.4	
Tl	205	165	NoGas	49.586	1.877	2829416	1.91	50	99.2	89.6	110.4	
Pb	208	165	NoGas	49.201	1.190	3806631	1.35	50	98.4	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	93005	2.18	115259	80.69	70	120	
Sc	45	H2	521577	4.99	497539	104.83	70	120	
Sc	45	He	27967	7.06	29688	94.20	70	120	
Sc	45	NoGas	3279422	1.88	3567710	91.92	70	120	
Ge	72	H2	154628	5.04	154208	100.27	70	120	
Ge	72	He	29383	6.23	30282	97.03	70	120	
Ge	72	NoGas	846543	1.27	872567	97.02	70	120	
In	115	H2	3260185	5.08	3044907	107.07	70	120	
In	115	He	219449	6.21	224982	97.54	70	120	
In	115	NoGas	5512558	2.36	5525169	99.77	70	120	
Tb	159	H2	6383725	4.42	5558678	114.84	70	120	
Tb	159	He	1319902	5.88	1315002	100.37	70	120	
Tb	159	NoGas	7662810	0.90	7249592	105.70	70	120	
Ho	165	H2	5921081	4.34	5171419	114.50	70	120	
Ho	165	He	1312779	6.04	1293090	101.52	70	120	
Ho	165	NoGas	7308598	0.29	6788564	107.66	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 160520
Data File Name	035_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T11:41:16-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	6	NoGas	-0.010	-51.0	60	28.9	0.1	
B	11	45	NoGas	-1.836	-29.4	30242	2.1	8	
Na	23	45	He	22.319	4.7	27350	1.4	50	
Mg	24	45	He	0.617	69.2	160	28.0	20	
Al	27	45	He	-0.279	-194.1	168	8.0	10	
K	39	45	He	-6.866	-91.0	4467	5.1	40	
Ca	40	45	H2	-2.748	-24.8	64541	1.3	150	
Ti	47	45	He	0.068	2.8	3	0.0	0.5	
V	51	45	He	0.003	461.2	61	46.4	0.4	
Cr	52	45	He	0.052	32.8	654	8.3	0.2	
Mn	55	45	He	-0.001	-1834.9	50	29.1	0.3	
Fe	56	45	He	0.352	29.6	2994	5.2	30	
Co	59	45	He	-0.002	-78.8	27	33.1	0.4	
Ni	60	45	He	-0.033	-18.1	127	9.5	0.4	
Cu	63	45	He	-0.139	-7.2	1437	3.2	0.4	
Zn	66	115	He	-0.275	-22.6	802	5.2	15	
As	75	115	He	0.020	70.3	11	39.8	0.2	
Se	78	72	H2	0.021	1.9	15	4.6	0.4	
Se	78	115	He	0.144	42.0	2	34.6	0.4	
Sr	88	115	NoGas	-0.005	-52.4	5381	4.1	0.1	
Mo	95	115	NoGas	0.056	8.2	923	6.3	0.3	
Ag	107	115	NoGas	0.004	32.1	183	22.7	0.1	
Cd	111	115	He	-0.006	-22.4	5	21.7	0.1	
Sn	118	115	He	-0.037	-106.9	230	20.4	0.1	
Sn	118	115	NoGas	0.013	64.6	4168	5.0	0.1	
Sb	121	115	NoGas	0.265	2.4	10650	0.9	0.5	
Ba	137	165	NoGas	-0.001	-177.1	253	8.2	0.4	
Tl	205	165	NoGas	0.021	7.9	1430	6.1	0.2	
Pb	208	165	NoGas	-0.016	-14.7	4170	1.9	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	85732	2.86	115259	74.38	70	120	
Sc	45	H2	461696	4.25	497539	92.80	70	120	
Sc	45	He	26131	1.94	29688	88.02	70	120	
Sc	45	NoGas	3177411	4.09	3567710	89.06	70	120	
Ge	72	H2	137673	3.47	154208	89.28	70	120	
Ge	72	He	27741	2.44	30282	91.61	70	120	
Ge	72	NoGas	830005	2.29	872567	95.12	70	120	
In	115	H2	3060539	2.90	3044907	100.51	70	120	
In	115	He	205162	0.90	224982	91.19	70	120	
In	115	NoGas	5573509	0.94	5525169	100.87	70	120	
Tb	159	H2	6026921	4.30	5558678	108.42	70	120	
Tb	159	He	1252260	0.38	1315002	95.23	70	120	
Tb	159	NoGas	7774692	2.57	7249592	107.24	70	120	
Ho	165	H2	5638955	4.40	5171419	109.04	70	120	
Ho	165	He	1248085	0.97	1293090	96.52	70	120	
Ho	165	NoGas	7352213	2.53	6788564	108.30	70	120	

METALS
Raw Data

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
6020A	ARSENIC (AS) (DISSOLVED)	Not detected	5.0	0.31	ug/L	05/19/16	05/20/16	#62A14-160519B-AZ34904
6020A	CHROMIUM (CR) (DISSOLV	Not detected	10.0	0.45	ug/L	05/19/16	05/20/16	#62A14-160519B-AZ34904
6020A	MANGANESE (MN) (DISSOL	Not detected	3.5	0.30	ug/L	05/19/16	05/20/16	#62A14-160519B-AZ34904

Metals SC-Blank-REG MDLs
Printed: 05/22/16 10:10:40 AM

Sample Report

Sample Table

Sample Name	160519B BLK 3015F
Data File Name	027SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T11:06:13-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	6	NoGas	-0.005	-0.006	-45.00	80	12.50	10000	
B	11	45	NoGas	-1.156	-1.284	-12.19	32075	1.21	10000	
Na	23	45	He	36.899	40.999	11.73	30241	0.52	1000000	
Mg	24	45	He	2.087	2.318	24.89	311	20.39	1000000	
Al	27	45	He	1.215	1.350	94.46	199	15.93	1000000	
K	39	45	He	-14.308	-15.897	-47.69	4013	5.10	500000	
Ca	40	45	H2	4.435	4.927	20.78	81093	0.66	500000	
Ti	47	45	He	0.202	0.225	32.97	8	24.71	10000	
V	51	45	He	-0.015	-0.016	-89.13	27	94.38	10000	
Cr	52	45	He	0.053	0.059	52.71	644	7.75	10000	
Mn	55	45	He	0.047	0.053	67.56	87	25.22	50000	
Fe	56	45	He	2.090	2.322	4.01	6426	1.76	1000000	
Co	59	45	He	0.012	0.013	19.54	103	8.54	10000	
Ni	60	45	He	0.015	0.017	302.65	210	40.81	10000	
Cu	63	45	He	0.775	0.862	15.49	6041	6.38	10000	
Zn	66	115	He	0.281	0.312	17.38	1072	2.89	50000	
As	75	115	He	0.006	0.007	16.11	7	8.66	2000	
Se	78	72	H2	0.010	0.012	28.84	10	11.86	10000	
Se	78	115	He	0.038	0.042	323.42	1	173.21	10000	
Sr	88	115	NoGas	-0.040	-0.044	-8.19	2977	6.73	50000	
Mo	95	115	NoGas	0.063	0.070	24.38	987	20.78	10000	
Ag	107	115	NoGas	0.006	0.007	29.71	277	24.07	5000	
Cd	111	115	He	0.012	0.013	146.24	19	68.04	10000	
Sn	118	115	He	-0.009	-0.010	-296.49	252	8.60	10000	
Sn	118	115	NoGas	0.045	0.050	14.70	4678	3.90	10000	
Sb	121	115	NoGas	0.155	0.172	0.68	7055	1.43	10000	
Ba	137	165	NoGas	0.016	0.018	28.05	427	13.33	50000	
Tl	205	165	NoGas	0.009	0.010	26.24	740	19.91	5000	
Pb	208	165	NoGas	0.034	0.038	12.85	7851	3.57	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	90500	1.84	115259	78.52	70	120	
Sc	45	H2	439321	2.84	497539	88.30	70	120	
Sc	45	He	25677	3.76	29688	86.49	70	120	
Sc	45	NoGas	3166950	1.85	3567710	88.77	70	120	
Ge	72	H2	127978	4.00	154208	82.99	70	120	
Ge	72	He	26807	5.74	30282	88.52	70	120	
Ge	72	NoGas	798803	1.73	872567	91.55	70	120	
In	115	H2	2894809	2.87	3044907	95.07	70	120	
In	115	He	198252	4.18	224982	88.12	70	120	
In	115	NoGas	5398163	1.11	5525169	97.70	70	120	
Tb	159	H2	5716680	2.45	5558678	102.84	70	120	
Tb	159	He	1208691	4.42	1315002	91.92	70	120	
Tb	159	NoGas	7582931	2.21	7249592	104.60	70	120	
Ho	165	H2	5377023	3.07	5171419	103.98	70	120	
Ho	165	He	1205454	4.83	1293090	93.22	70	120	
Ho	165	NoGas	7124847	2.28	6788564	104.95	70	120	

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	ARSENIC (AS) (DISSOLVED)	50.0	42.8	85.6	80-120	05/19/16	05/20/16	#62A14-160519B-AZ34904
EPA 6020A	CHROMIUM (CR) (DISSOLVED)	50.0	46.9	93.8	80-120	05/19/16	05/20/16	#62A14-160519B-AZ34904
EPA 6020A	MANGANESE (MN) (DISSOLVED	50.0	46.0	92.0	80-120	05/19/16	05/20/16	#62A14-160519B-AZ34904

Comments: _____

Sample Report

Sample Table

Sample Name	160519B LCS 3015F
Data File Name	030SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T11:16:31-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	6	NoGas	8.071	8.968	2.27	30993	1.91	10000	
B	11	45	NoGas	31.820	35.355	0.68	131345	0.51	10000	
Na	23	45	He	4253.550	4726.166	0.71	1079643	0.27	1000000	
Mg	24	45	He	4124.386	4582.651	1.05	457780	0.77	1000000	
Al	27	45	He	325.783	361.981	1.90	8004	2.02	1000000	
K	39	45	He	816.389	907.099	1.07	48792	0.51	500000	
Ca	40	45	H2	3894.114	4326.794	4.85	12407916	1.17	500000	
Ti	47	45	He	38.951	43.279	4.50	1416	4.97	10000	
V	51	45	He	42.735	47.483	1.09	85631	0.69	10000	
Cr	52	45	He	42.248	46.942	1.18	121825	0.96	10000	
Mn	55	45	He	41.362	45.958	0.53	35205	0.74	50000	
Fe	56	45	He	168.205	186.895	0.41	362801	0.07	1000000	
Co	59	45	He	42.123	46.803	1.39	254588	0.96	10000	
Ni	60	45	He	41.179	45.754	1.10	76585	0.67	10000	
Cu	63	45	He	40.936	45.484	0.30	224351	0.18	10000	
Zn	66	115	He	77.723	86.359	2.69	45065	0.99	50000	
As	75	115	He	38.484	42.760	3.03	12828	1.21	2000	
Se	78	72	H2	38.564	42.849	5.50	18506	1.25	10000	
Se	78	115	He	37.761	41.957	6.23	363	4.43	10000	
Sr	88	115	NoGas	40.957	45.508	2.01	2742403	1.70	50000	
Mo	95	115	NoGas	38.522	42.802	0.62	535277	0.41	10000	
Ag	107	115	NoGas	15.140	16.822	1.18	547603	1.12	5000	
Cd	111	115	He	8.048	8.943	2.25	6469	1.25	10000	
Sn	118	115	He	42.173	46.859	2.49	49858	0.98	10000	
Sn	118	115	NoGas	39.333	43.703	0.83	817950	0.41	10000	
Sb	121	115	NoGas	34.900	38.777	0.59	1059979	0.20	10000	
Ba	137	165	NoGas	39.049	43.388	0.95	401316	0.71	50000	
Tl	205	165	NoGas	41.097	45.664	1.54	2306903	1.31	5000	
Pb	208	165	NoGas	40.687	45.208	1.80	3097548	1.65	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	97308	0.72	115259	84.43	70	120	
Sc	45	H2	508392	3.91	497539	102.18	70	120	
Sc	45	He	27438	0.48	29688	92.42	70	120	
Sc	45	NoGas	3348748	0.77	3567710	93.86	70	120	
Ge	72	H2	148808	4.21	154208	96.50	70	120	
Ge	72	He	28007	1.84	30282	92.49	70	120	
Ge	72	NoGas	836335	1.18	872567	95.85	70	120	
In	115	H2	3189136	4.79	3044907	104.74	70	120	
In	115	He	210100	1.84	224982	93.39	70	120	
In	115	NoGas	5516151	0.41	5525169	99.84	70	120	
Tb	159	H2	6067140	4.64	5558678	109.15	70	120	
Tb	159	He	1269044	2.28	1315002	96.51	70	120	
Tb	159	NoGas	7542190	0.40	7249592	104.04	70	120	
Ho	165	H2	5738129	5.02	5171419	110.96	70	120	
Ho	165	He	1260220	1.91	1293090	97.46	70	120	
Ho	165	NoGas	7189784	0.28	6788564	105.91	70	120	

Matrix Spike Recoveries

METALS

APPL ID: **160519W-34904 MS - 207674**

Sample ID: AZ34904

Client ID: N019571-006/MW-54-195-Q216

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	ARSENIC (AS) (DISSO	50.0	0.87	51.1	51.2	100	101	0.2	20	80-120	05/19/16	05/19/16	05/19/16	05/19/16	207674	AZ34904
EPA 6020A	CHROMIUM (CR) (DIS	50.0	ND	49.7	48.1	99.4	96.2	3.3	20	80-120	05/19/16	05/19/16	05/19/16	05/19/16	207674	AZ34904
EPA 6020A	MANGANESE (MN) (DI	50.0	185	251	239	132 #	108	4.9	20	80-120	05/19/16	05/19/16	05/19/16	05/19/16	207674	AZ34904

= Recovery is outside QC limits.

Comments: _____

Sample Report

Sample Table

Sample Name	AZ34904W02 MS DF10
Data File Name	078SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:55:49-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.768	8.534	12.48	6501	11.83	10000	
B	11	45	NoGas	216.067	2400.744	1.36	1159705	1.64	10000	
Na	23	45	He	364080.146	4045334.960	4.89	123559413	0.57	1000000	
Mg	24	45	He	853.931	9488.127	3.92	127475	1.07	1000000	
Al	27	45	He	40.633	451.480	12.17	1551	6.94	1000000	
K	39	45	He	2830.953	31455.037	4.43	214074	0.38	500000	
Ca	40	45	H2	12272.062	136356.246	6.27	33903083	1.26	500000	
Ti	47	45	He	5.405	60.055	8.92	253	5.74	10000	
V	51	45	He	4.543	50.483	8.98	11554	4.70	10000	
Cr	52	45	He	4.474	49.709	2.11	16484	3.01	10000	
Mn	55	45	He	22.625	251.389	3.81	24611	1.03	50000	
Fe	56	45	He	23.855	265.053	5.32	68053	0.76	1000000	
Co	59	45	He	4.478	49.754	4.10	33239	0.39	10000	
Ni	60	45	He	4.342	48.245	8.22	9905	3.88	10000	
Cu	63	45	He	4.352	48.356	3.82	30089	1.21	10000	
Zn	66	115	He	8.272	91.912	7.91	6381	4.63	50000	
As	75	115	He	4.601	51.121	4.28	1808	3.51	2000	
Se	78	72	H2	4.643	51.589	8.09	2108	2.81	10000	
Se	78	115	He	4.174	46.375	63.43	52	63.29	10000	
Sr	88	115	NoGas	285.904	3176.707	1.12	20787145	0.76	50000	
Mo	95	115	NoGas	13.931	154.794	0.60	204233	1.05	10000	
Ag	107	115	NoGas	1.583	17.587	2.02	60723	3.12	5000	
Cd	111	115	He	0.890	9.890	1.39	821	2.44	10000	
Sn	118	115	He	4.510	50.110	1.21	6113	1.97	10000	
Sn	118	115	NoGas	4.325	48.055	1.27	96111	1.76	10000	
Sb	121	115	NoGas	4.253	47.258	0.71	144216	1.67	10000	
Ba	137	165	NoGas	7.591	84.341	1.04	79994	0.70	50000	
Tl	205	165	NoGas	3.883	43.144	0.50	226078	0.94	5000	
Pb	208	165	NoGas	3.873	43.038	0.85	315233	1.56	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	190098	1.69	236257	80.46	70	120	
Sc	45	H2	474822	5.04	485596	97.78	70	120	
Sc	45	He	32446	4.48	32391	100.17	70	120	
Sc	45	NoGas	3617903	1.33	3469736	104.27	70	120	
Ge	72	H2	134671	5.87	144823	92.99	70	120	
Ge	72	He	31155	1.74	31735	98.17	70	120	
Ge	72	NoGas	849813	1.04	850290	99.94	70	120	
In	115	H2	2967724	3.20	3158297	93.97	70	120	
In	115	He	221903	3.10	233876	94.88	70	120	
In	115	NoGas	5417031	1.44	5452775	99.34	70	120	
Tb	159	H2	5886847	4.25	6131794	96.01	70	120	
Tb	159	He	1230113	3.15	1276461	96.37	70	120	
Tb	159	NoGas	7197916	0.94	7146294	100.72	70	120	
Ho	165	H2	5544038	4.64	5782470	95.88	70	120	
Ho	165	He	1219412	3.11	1264936	96.40	70	120	
Ho	165	NoGas	6815295	1.10	6686360	101.93	70	120	

Sample Report

Sample Table

Sample Name	AZ34904W02 MSD DF10
Data File Name	079SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:59:10-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79717
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	0.769	8.547	2.14	6575	2.31	10000	
B	11	45	NoGas	205.402	2282.246	1.86	1115962	0.36	10000	
Na	23	45	He	350722.296	3896914.396	2.01	120771222	0.41	1000000	
Mg	24	45	He	824.484	9160.938	2.40	124842	0.65	1000000	
Al	27	45	He	37.810	420.110	5.74	1481	3.28	1000000	
K	39	45	He	2729.643	30329.371	1.49	209642	0.51	500000	
Ca	40	45	H2	11775.753	130841.701	7.03	33156331	2.35	500000	
Ti	47	45	He	4.450	49.440	16.74	212	16.79	10000	
V	51	45	He	4.428	49.195	2.51	11443	3.37	10000	
Cr	52	45	He	4.330	48.107	2.70	16185	0.91	10000	
Mn	55	45	He	21.468	238.535	2.56	23691	1.21	50000	
Fe	56	45	He	23.258	258.426	1.92	67420	0.52	1000000	
Co	59	45	He	4.297	47.743	1.76	32361	0.32	10000	
Ni	60	45	He	4.106	45.623	5.29	9517	3.74	10000	
Cu	63	45	He	4.125	45.829	0.63	29013	1.28	10000	
Zn	66	115	He	8.506	94.510	2.14	6567	1.13	50000	
As	75	115	He	4.611	51.229	1.91	1819	0.96	2000	
Se	78	72	H2	4.446	49.404	8.19	2041	2.83	10000	
Se	78	115	He	4.297	47.745	12.00	53	11.78	10000	
Sr	88	115	NoGas	277.524	3083.596	1.33	20317651	2.33	50000	
Mo	95	115	NoGas	13.425	149.168	0.98	198168	2.04	10000	
Ag	107	115	NoGas	1.529	16.984	0.22	59034	0.89	5000	
Cd	111	115	He	0.842	9.355	3.08	779	1.94	10000	
Sn	118	115	He	4.576	50.846	0.37	6223	1.61	10000	
Sn	118	115	NoGas	4.197	46.635	0.73	93986	1.01	10000	
Sb	121	115	NoGas	4.100	45.558	0.66	140049	1.71	10000	
Ba	137	165	NoGas	7.385	82.059	2.37	79026	2.39	50000	
Tl	205	165	NoGas	3.741	41.570	0.71	221153	1.21	5000	
Pb	208	165	NoGas	3.705	41.164	1.20	306355	0.52	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	196939	1.62	236257	83.36	70	120	
Sc	45	H2	483941	4.70	485596	99.66	70	120	
Sc	45	He	32881	1.75	32391	101.52	70	120	
Sc	45	NoGas	3654156	1.66	3469736	105.32	70	120	
Ge	72	H2	136151	5.36	144823	94.01	70	120	
Ge	72	He	31331	0.79	31735	98.73	70	120	
Ge	72	NoGas	862952	0.80	850290	101.49	70	120	
In	115	H2	2983125	4.24	3158297	94.45	70	120	
In	115	He	222676	1.80	233876	95.21	70	120	
In	115	NoGas	5453583	1.09	5452775	100.01	70	120	
Tb	159	H2	5919154	4.11	6131794	96.53	70	120	
Tb	159	He	1235498	1.62	1276461	96.79	70	120	
Tb	159	NoGas	7252520	0.99	7146294	101.49	70	120	
Ho	165	H2	5542060	3.88	5782470	95.84	70	120	
Ho	165	He	1225624	1.40	1264936	96.89	70	120	
Ho	165	NoGas	6919030	1.36	6686360	103.48	70	120	

US EPA Tune Check Sample Report

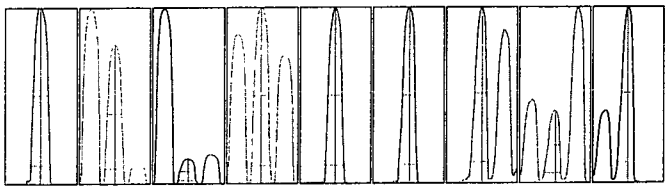
Batch Folder C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Report Comment C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
Instrument Name G3281A JP12101628

[NoGas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
9	649323	0.54	5.00	
24	2408282	0.75	5.00	
25	334366	0.23	5.00	
26	391239	0.17	5.00	
59	4713681	0.30	5.00	
115	6804404	0.44	5.00	
206	1461670	0.97	5.00	
207	1280734	0.67	5.00	
208	3024230	0.60	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	645006	652626	653134	648804	647043
24	2398636	2412430	2392906	2437901	2399535
25	333751	335061	334968	334709	333340
26	390240	391028	391546	391969	391412
59	4706483	4722936	4724193	4722592	4692199
115	6820366	6846947	6800380	6779519	6774808
206	1453968	1462661	1484221	1461345	1446156
207	1278746	1279242	1295574	1274305	1275802
208	2992863	3034639	3027407	3038650	3027591

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
9	100682	9.00	8.9 - 9.1		0.777	0.900	
24	386028	24.00	23.9 - 24.1		0.772	0.900	
25	53302	25.00	24.9 - 25.1		0.751	0.900	
26	62373	25.95	25.9 - 26.1		0.791	0.900	
59	781782	59.00	58.9 - 59.1		0.762	0.900	
115	1196726	115.05	114.9 - 115.1		0.749	0.900	
206	266263	206.05	205.9 - 206.1		0.748	0.900	
207	231675	207.05	206.9 - 207.1		0.718	0.900	
208	563451	208.00	207.9 - 208.1		0.725	0.900	

X% = 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Carrier Gas	0.70	L/min			
RF Matching	2.70	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

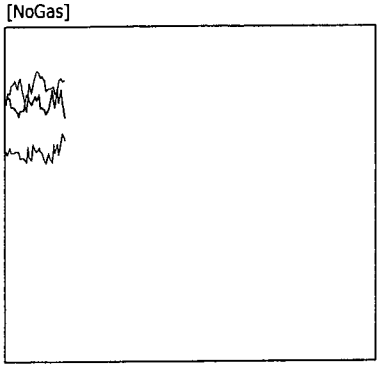
ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	10.4	V			
Extract 2	-195.0	V	Cell Entrance	-30	V			
Omega Bias	-90	V	Cell Exit	-50	V			
Deflect	13.8	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	120	V			
Energy Discrimination	5.0	V						

Current Signal

[NoGas]



Mass	Range	Count	Avg. Count	RSD [%]
7	5000	3308	3122.5	3.46
59	10000	8404	8219.8	3.37
89	20000	13658	12962.1	2.96
140	20000	12914	12812.5	3.76
205	10000	7289	7701.9	3.03
156/140	1	0.689 %	0.755 %	10.40
70/140	10	4.523 %	4.731 %	7.77
115	2000	1291	1292.2	3.29
165	1000	380	415.5	7.94
Integration Time [sec]		0.10		

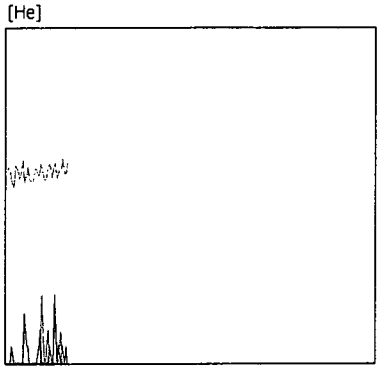
## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	10.4	V
Extract 2	-195.0	V	Cell Entrance	-30	V
Omega Bias	-90	V	Cell Exit	-50	V
Deflect	13.8	V			

## Cell Parameters ##					
Use Gas	false		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-8.0	V
H2 Flow	0.0	mL/min	OctP RF	120	V
Energy Discrimination	5.0	V			

Meters					
IF/BK Press	2.32E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.64E-4	Pa	Reflected Power	4	W
Forward Power	1549	W			

Current Signal

[He]



Mass	Range	Count	Avg. Count	RSD [%]
59	2000	1196	1134.4	4.03
89	1000	495	445.9	5.80
140	5000	1798	1898.0	4.96
205	5000	2628	2626.7	4.26
156/140	1	0.222 %	0.247 %	63.42
75	20	0	0.5	189.30
78	20	0	0.2	353.29
Integration Time [sec]		0.10		

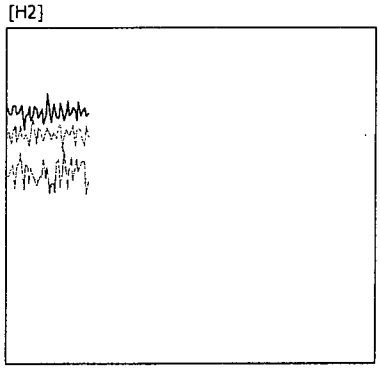
## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	10.4	V
Extract 2	-195.0	V	Cell Entrance	-40	V
Omega Bias	-90	V	Cell Exit	-60	V
Deflect	0.2	V			

## Cell Parameters ##					
Use Gas	true		3rd Gas Flow	0	%
He Flow	5.3	mL/min	OctP Bias	-19.0	V
H2 Flow	0.0	mL/min	OctP RF	120	V
Energy Discrimination	5.0	V			

Meters					
IF/BK Press	2.34E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	2.92E-4	Pa	Reflected Power	4	W
Forward Power	1552	W			

Current Signal

[H2]



Mass	Range	Count	Avg. Count	RSD [%]
59	1000	540	565.3	6.39
89	10000	6703	6824.0	3.33
140	5000	2763	2820.4	3.93
205	10000	7472	7492.8	2.70
56	10000	3789	3944.7	6.05
78	20	0	0.6	152.42
80	100	74	58.6	18.29
Integration Time [sec]		0.10		

## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	10.4	V
Extract 2	-195.0	V	Cell Entrance	-30	V
Omega Bias	-90	V	Cell Exit	-60	V
Deflect	-1.0	V			
## Cell Parameters ##					
Use Gas	true		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-18.0	V
H2 Flow	6.0	mL/min	OctP RF	120	V
Energy Discrimination	3.0	V			

Meters					
IF/BK Press	2.39E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.18E-3	Pa	Reflected Power	4	W
Forward Power	1549	W			

US EPA Tune Check Sample Report

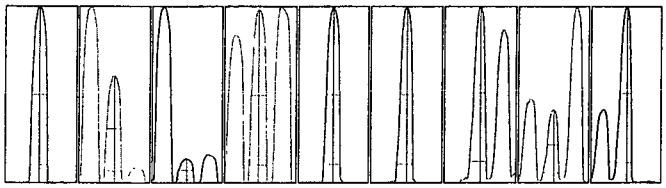
Batch Folder C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Report Comment C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xlbx
Instrument Name G3281A JP12101628

[NoGas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
9	482835	1.28	5.00	
24	2346296	0.93	5.00	
25	320270	0.69	5.00	
26	372185	0.85	5.00	
59	4752956	0.88	5.00	
115	6867977	0.62	5.00	
206	1448400	0.98	5.00	
207	1258028	0.85	5.00	
208	2968154	0.85	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	490392	488008	481601	476319	477855
24	2369612	2346252	2361555	2341143	2312919
25	322800	322259	319687	317576	319030
26	377117	373520	370172	369567	370549
59	4782531	4807702	4744001	4703730	4726818
115	6937377	6863464	6872587	6837310	6829148
206	1461752	1461973	1438003	1430186	1450086
207	1268502	1266170	1261091	1243014	1251363
208	2991480	2965638	2995681	2950022	2937948

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
9	76885	8.95	8.9 - 9.1		0.762	0.900	
24	390464	24.00	23.9 - 24.1		0.728	0.900	
25	51764	25.00	24.9 - 25.1		0.739	0.900	
26	61197	25.95	25.9 - 26.1		0.757	0.900	
59	816969	59.00	58.9 - 59.1		0.715	0.900	
115	1247029	115.05	114.9 - 115.1		0.696	0.900	
206	273690	206.05	205.9 - 206.1		0.722	0.900	
207	238426	207.05	206.9 - 207.1		0.695	0.900	
208	574531	208.05	207.9 - 208.1		0.697	0.900	

X% = 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Carrier Gas	0.70	L/min			
RF Matching	2.70	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

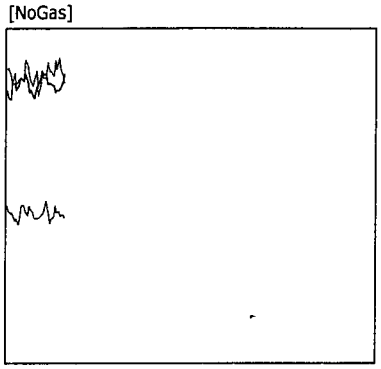
ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	11.1	V			
Extract 2	-195.0	V	Cell Entrance	-30	V			
Omega Bias	-75	V	Cell Exit	-50	V			
Deflect	14.0	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	140	V			
Energy Discrimination	5.0	V						

Current Signal

[NoGas]



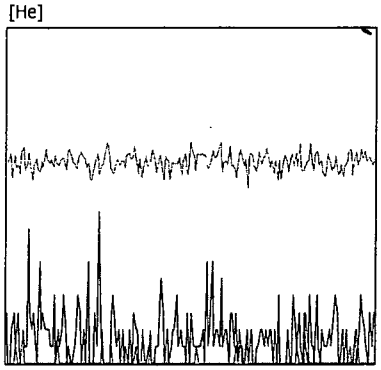
Mass	Range	Count	Avg. Count	RSD [%]
7	5000	2162	2210.3	3.88
59	10000	8359	8625.6	3.05
89	20000	13877	13906.0	2.36
140	20000	14294	13963.4	2.56
205	10000	8648	8316.4	2.76
156/140	1	0.742 %	0.663 %	16.91
70/140	5	4.401 %	4.456 %	5.41
115	500	262	255.1	8.13
165	500	255	250.5	7.01
Integration Time [sec]		0.10		

## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	11.1	V
Extract 2	-195.0	V	Cell Entrance	-30	V
Omega Bias	-75	V	Cell Exit	-50	V
Deflect	14.0	V			
## Cell Parameters ##					
Use Gas	false		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-8.0	V
H2 Flow	0.0	mL/min	OctP RF	140	V
Energy Discrimination	5.0	V			

Meters					
IF/BK Press	2.33E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.68E-4	Pa	Reflected Power	4	W
Forward Power	1550	W			

Current Signal

[He]



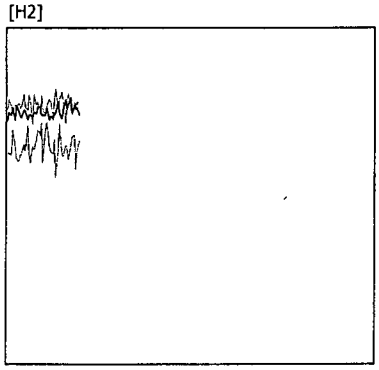
Mass	Range	Count	Avg. Count	RSD [%]
59	2000	1212	1196.7	4.38
89	1000	493	476.9	6.36
140	5000	2030	2094.5	3.64
205	5000	2939	2845.1	3.51
156/140	1	0.394 %	0.257 %	57.97
75	20	3	1.5	101.32
78	20	0	0.1	358.11
Integration Time [sec]		0.10		

## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	11.1	V
Extract 2	-195.0	V	Cell Entrance	-40	V
Omega Bias	-75	V	Cell Exit	-60	V
Deflect	1.0	V			
## Cell Parameters ##					
Use Gas	true		3rd Gas Flow	0	%
He Flow	5.3	mL/min	OctP Bias	-19.0	V
H2 Flow	0.0	mL/min	OctP RF	140	V
Energy Discrimination	5.0	V			

Meters					
IF/BK Press	2.34E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	3.11E-4	Pa	Reflected Power	4	W
Forward Power	1552	W			

Current Signal

[H2]



Mass	Range	Count	Avg. Count	RSD [%]
59	1000	664	645.0	6.15
89	10000	7790	7710.4	3.24
140	5000	3552	3381.3	3.53
205	10000	7438	7510.1	2.19
56	10000	5263	4794.0	3.50
78	20	1	0.2	235.40
80	50	32	32.3	21.18
Integration Time [sec]		0.10		

## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	11.1	V
Extract 2	-195.0	V	Cell Entrance	-30	V
Omega Bias	-75	V	Cell Exit	-60	V
Deflect	-1.4	V			
## Cell Parameters ##					
Use Gas	true		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-18.0	V
H2 Flow	6.0	mL/min	OctP RF	140	V
Energy Discrimination	3.0	V			

Meters					
IF/BK Press	2.39E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.14E-3	Pa	Reflected Power	4	W
Forward Power	1547	W			

ICP-MS STANDARDS Prep'd by: MM
Prep Date: 05/19/16
Expires: 1 week

Prep 1% HNO3/1.0%HCL
20 mL HNO3 / 2000 mL Di Water
prep: 5/16/16
20 mL HCL / 2000mL Di Water
prep: 5/16/16

Internal Standard Mix: Prep 05/02/16

Standard 4

Amount	STD	Manufacturer	Lot #
50 uL	CCV-A	ENV Express	1602141-36120
50 uL	CCV-B	ENV Express	1602140-36119
50 uL	CCV-C	ENV Express	1602139-36118

Prepared in 100 mL of 1% HNO3/1.0% HCL

Standard 3

Amount	STD
25 mL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 2

Amount	STD
500 uL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 1

Amount	STD
50 uL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICP-MS ICV

Amount	STD		
50 uL	QCS ICV A	CPI	15C180-34943
50 uL	QCS ICV B	CPI	15C181-34944

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICSA Prep: 05/19/16

1 mL	ICSA - DF2	O2Si	1086199

Prepared in 10 mL of 1% HNO3/1.0% HCL

ICSAB Prep: 05/19/16

1mL	ICSA - DF2	O2Si	1070255
100uL	INT - DF10	O2Si	1086199

Prepared in 10 mL of 1% HNO3/1.0% HCL

ICP-MS STANDARDS Prep'd by: MM
Prep Date: 05/20/16
Expires: 1 week

Prep 1% HNO3/1.0%HCL
20 mL HNO3 / 2000 mL Di Water
prep: 5/20/16
20 mL HCL / 2000mL Di Water
prep: 5/20/16

Internal Standard Mix: Prep 05/02/16

Standard 4

Amount	STD	Manufacturer	Lot #
50 uL	CCV-A	ENV Express	1602141-36120
50 uL	CCV-B	ENV Express	1602140-36119
50 uL	CCV-C	ENV Express	1602139-36118

Prepared in 100 mL of 1% HNO3/1.0% HCL

Standard 3

Amount	STD
25 mL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 2

Amount	STD
500 uL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 1

Amount	STD
50 uL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICP-MS ICV

Amount	STD		
50 uL	QCS ICV A	CPI	15C180-34943
50 uL	QCS ICV B	CPI	15C181-34944

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICSA Prep: 05/20/16

1 mL	ICSA - DF2	O2Si	1086199

Prepared in 10 mL of 1% HNO3/1.0% HCL

ICSAB Prep: 05/20/16

1mL	ICSA - DF2	O2Si	1070255
100uL	INT - DF10	O2Si	1086199

Prepared in 10 mL of 1% HNO3/1.0% HCL

Internal Standard Concentration

Amt	STD	Element	Vendor	Lot#	Final Conc. in Std	Expires
25 uL	1001 ug/mL	Li	BDH	F2-L102140-33279	200 ug/L	02/01/15
125 uL	1000 ug/mL	Sc	o2si	1074112-35159	500ug/L	10/21/16
125 uL	1000 ug/mL	Ge	CPI	15A047-35039	500ug/L	10/17/16
125 uL	1000 ug/mL	In	CPI	15B179-35042	500ug/L	10/17/16
125 uL	1000 ug/mL	Tb	CPI	15C302-35040	500ug/L	10/17/16
125 uL	1000 ug/mL	Ho	CPI	13G236-35041	500ug/L	10/17/16

Prep:	05/02/16 By: MM	Prep in - 1%HNO3/1.0%HCL: 1:1 prep: 5/1/16	in 250 mL
Expires:	05/31/16		

Metals Digestion Worksheet

Method Name 3015 Digestion (Field Filter) **Prep Method** M3015F **Set** 160519B **Units** mL

Spikes			
Spiked ID 1	LCSW LOT # 1087071-36207		
Spiked ID 2	LCSW LOT # 1087015-36208		
Spiked ID 3			
Spiked ID 4			
Spiked By	NM	Date:	05/19/16 12:35:00 PM
Witnessed By	MM	Date:	05/19/16 12:35:00 PM

Starting Temp:	33c
Ending Temp:	170c
Temperature Type:	Microwave
Sufficient Vol for Matrix QC:	Yes
End Date/Time	05/19/16 15:30

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
1	160519B Blk				45mL	50mL	05/19/16 12:35	equip: MultiWave
2	160519B LCS		90uL	1+2	45mL	50mL	05/19/16 12:35	equip: MultiWave
3	AZ34899	AZ34899W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
4	AZ34900	AZ34900W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
5	AZ34901	AZ34901W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
6	AZ34902	AZ34902W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
7	AZ34903	AZ34903W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
8	AZ34904	AZ34904W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
9	AZ34904 MS	AZ34904W02	90uL	1+2	45mL	50mL	05/19/16 12:35	equip: MultiWave
10	AZ34904 MSD	AZ34904W02	90uL	1+2	45mL	50mL	05/19/16 12:35	equip: MultiWave
11	AZ35060	AZ35060W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
12	AZ35061	AZ35061W03			45mL	50mL	05/19/16 12:35	equip: MultiWave
13	AZ35062	AZ35062W03			45mL	50mL	05/19/16 12:35	equip: MultiWave
14	AZ35063	AZ35063W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
15	AZ35064	AZ35064W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
16	AZ35065	AZ35065W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
17	AZ35066	AZ35066W02			45mL	50mL	05/19/16 12:35	equip: MultiWave

Solvent and Lot#
HNO3 MERCK 55280 6003

Sample COC Transfer	
Sample prep employee Initials	nm
Analyst's initials	MM
Date	5/19/16
Time	1600
Moved to	Metals

Technician's Initials	
Scanned By	nm
Sample Preparation	nm
Digestion	nm
Bring up to volume	nm
Modified	05/19/16 11:57:53 AM

Reviewed By: MM **Date:** 5/22/16

6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	19 May 2016	15:33	Calibration Blank 05/19/16		160520A (Ca	1.
2	19 May 2016	15:36	Standard 1 05/19/16		160520A (Ca	1.
3	19 May 2016	15:40	Standard 2 05/19/16		160520A (Ca	1.
4	19 May 2016	15:43	Standard 3 05/19/16		160520A (Ca	1.
5	19 May 2016	15:47	Standard 4 05/19/16		160520A (Ca	1.
6	19 May 2016	15:50	ICV 160519		160520A (Ca	1.
10	19 May 2016	16:32	ICB 160519		160520A (Ca	1.
11	19 May 2016	16:36	ICSA 160519		160520A (Ca	1.
12	19 May 2016	16:39	ICSAB 160519		160520A (Ca	1.
39	19 May 2016	19:18	CCV 160519		160520A (Ca	1.
40	19 May 2016	19:25	CCB 160519		160520A (Ca	1.
41	19 May 2016	19:35	AZ34899W02 DF10		160520A (Ca	10.
42	19 May 2016	19:38	AZ34900W02 DF10		160520A (Ca	10.
43	19 May 2016	19:42	AZ34901W02 DF10		160520A (Ca	10.
44	19 May 2016	19:45	AZ34902W02 DF10		160520A (Ca	10.
45	19 May 2016	19:48	AZ34903W02 DF10		160520A (Ca	10.
46	19 May 2016	19:52	AZ34904W02 DF10		160520A (Ca	10.
47	19 May 2016	19:55	AZ34904W02 MS DF10		160520A (Ca	10.
48	19 May 2016	19:59	AZ34904W02 MSD DF10		160520A (Ca	10.
49	19 May 2016	20:02	AZ34904W02-A DF10		160520A (Ca	10.
50	19 May 2016	20:09	AZ34904W02 DF50 DT		160520A (Ca	50.
55	19 May 2016	20:26	CCV 160519		160520A (Ca	1.
56	19 May 2016	20:33	CCB 160519		160520A (Ca	1.

6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
70	20 May 2016	08:58	Calibration Blank 05/20/16		160520A (Ca	1.
71	20 May 2016	09:02	Standard 1 05/20/16		160520A (Ca	1.
72	20 May 2016	09:05	Standard 2 05/20/16		160520A (Ca	1.
73	20 May 2016	09:09	Standard 3 05/20/16		160520A (Ca	1.
74	20 May 2016	09:12	Standard 4 05/20/16		160520A (Ca	1.
75	20 May 2016	09:15	ICV 160519		160520A (Ca	1.
79	20 May 2016	10:04	ICB 160520		160520A (Ca	1.
80	20 May 2016	10:26	ICSAB 160520		160520A (Ca	1.
81	20 May 2016	10:32	ICSA 160520		160520A (Ca	1.
82	20 May 2016	11:06	160519B BLK 3015F		160520A (Ca	1.
84	20 May 2016	11:16	160519B LCS 3015F		160520A (Ca	1.
86	20 May 2016	11:34	CCV 160520		160520A (Ca	1.
87	20 May 2016	11:41	CCB 160520		160520A (Ca	1.

INORGANIC ANALYSIS

APPL, INC.

INORGANIC ANALYSIS
QC Summary

APPL, INC.

WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	05/10/16	05/10/16	#2187-160510A-AZ34899

Wetlab SC-Blank-REG MDLs
Printed: 05/23/16 7:31:56 AM

Laboratory Control Spike Recovery

WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	10.00	9.95	99.5	90-110	05/10/16	05/10/16	#2187-160510A-AZ34899

Comments: _____

Matrix Spike Recoveries

WETLAB

APPL ID: **160510W-34899 MS - 207676**

Sample ID: AZ34899

Client ID: N019571-001/MW-54-85-EB-Q216

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 218.7	HEXAVALENT CHROM	10.00	0.16	10.8	11.0	106	108	1.8	20	90-110	05/10/16	05/10/16	05/10/16	05/10/16	207676	AZ34899

Comments: _____

INORGANIC ANALYSIS
Sample Data

APPL, INC.

Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19571 AZ GMP

Sample ID: N019571-001/MW-54-85-EB-Q216

Sample Collection Date: 04/29/16

APPL ID: AZ34899

ARF: 79717

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	0.16 J	0.50	0.090	ug/L	1	05/10/16	05/10/16

J = Estimated value.

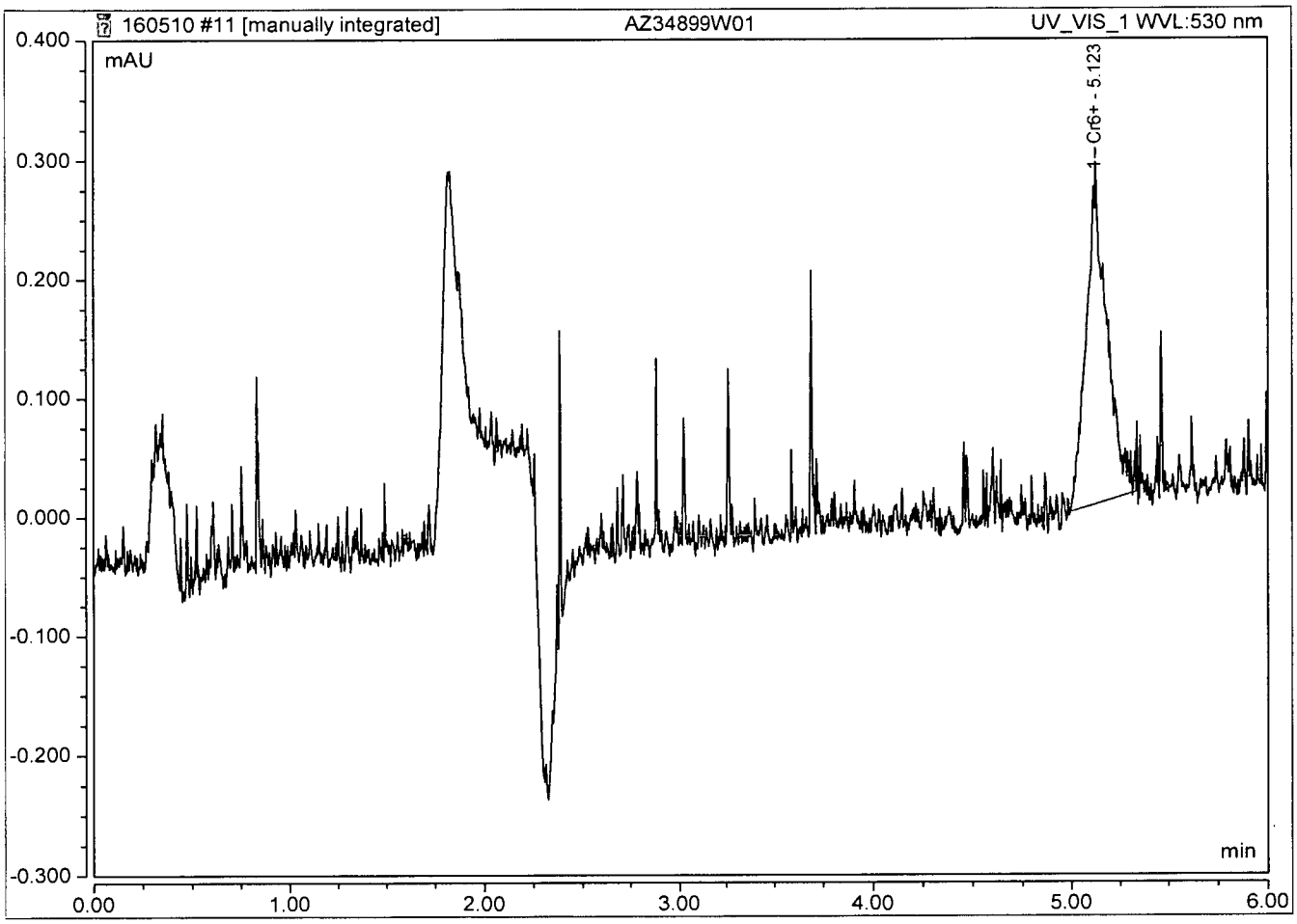
Printed: 05/23/16 7:31:52 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ34899W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 11:49**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.12	Cr6+	BMB*	0.035	0.287	0.1589
		TOTAL:		0.03	0.29	0.16



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19571 AZ GMP

Sample ID: N019571-002/MW-54-085-Q216

Sample Collection Date: 04/29/16

APPL ID: AZ34900

ARF: 79717

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

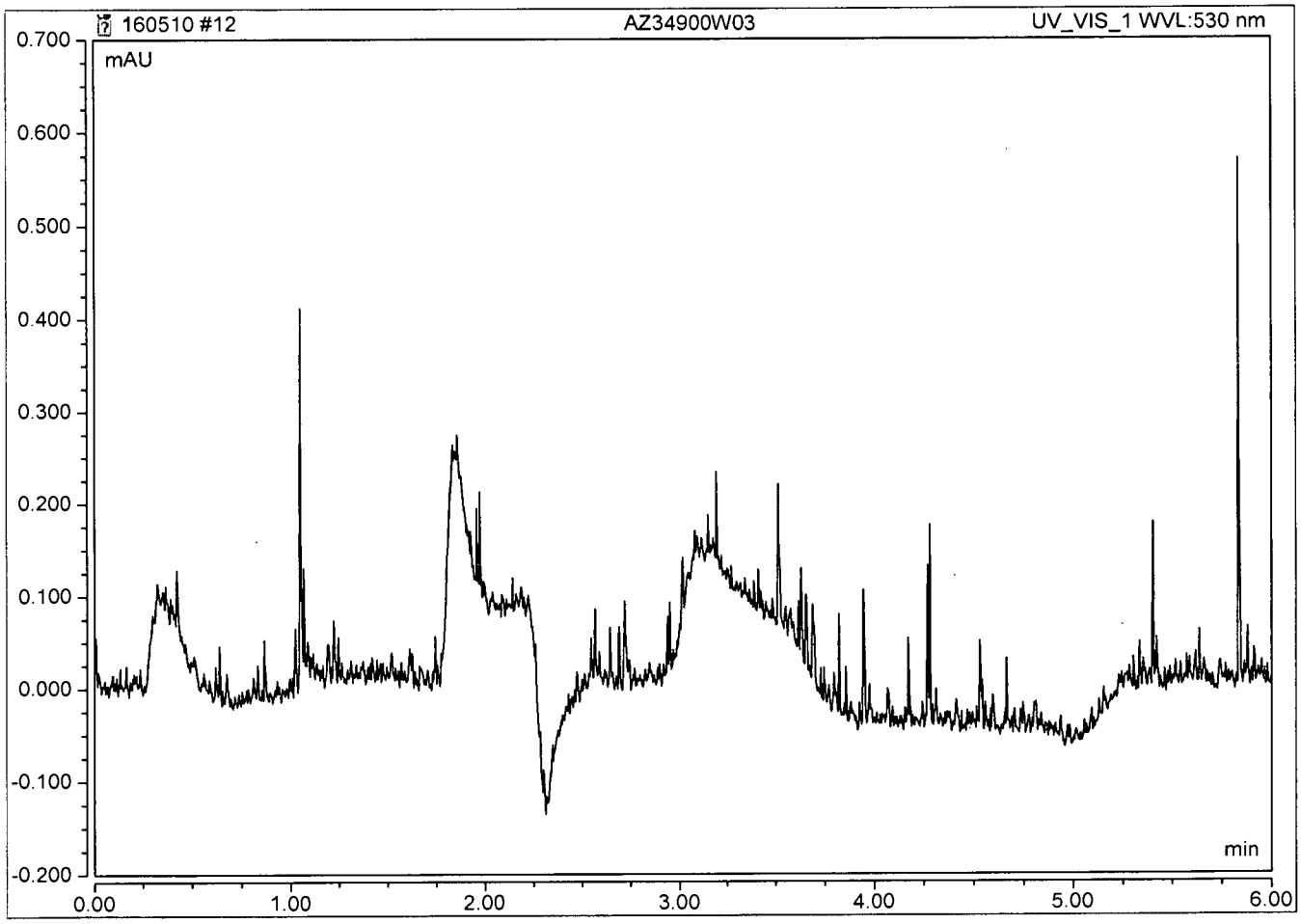
Printed: 05/23/16 7:31:52 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ34900W03**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 11:58**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19571 AZ GMP

Sample ID: N019571-003/MW-54-140-EB-Q216

Sample Collection Date: 04/29/16

APPL ID: AZ34901

ARF: 79717

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

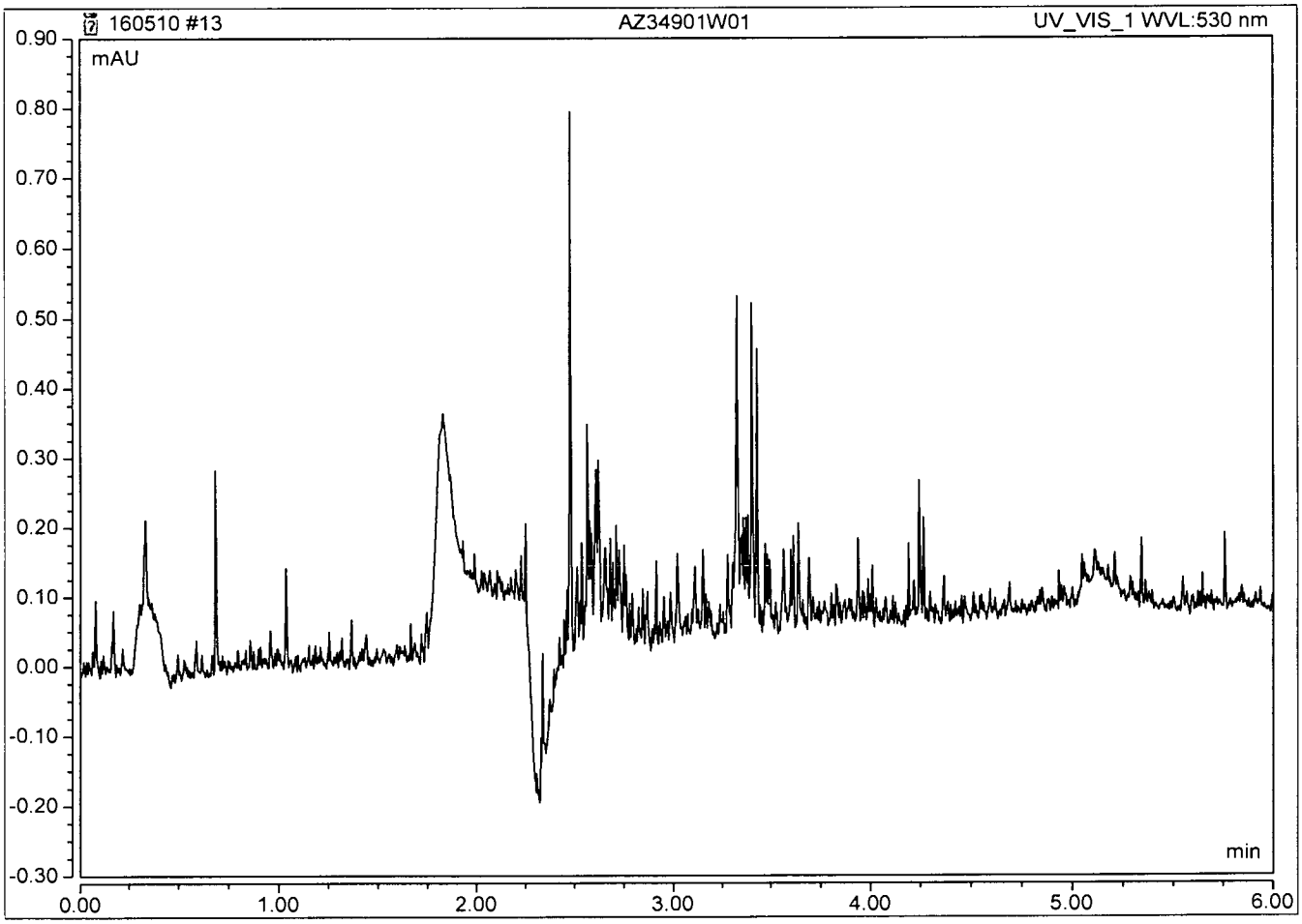
Printed: 05/23/16 7:31:52 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ34901W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 12:06**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19571 AZ GMP

Sample ID: N019571-004/MW-54-140-Q216

Sample Collection Date: 04/29/16

APPL ID: AZ34902

ARF: 79717

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

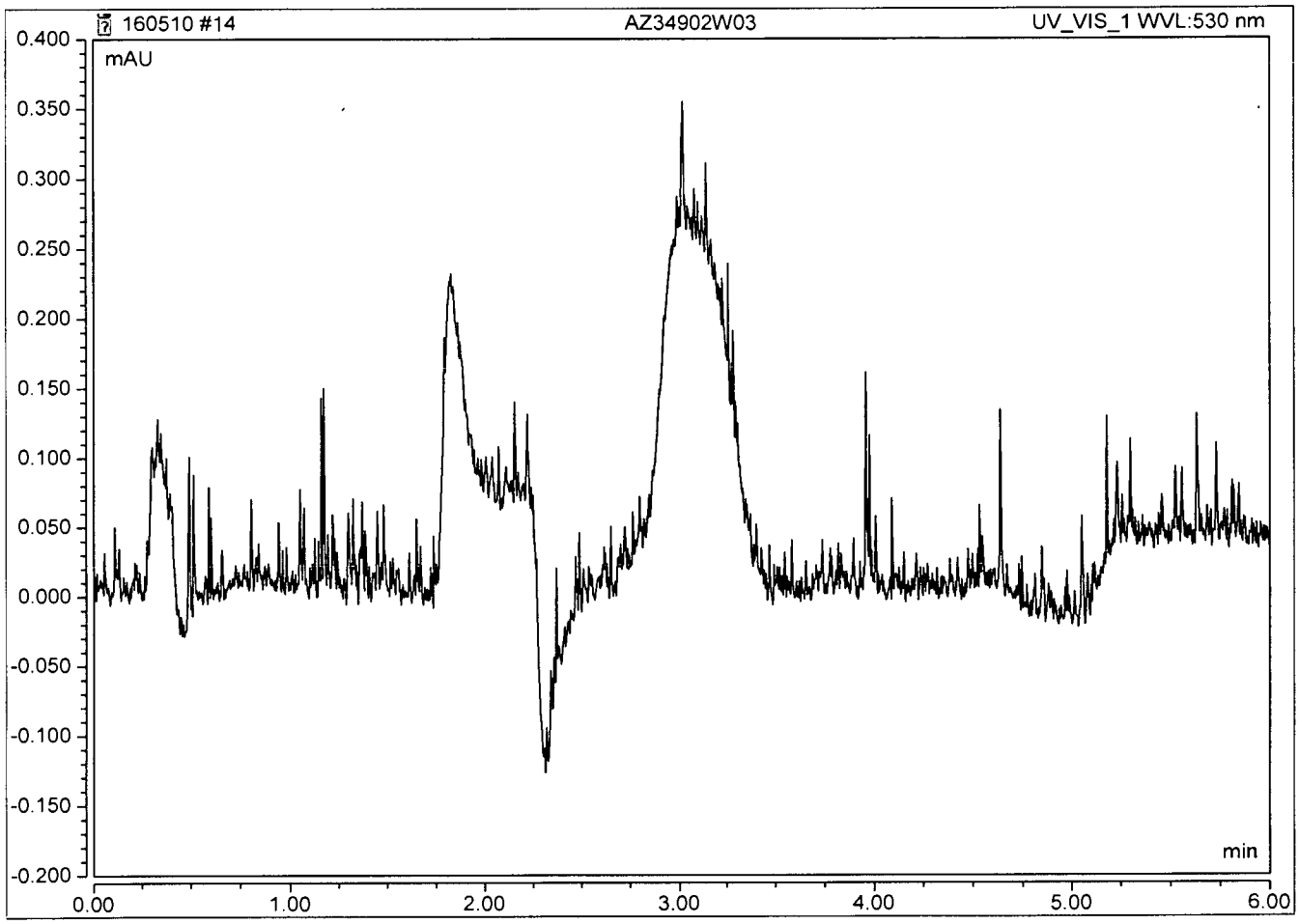
Printed: 05/23/16 7:31:52 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ34902W03**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 12:15**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19571 AZ GMP

Sample ID: N019571-005/MW-54-195-EB-Q216

Sample Collection Date: 04/29/16

APPL ID: AZ34903

ARF: 79717

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

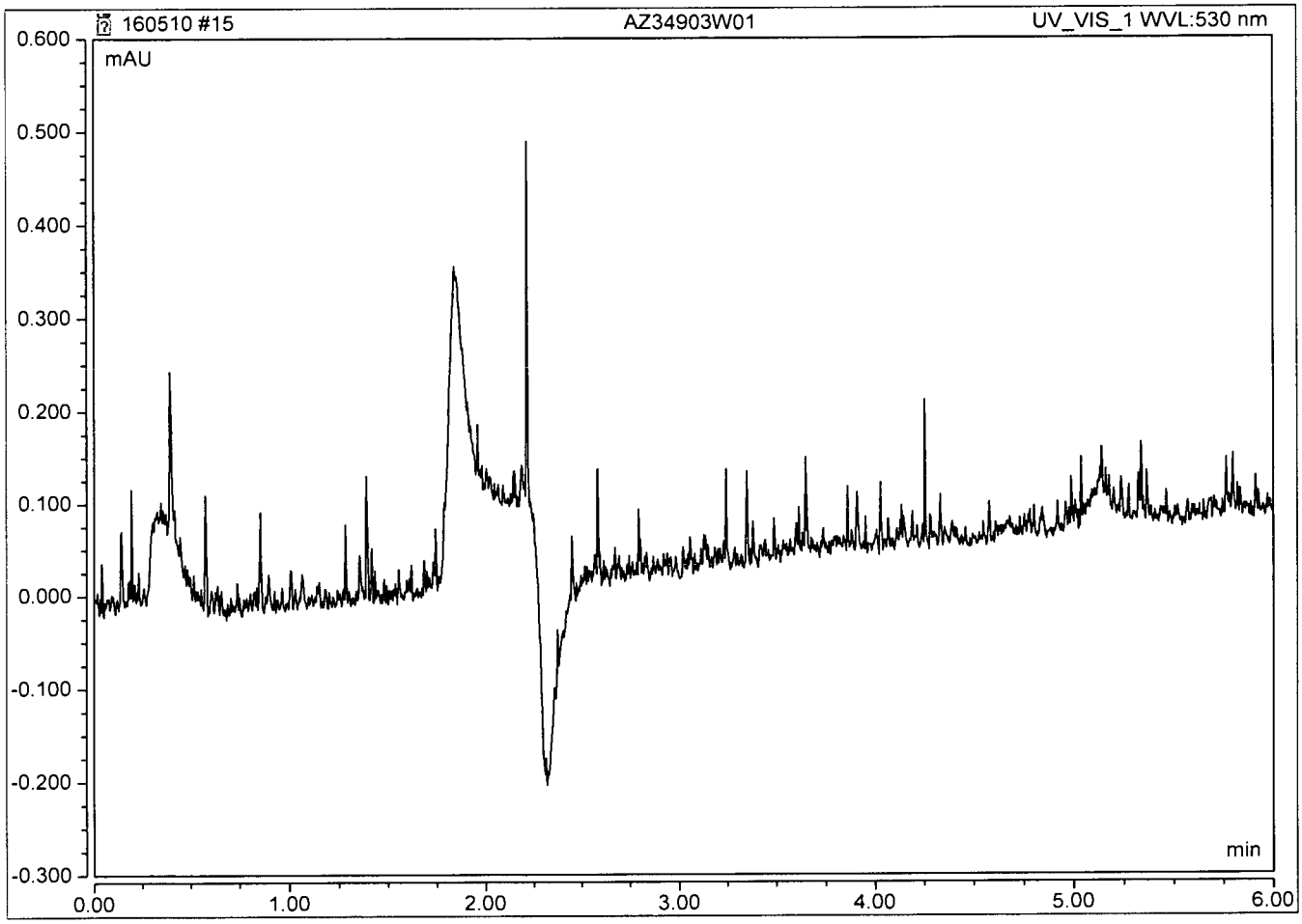
Printed: 05/23/16 7:31:52 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ34903W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 12:23**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19571 AZ GMP

Sample ID: N019571-006/MW-54-195-Q216

Sample Collection Date: 04/29/16

APPL ID: AZ34904

ARF: 79717

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

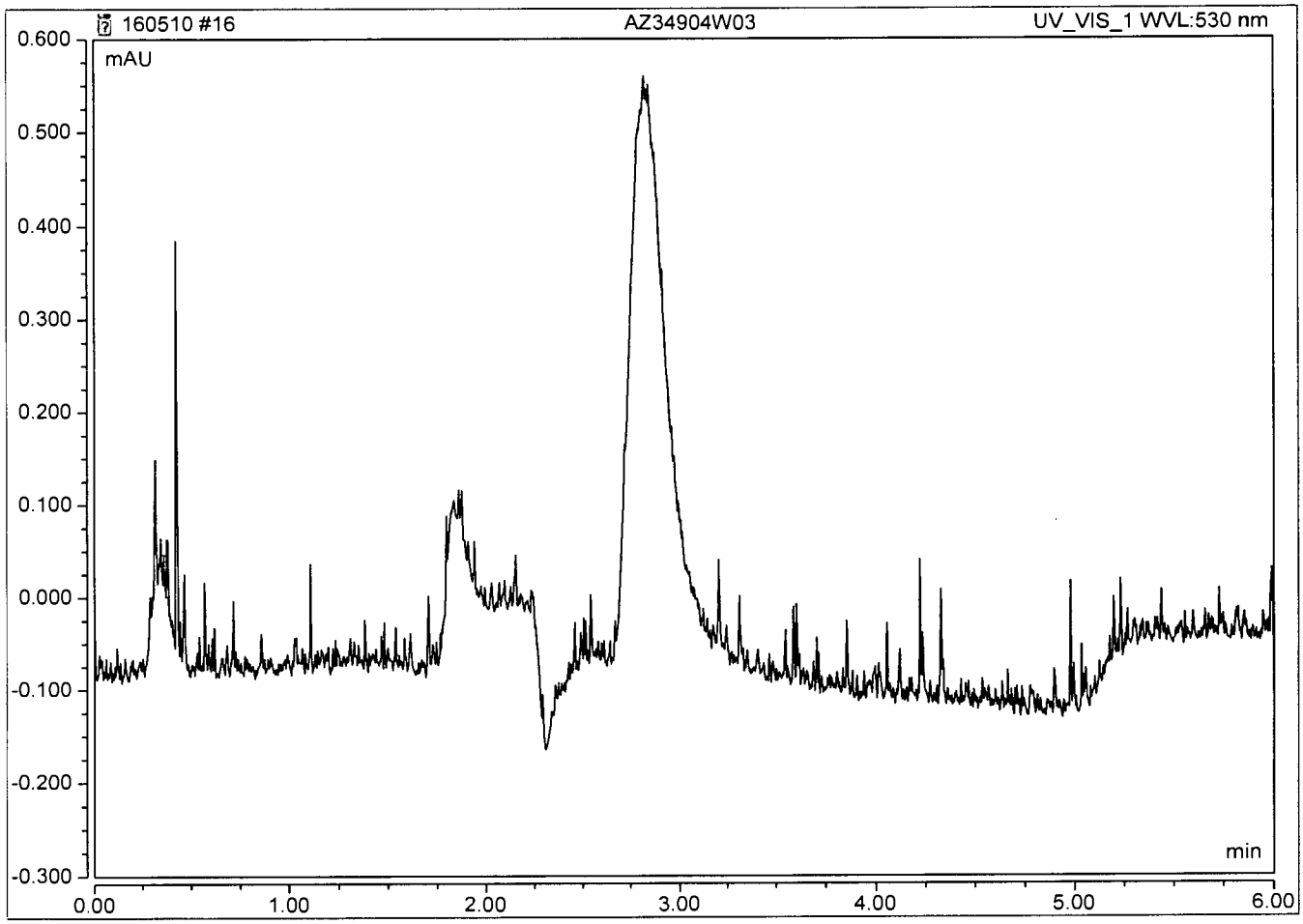
Printed: 05/23/16 7:31:52 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ34904W03**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 12:31**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19571 AZ GMP

Sample ID: N019571-007A/MW-712-Q216

Sample Collection Date: 04/29/16

APPL ID: AZ34905

ARF: 79717

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

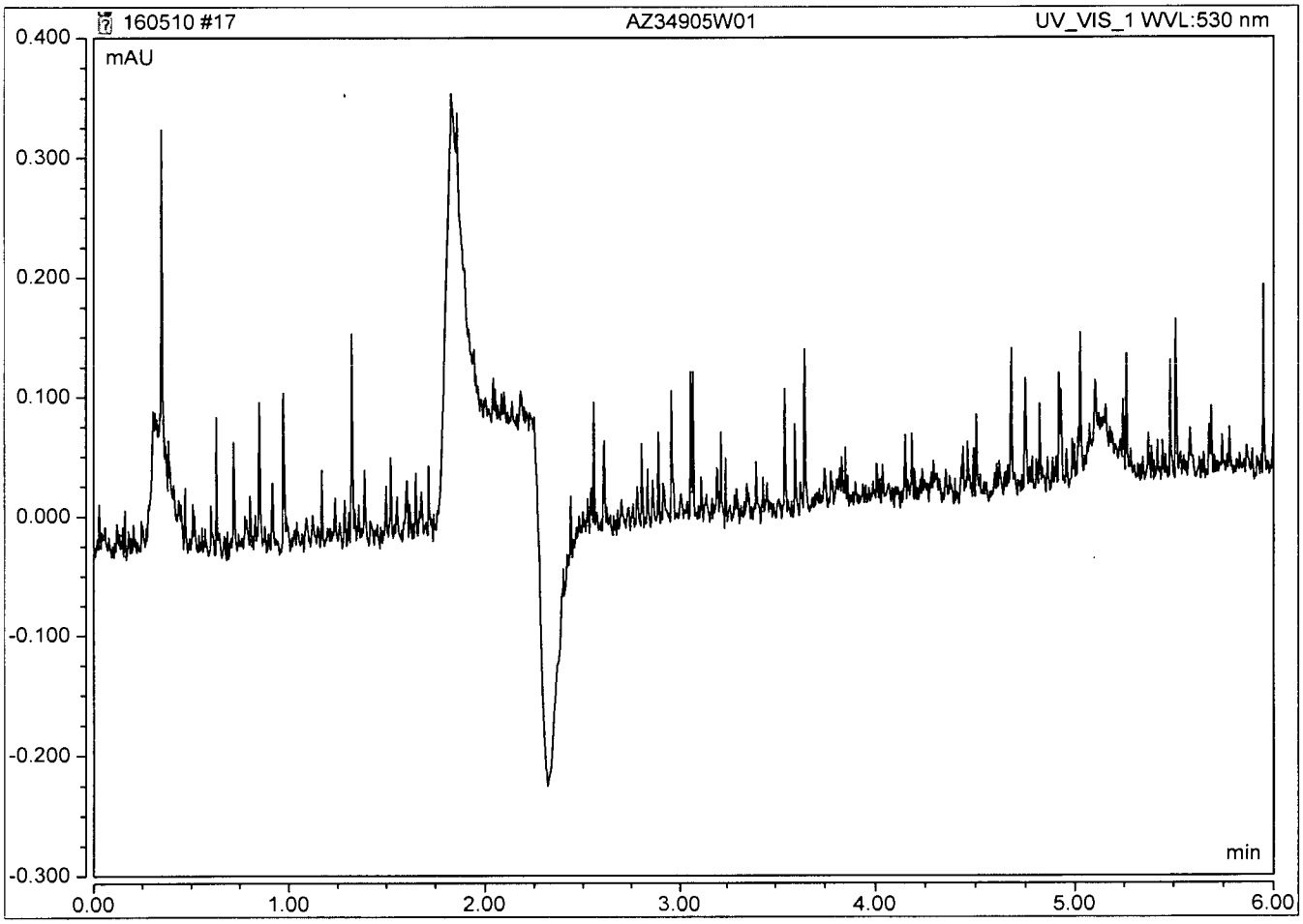
Printed: 05/23/16 7:31:52 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ34905W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 12:40**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19571 AZ GMP

Sample ID: N019571-008A/MW-715-Q216

Sample Collection Date: 04/29/16

APPL ID: AZ34906

ARF: 79717

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

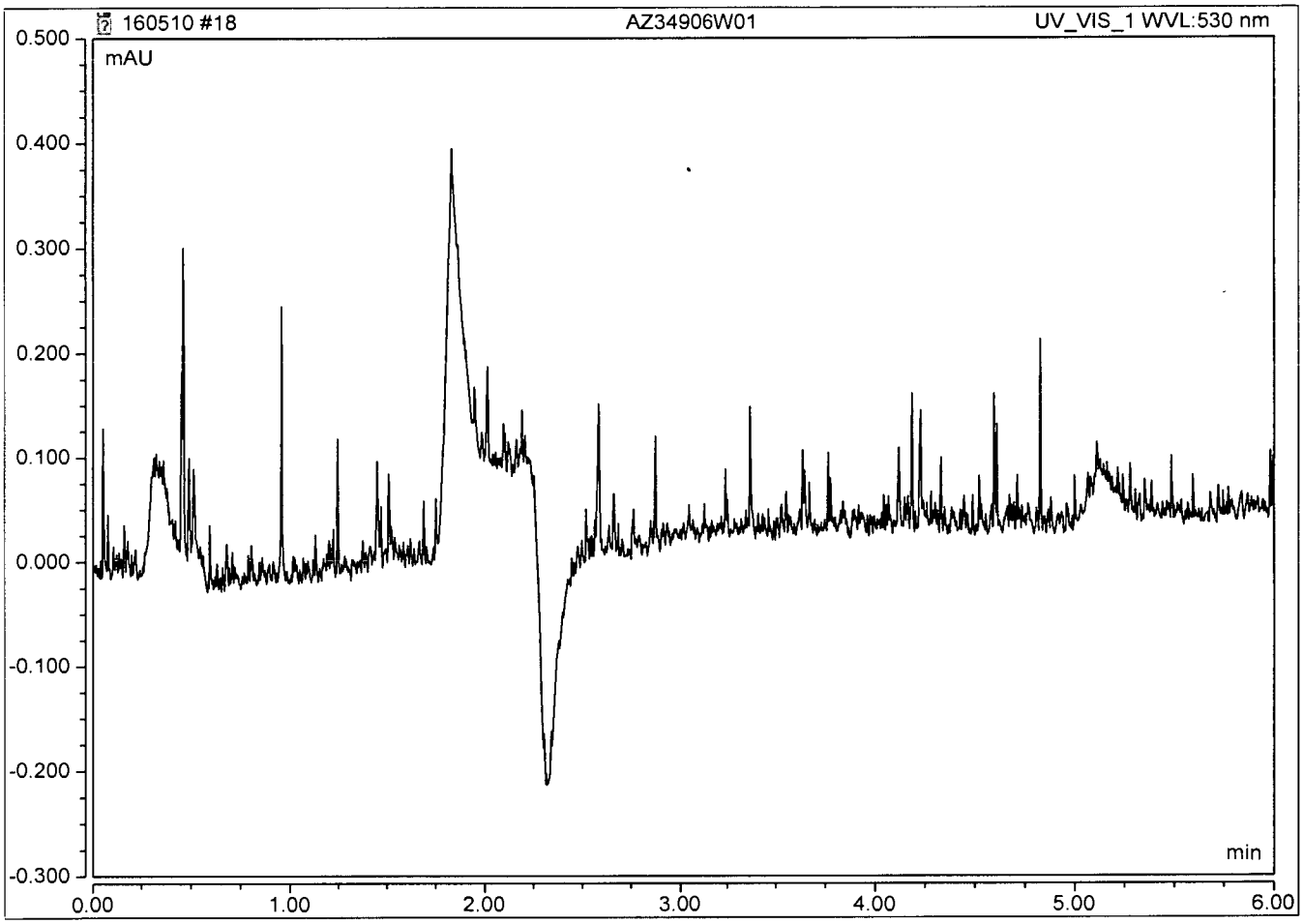
Printed: 05/23/16 7:31:52 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ34906W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 12:48**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



INORGANIC ANALYSIS
Calibration Data

APPL, INC.

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract:
ARF No: SDG:
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 04/19/16

Analyte	Calibration Verification									M
	True ICV	Found 15:25	%R(1)	True	Found	%R(1)	True	Found	%R(1)	
Hex Chrome	10	10.7009	107							

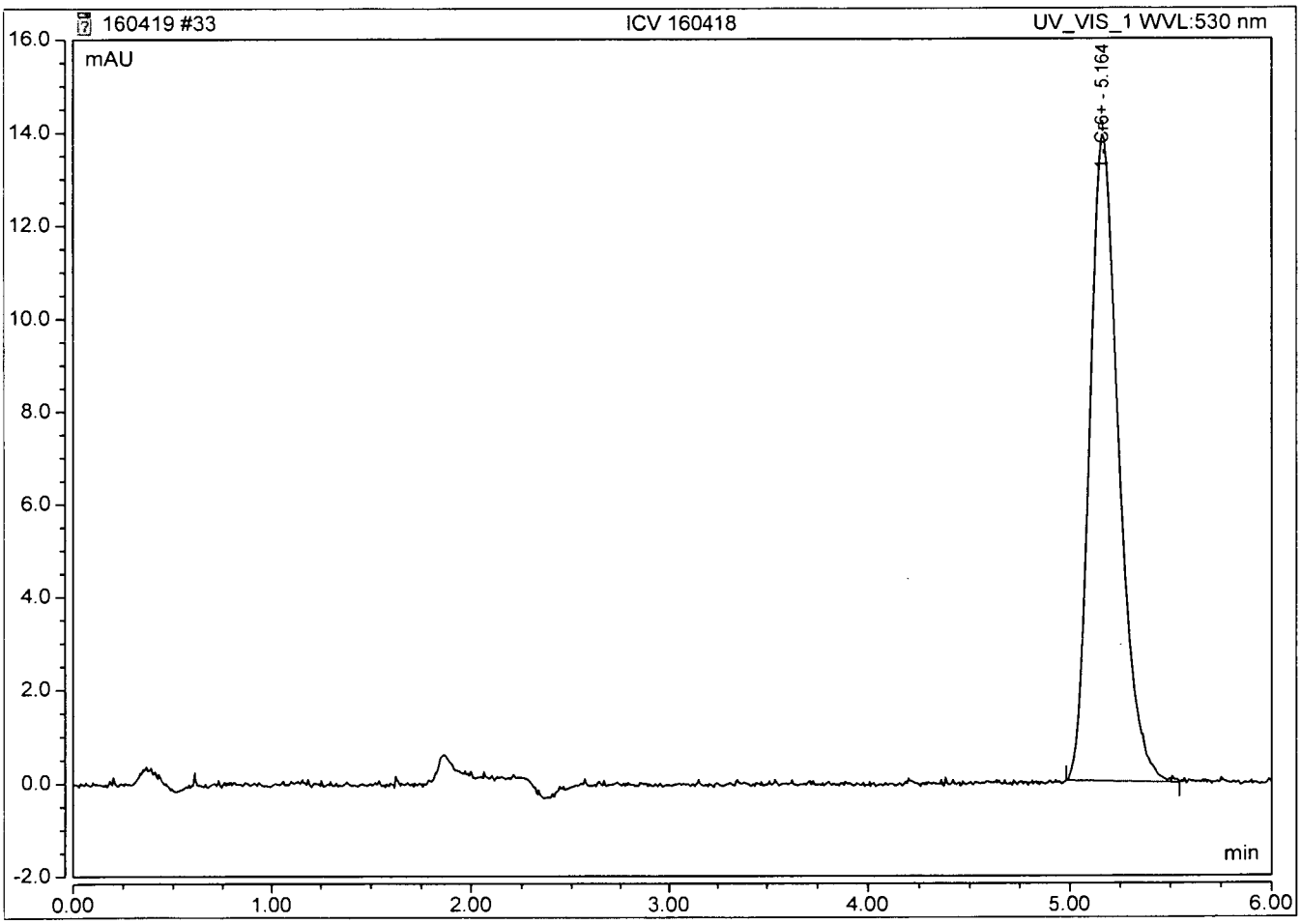
(1) Control Limits: 90-110

ILM02.0

Peak Integration Report

Sample Name:	**ICV 160418**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:25**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.16	Cr6+	BMB	2.325	13.889	10.7009 ✓
		TOTAL:		2.33	13.89	10.70



Algorithm
$y = mx + b$
$x = 10.7$ ✓ mm 5/23/16

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract:

ARF No.: SDG:

Preparation Blank Matrix (soil/water): water

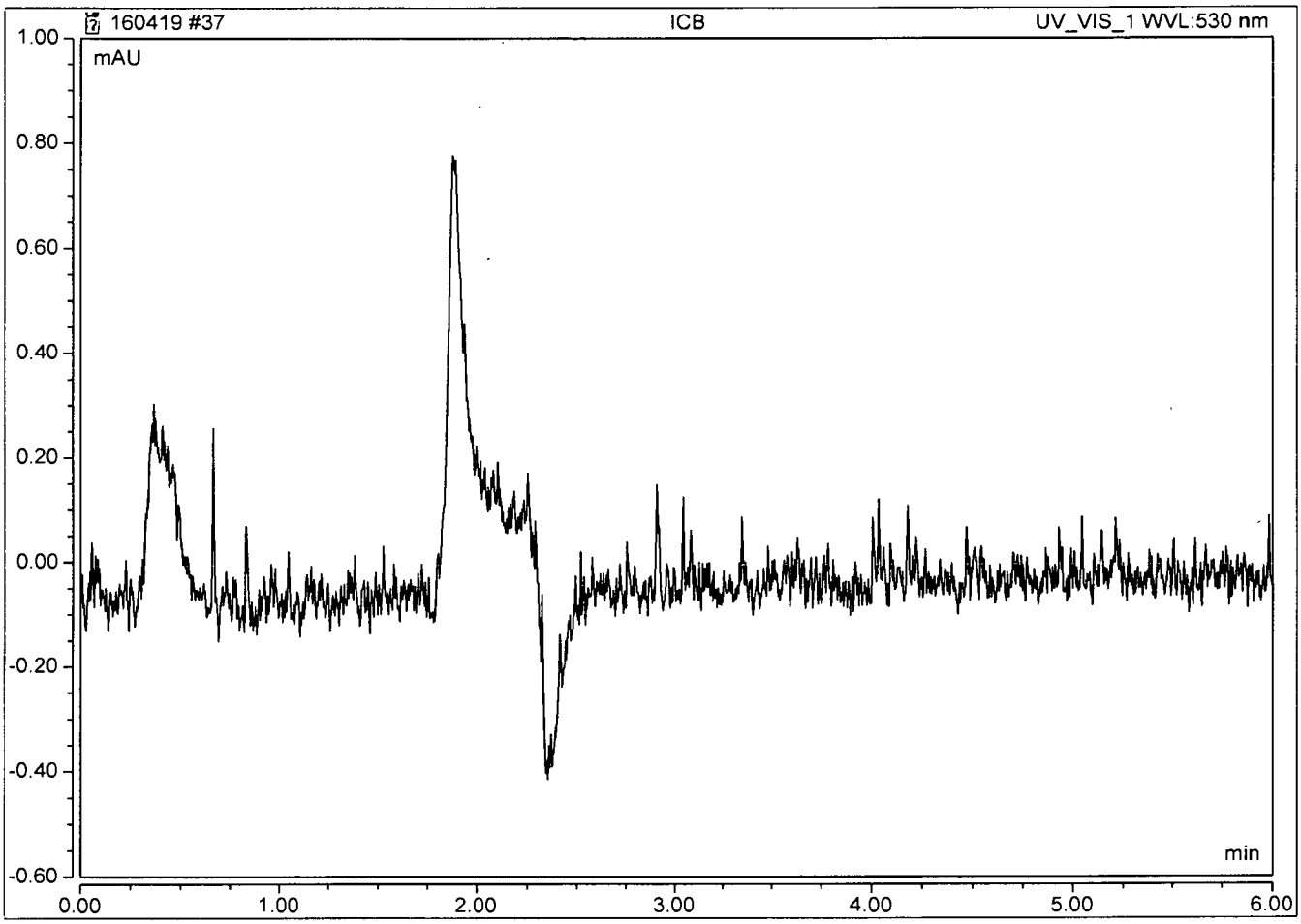
Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Calibration Blanks										M
	ICB 04/19/16 15:59	C		C		C		C		C	
Hex Chrome	.500	U									

Peak Integration Report

Sample Name:	**ICB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:59**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories
ARF No: 79717 SDG: 79717
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 05/10/16

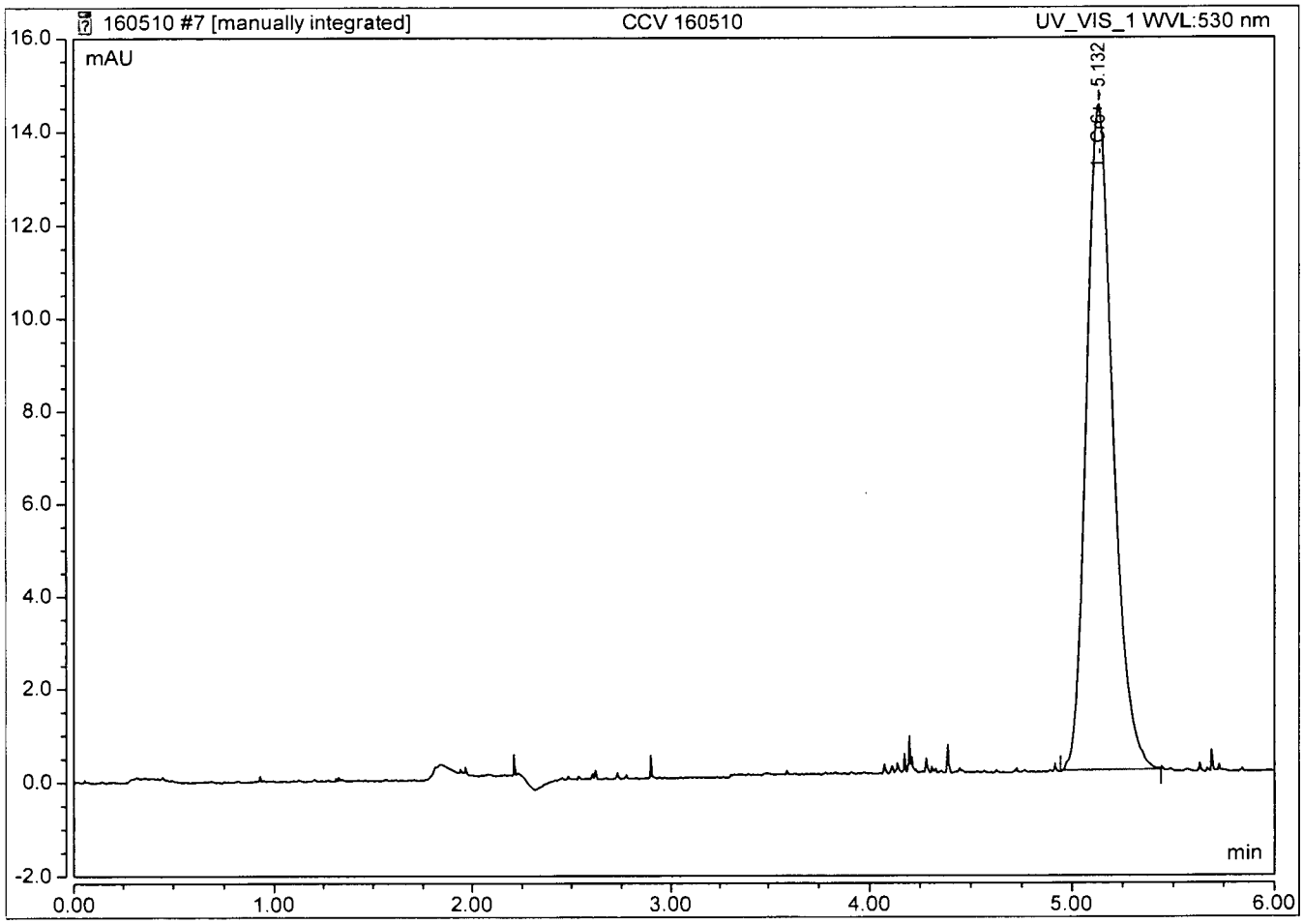
Analyte	Calibration Verification									M
	True CCV1	Found 11:16	%R(1)	True CCV1	Found 13:20	%R(1)	True CCV1	Found 14:57	%R(1)	
Hex Chrome	10	9.9179	99.2	10	9.4328	94.3	10	9.0947	90.9	

(1) Control Limits: 90-110

Peak Integration Report

Sample Name:	**CCV 160510**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 11:16**	*Run Time:*	**6.00**

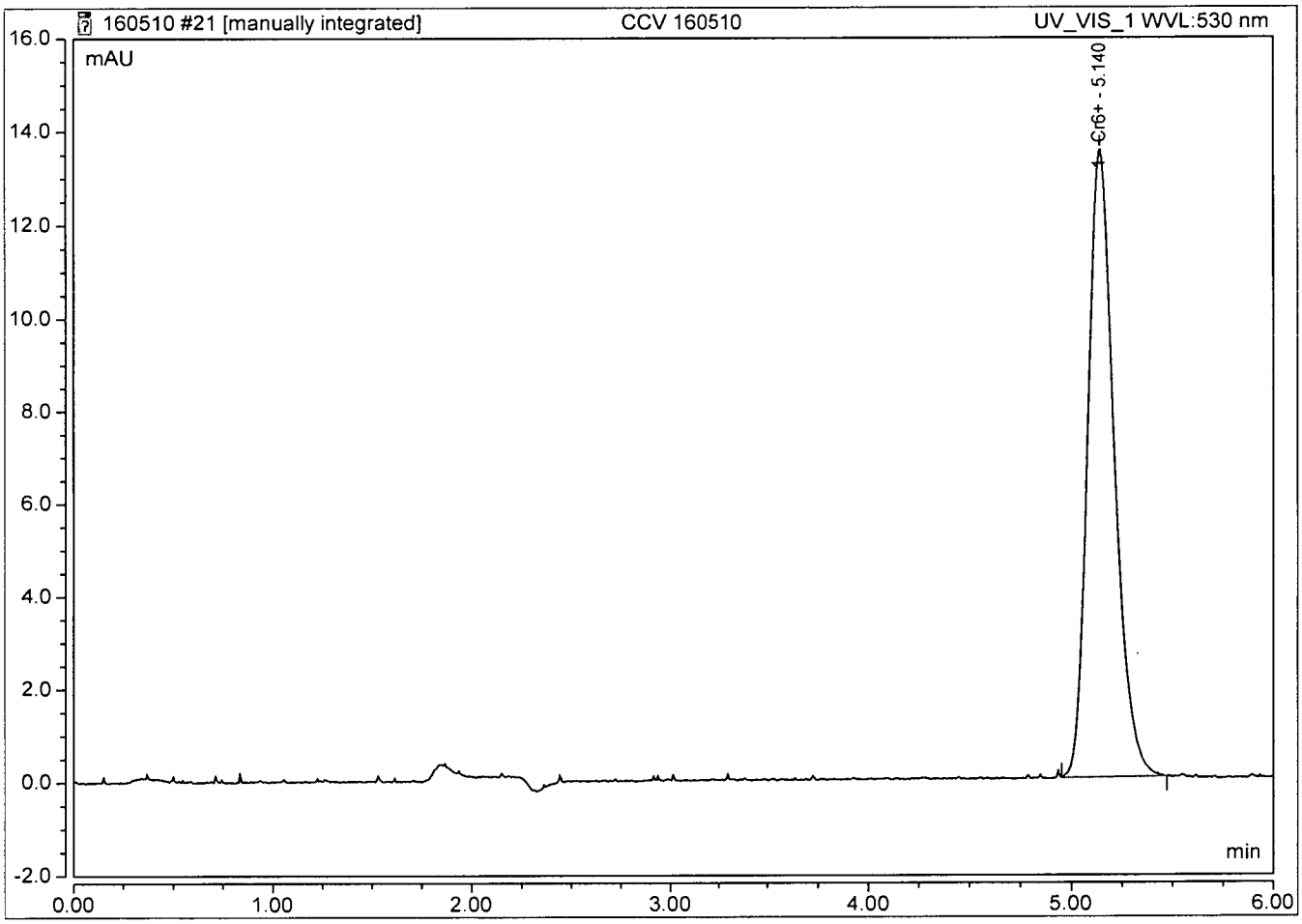
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.13	Cr6+	BMB*	2.155	14.314	9.9179
		TOTAL:		2.16	14.31	9.92



Peak Integration Report

Sample Name:	**CCV 160510**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 13:20**	*Run Time:*	**6.00**

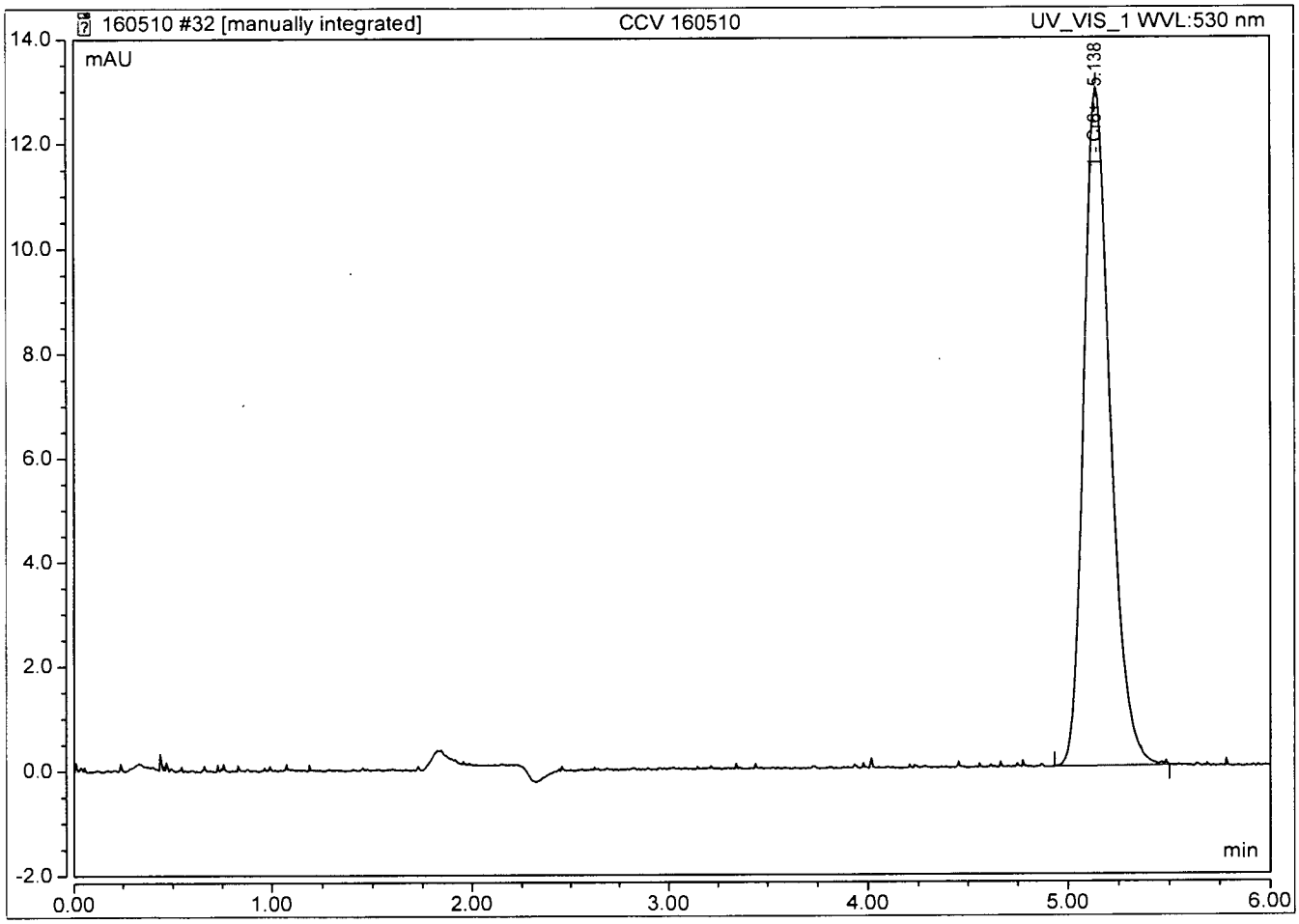
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.14	Cr6+	BMB*	2.050	13.497	9.4328
		TOTAL:		2.05	13.50	9.43



Peak Integration Report

Sample Name:	**CCV 160510**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 14:57**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.14	Cr6+	BMB*	1.976	12.981	9.0946
		TOTAL:		1.98	12.98	9.09



A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No.: 79717 SDG: 79717

Preparation Blank Matrix (soil/water): water

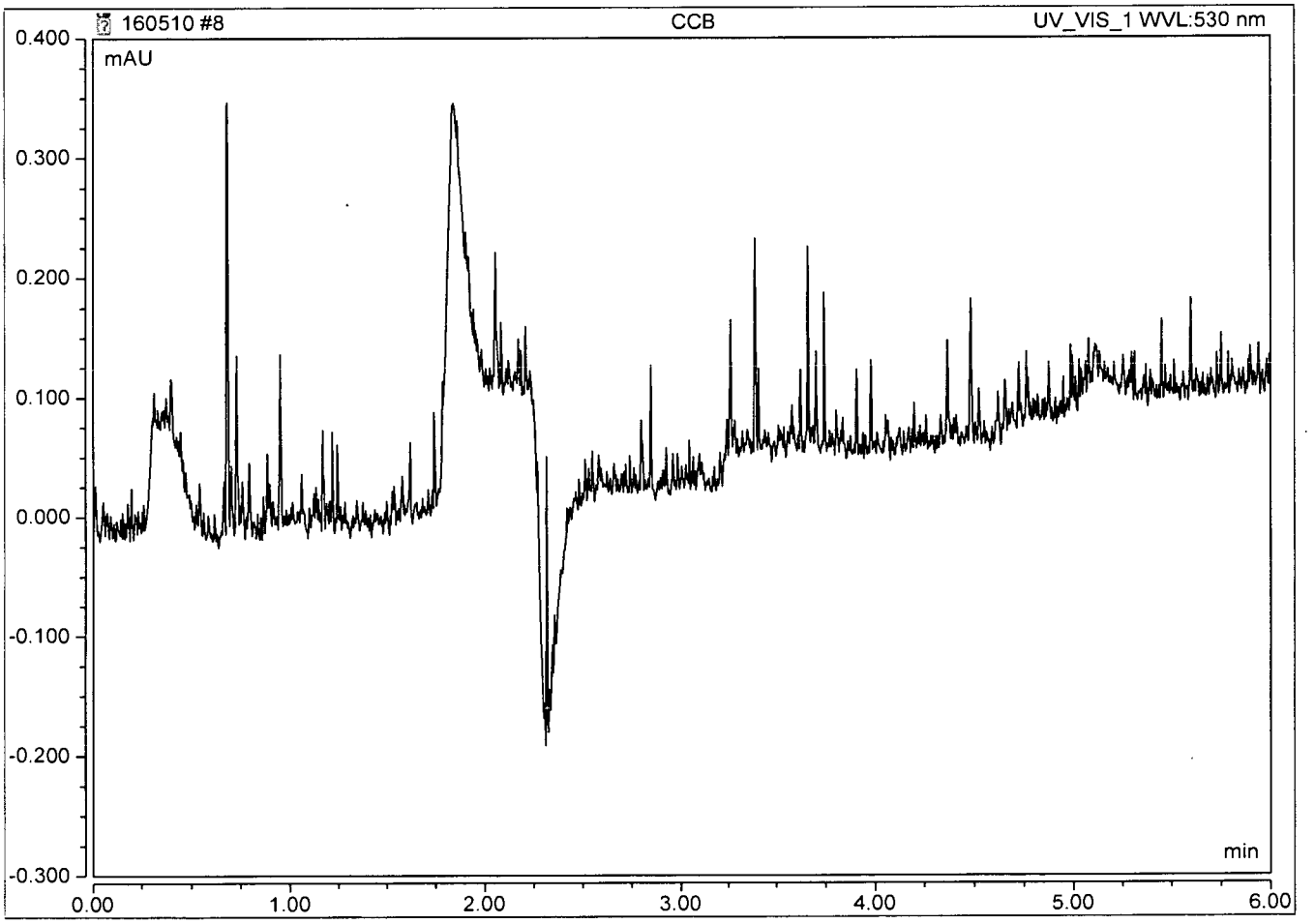
Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Calibration Blanks										M
	CCB 05/10/16 11:24	C	CCB 05/10/16 13:29	C	CCB 05/10/16 15:06	C		C		C	
Hex Chrome	.500	U	.500	U	.500	U					

Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 11:24**	*Run Time:*	**6.00**

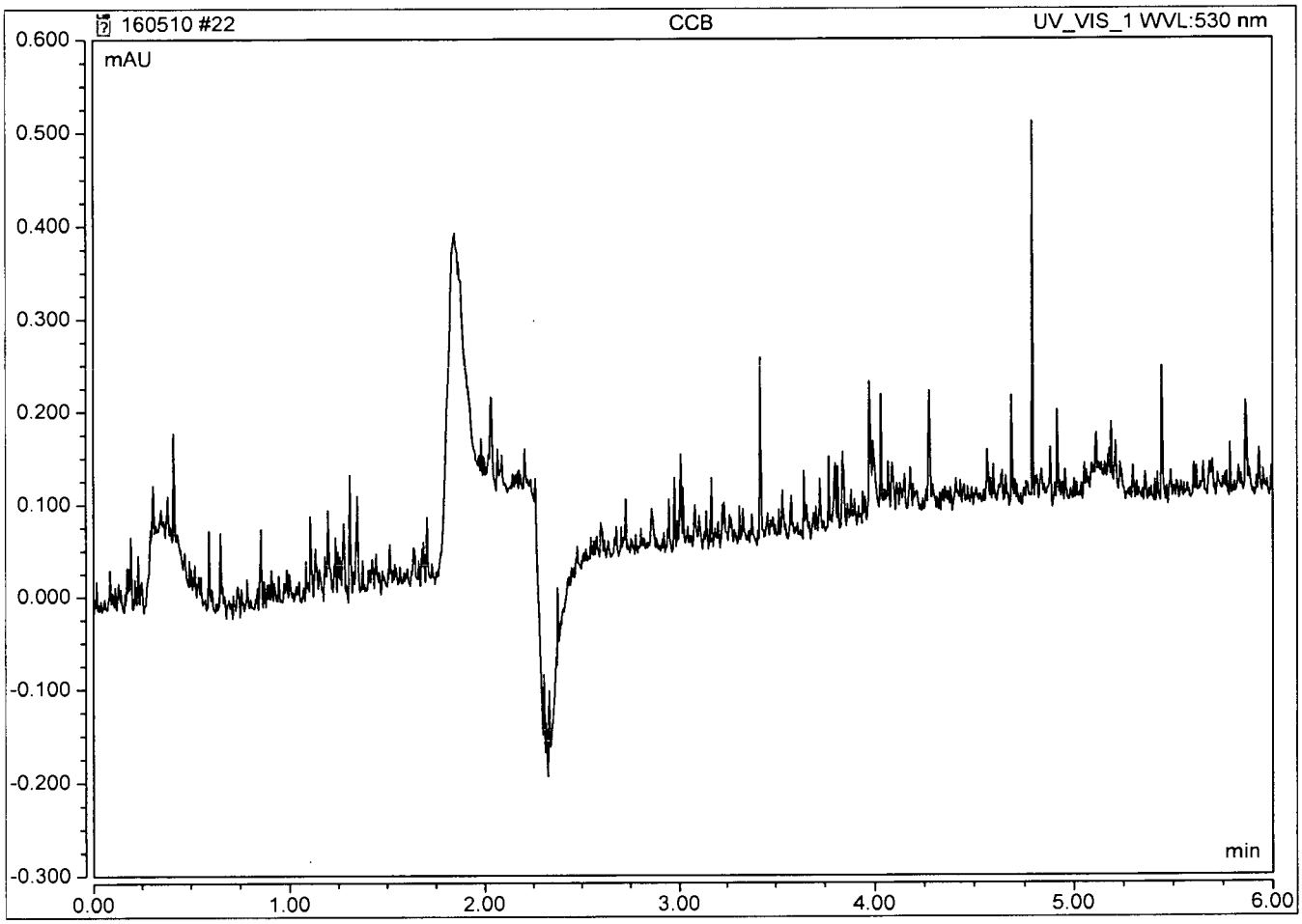
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 13:29**	*Run Time:*	**6.00**

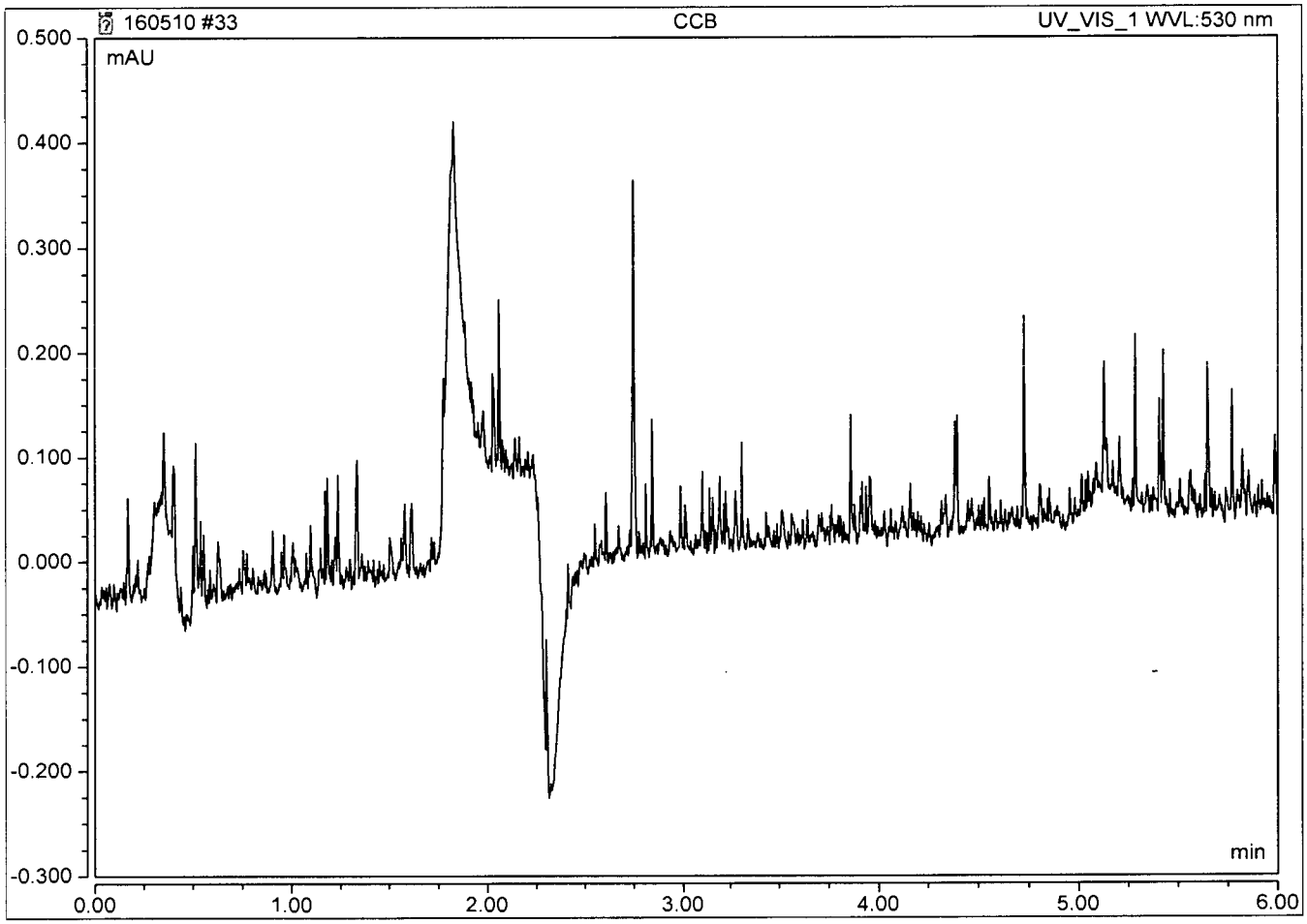
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 15:06**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



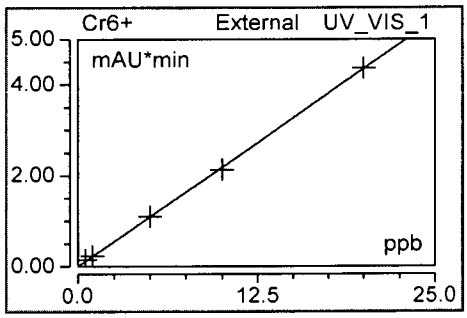
Calibration Batch Report

Sequence:	**160419**	*Injection Volume:*	**1,000.00**
Instrument Method:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 14:43**	*Run Time:*	**6.0008333**

Calibration Summary

Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Coeff.Det. %
Cr6+	Area	Lin, Avg	5.000	0.000	0.217	0.000	99.9753
		AVERAGE:		0.0000	0.2173	0.0000	99.9753

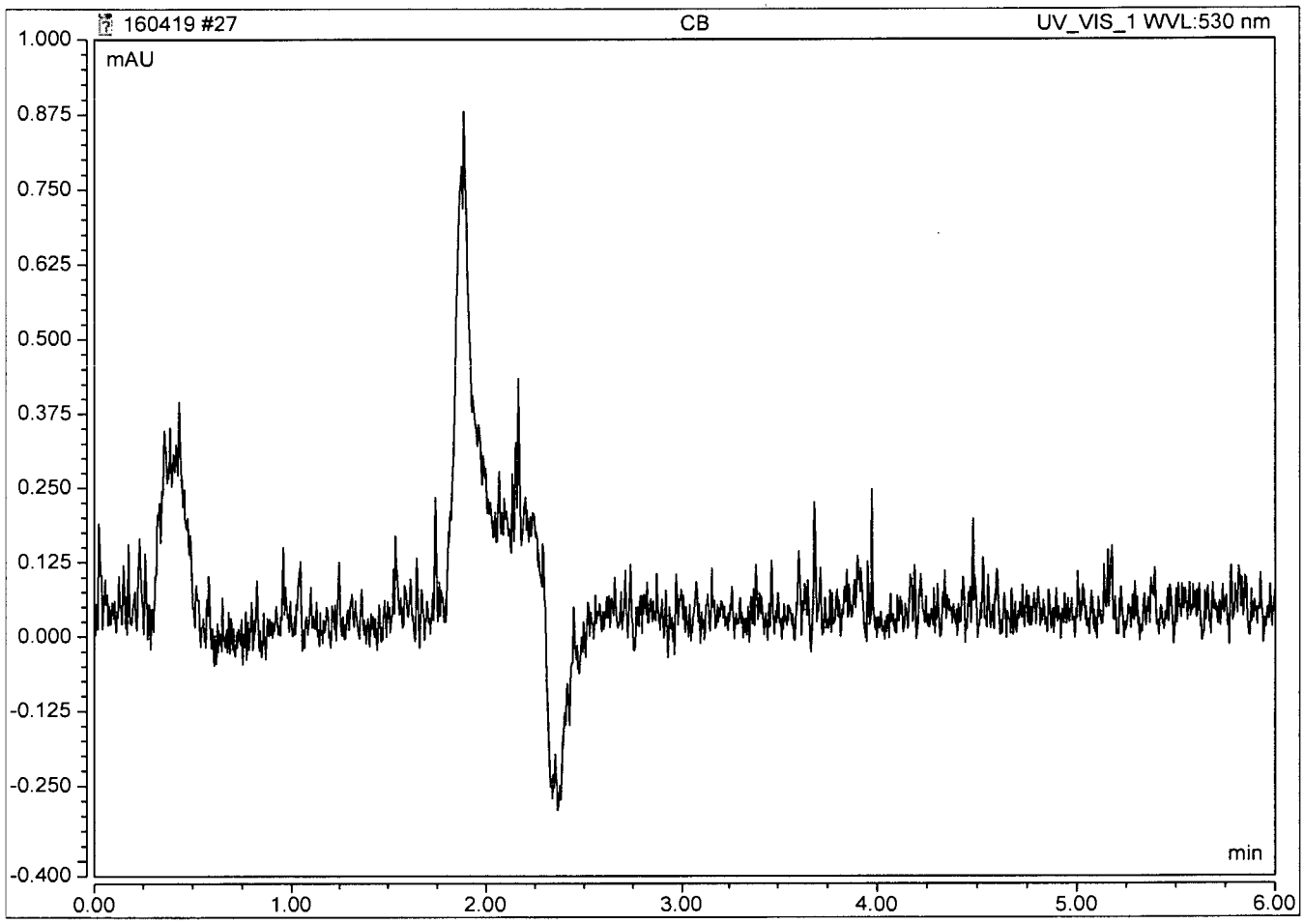
Injection Name	Ret.Time min UV_VIS_1	Area mAU*min UV_VIS_1	Height mAU UV_VIS_1	Amount ppb UV_VIS_1
	Cr6+	Cr6+	Cr6+	Cr6+
l Cal 0.5	5.114	0.1408	0.821	0.648
l Cal 1.0	5.159	0.2256	1.352	1.038
l Cal 5.0	5.159	1.0984	6.609	5.055
l Cal 10	5.151	2.1584	12.757	9.933
l Cal 20	5.156	4.3611	26.168	20.070
Average	5.148			
Rel. Std. Dev.	0.372 %			



Peak Integration Report

Sample Name:	**CB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 14:35**	*Run Time:*	**6.00**

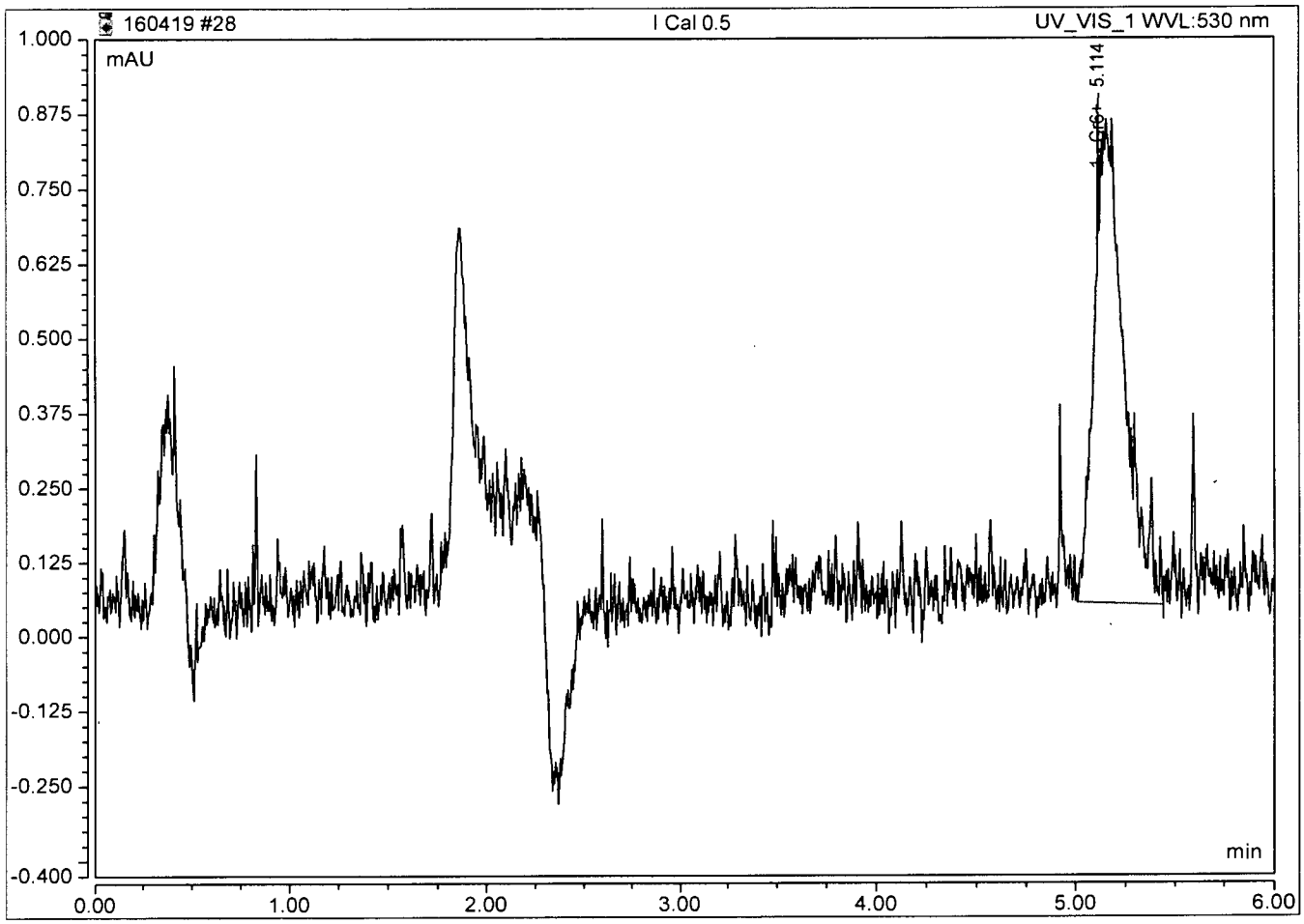
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Peak Integration Report

Sample Name:	**I Cal 0.5**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 14:43**	*Run Time:*	**6.00**

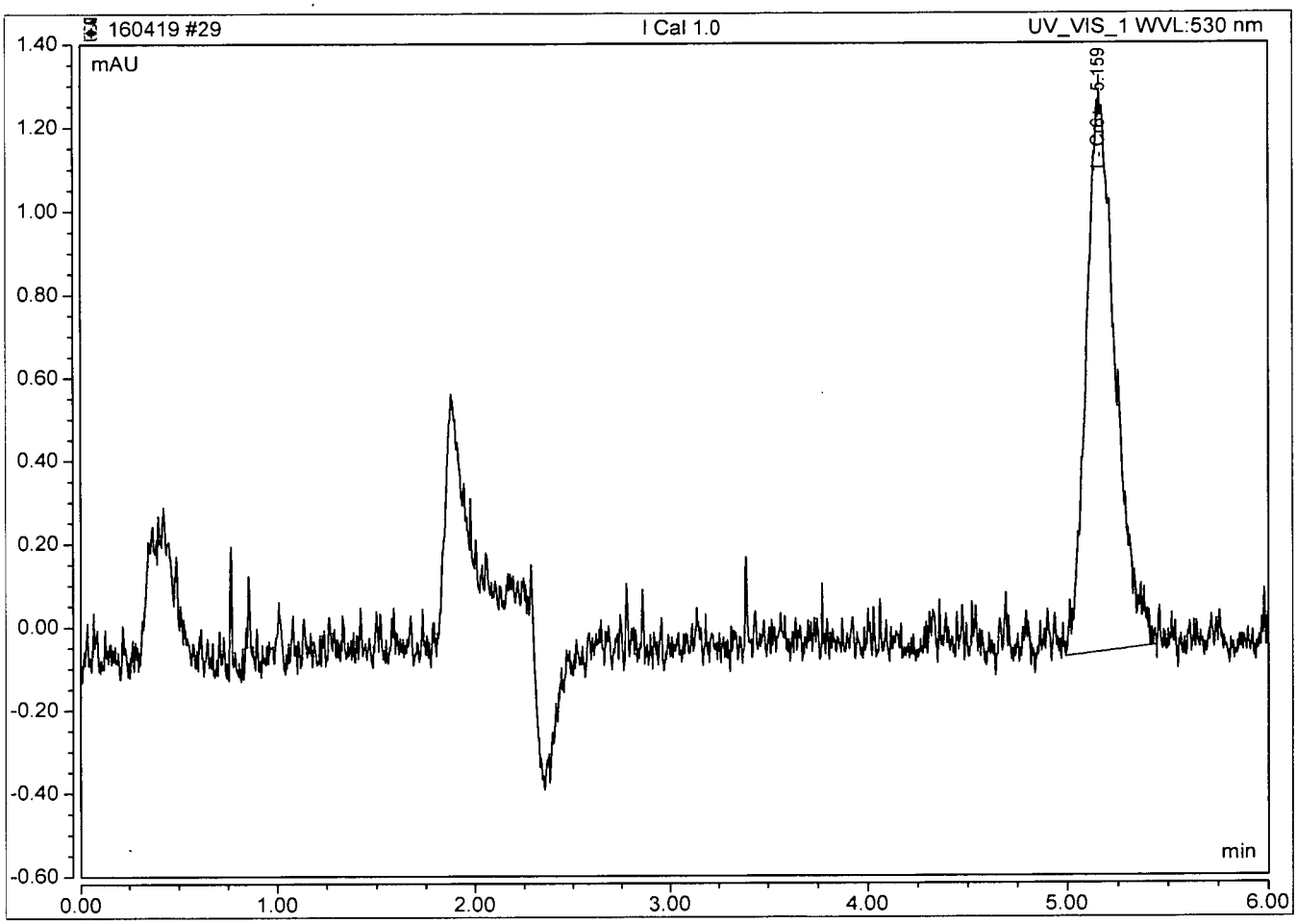
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.11	Cr6+	BMB	0.141	0.821	0.6478
		TOTAL:		0.14	0.82	0.65



Peak Integration Report

Sample Name:	**I Cal 1.0**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 14:52**	*Run Time:*	**6.00**

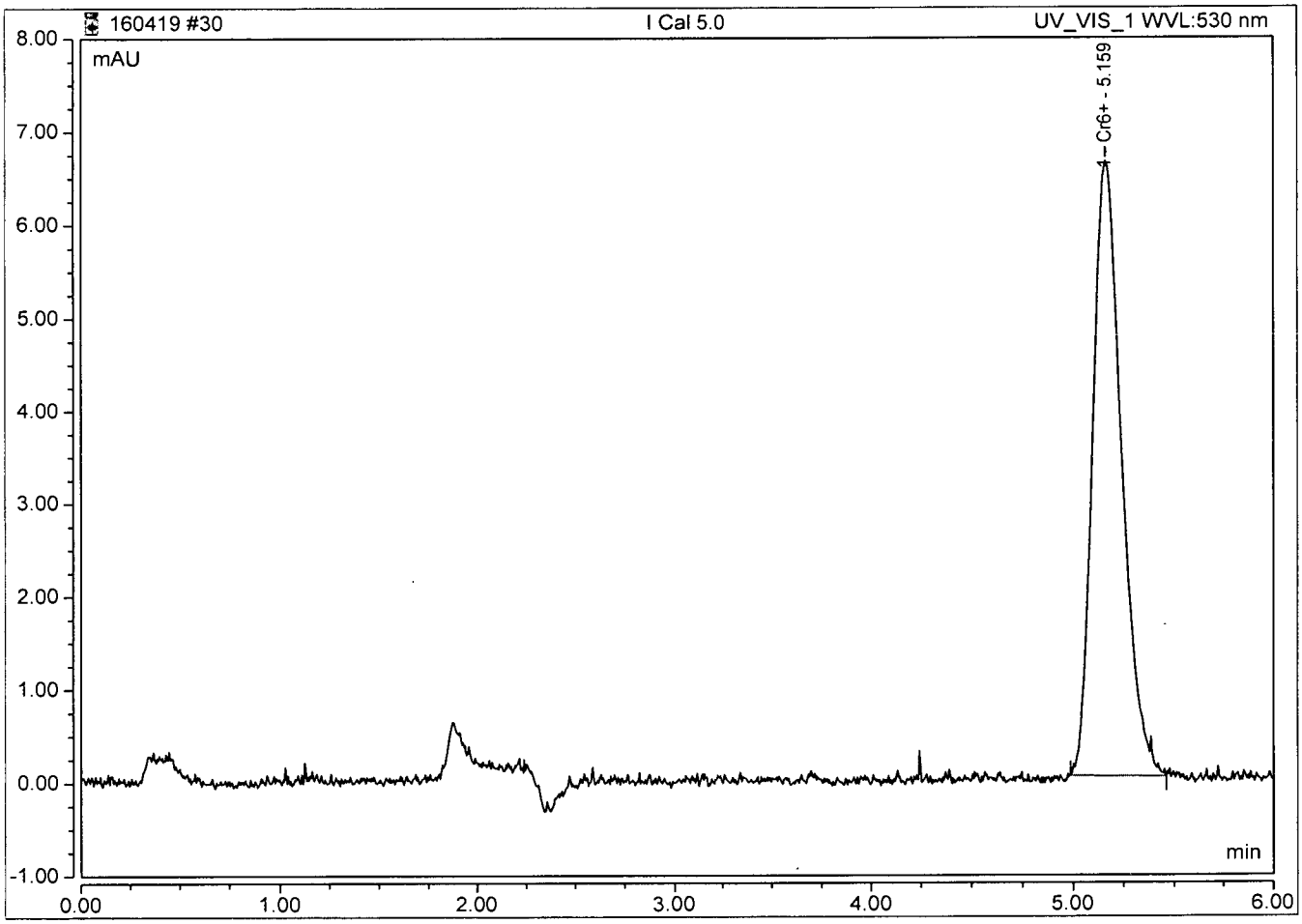
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.16	Cr6+	BMB	0.226	1.352	1.0384
		TOTAL:		0.23	1.35	1.04



Peak Integration Report

Sample Name:	**I Cal 5.0**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:00**	*Run Time:*	**6.00**

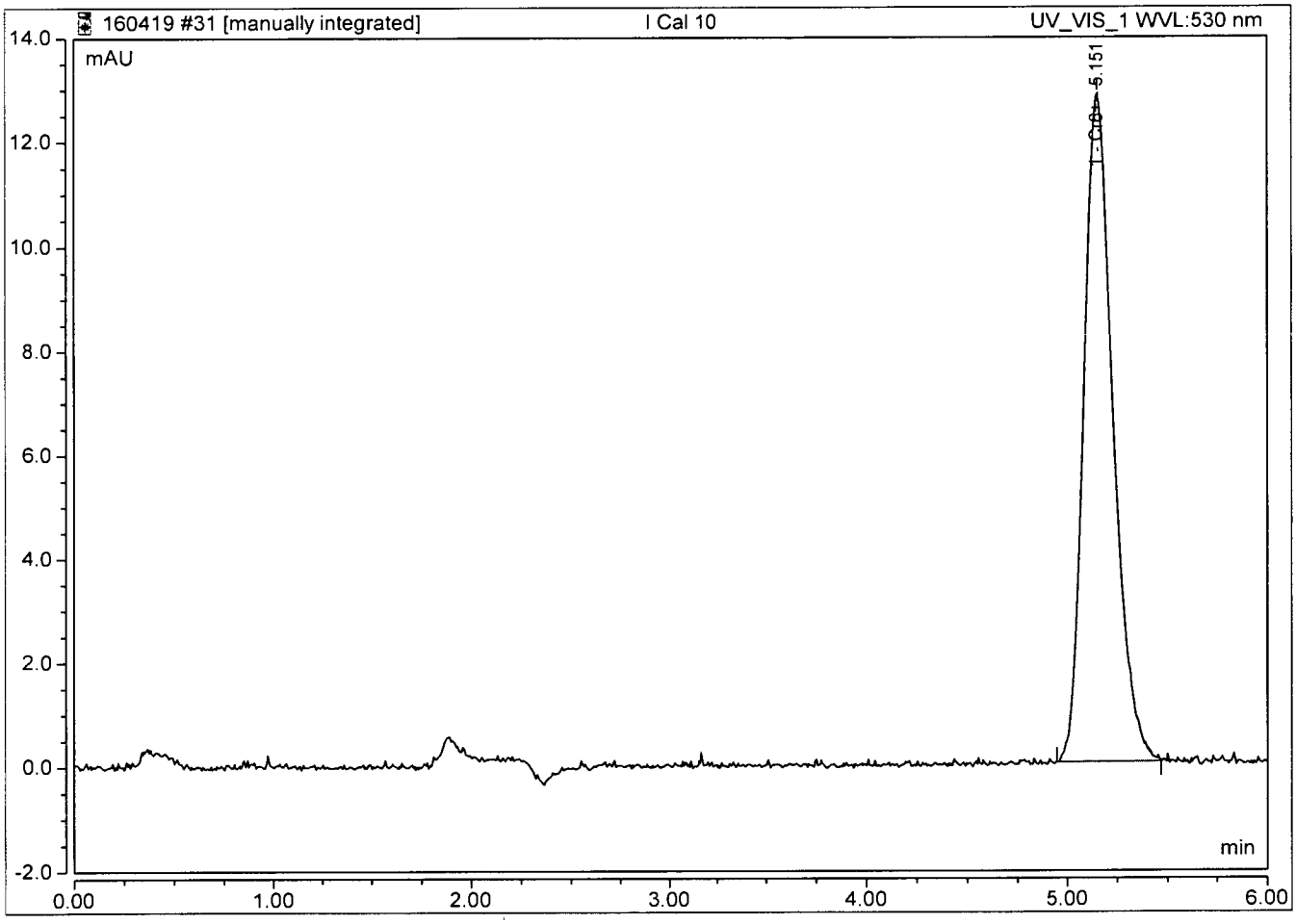
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.16	Cr6+	BMB	1.098	6.609	5.0552
		TOTAL:		1.10	6.61	5.06



Peak Integration Report

Sample Name:	**I Cal 10**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:08**	*Run Time:*	**6.00**

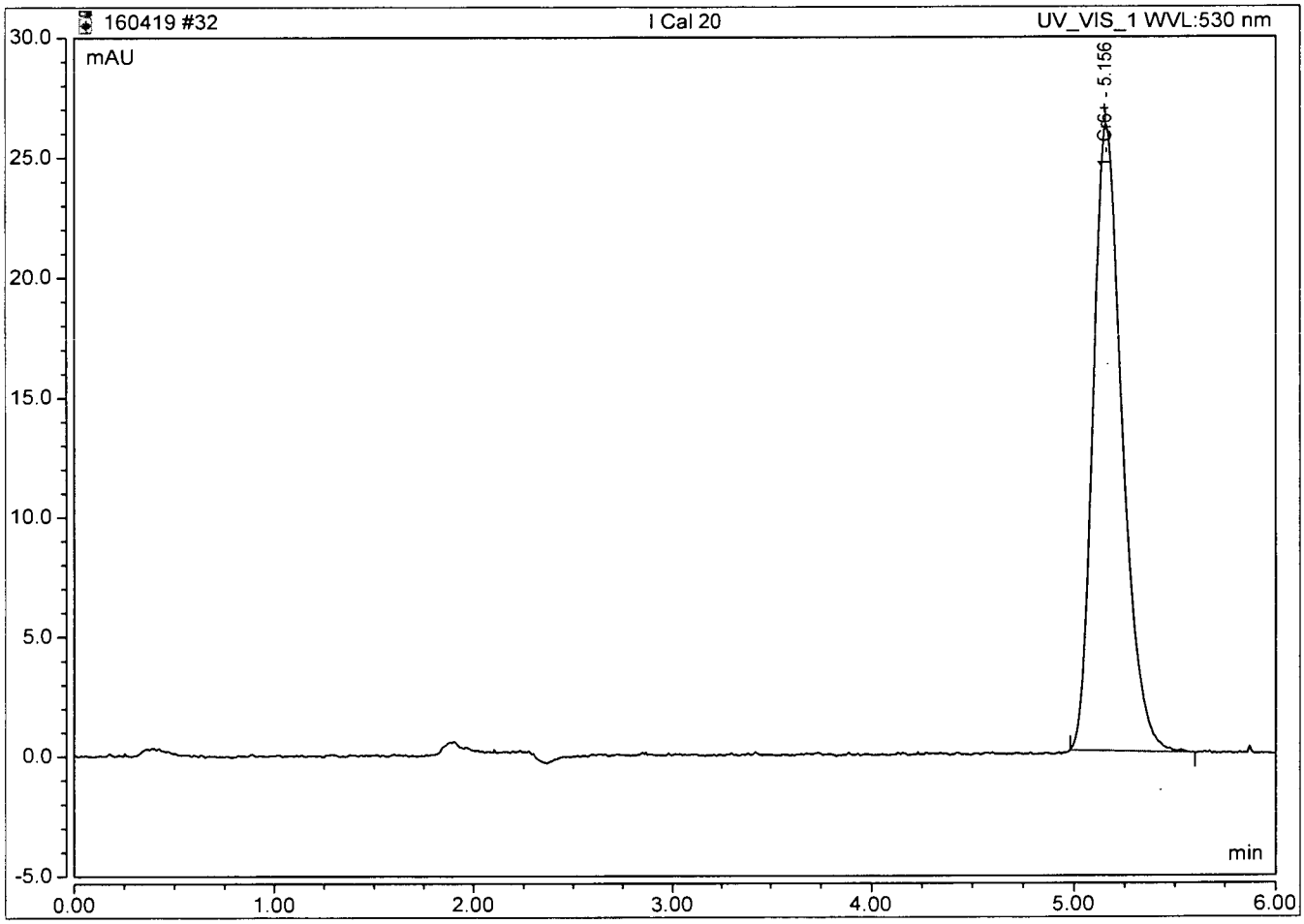
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.15	Cr6+	BMB*	2.182	12.816	10.0003
		TOTAL:		2.18	12.82	10.00



Peak Integration Report

Sample Name:	**I Cal 20**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:17**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.16	Cr6+	BMB	4.361	26.168	20.0705
		TOTAL:		4.36	26.17	20.07



INORGANIC ANALYSIS
Raw Data

APPL, INC.

WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	05/10/16	05/10/16	#2187-160510A-AZ34899

Wetlab SC-Blank-REG MDLs
Printed: 05/23/16 7:31:56 AM

Laboratory Control Spike Recovery

WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

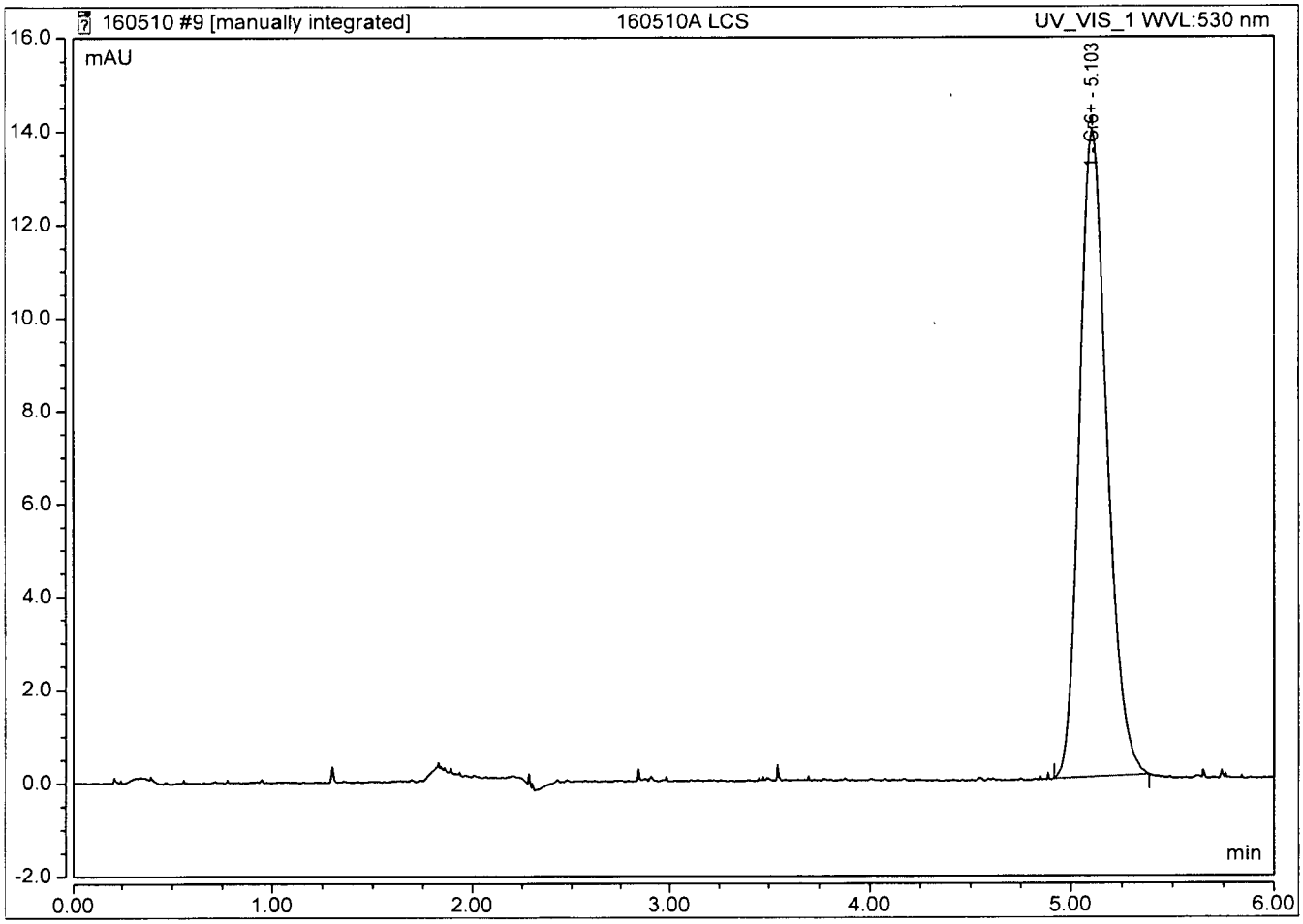
Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	10.00	9.95	99.5	90-110	05/10/16	05/10/16	#2187-160510A-AZ34899

Comments: _____

Peak Integration Report

Sample Name:	**160510A LCS**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 11:33**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.10	Cr6+	BMB*	2.163	13.909	9.9538✓
		TOTAL:		2.16	13.91	9.95



Algorithm Check
y=mx+b
x=9.95✓
MM 5/23/16

Matrix Spike Recoveries

WETLAB

APPL ID: **160510W-34899 MS - 207676**

Sample ID: AZ34899

Client ID: N019571-001/MW-54-85-EB-Q216

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

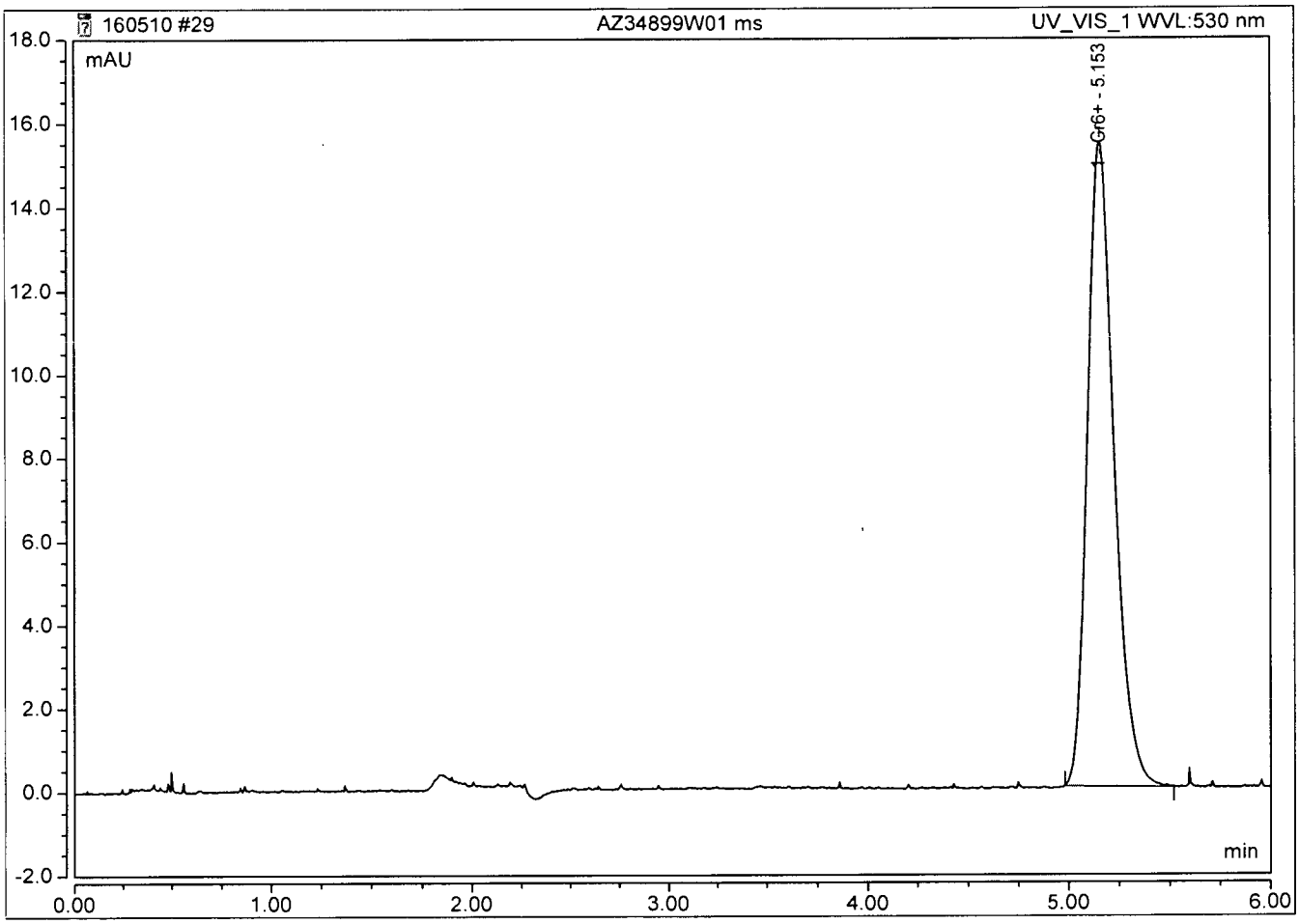
Method	Compound Name	Spike Lvl ug/L	Matrix Res ug/L	SPK Res ug/L	DUP Res ug/L	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 218.7	HEXAVALENT CHROM	10.00	0.16	10.8	11.0	106	108	1.8	20	90-110	05/10/16	05/10/16	05/10/16	05/10/16	207676	AZ34899

Comments: _____

Peak Integration Report

Sample Name:	**AZ34899W01 ms**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 14:32**	*Run Time:*	**6.00**

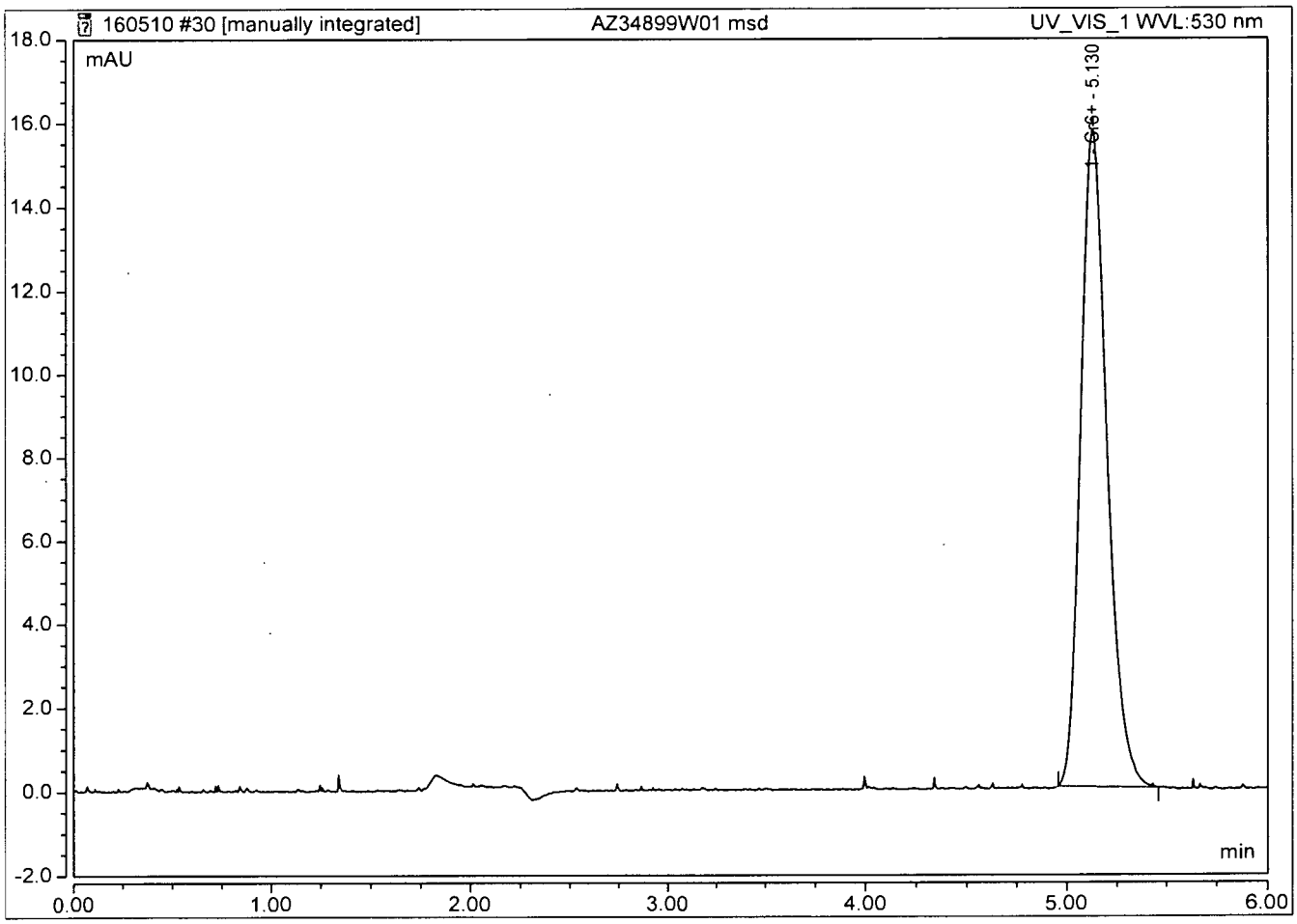
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.15	Cr6+	BMB	2.347	15.429	10.8028
		TOTAL:		2.35	15.43	10.80



Peak Integration Report

Sample Name:	**AZ34899W01 msd**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 14:40**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.13	Cr6+	BMB*	2.380	15.708	10.9527
		TOTAL:		2.38	15.71	10.95



7199 Hexavalent Chromium Standard Prep

Prep'd by: DT
Prep Date: 1/22/16
Exp Date: 7/22/16

100 ppm CCV: 1mL of 1000 ppm Cr6+ o2si lot 1054163-33199 (exp 12/8/15) brought up to 100 mL with DI
100 ppm ICV: 1 mL of 1000 ppm Cr6+ CPI lot 13C150-33180 (exp 12/14/16) brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 4/19/16
Exp Date: 4/20/16

1000 ppb CCV: 1mL of 100 ppm CCV (prep: 1/22/16) and 1 mL of preservative brought up to 100 mL with DI
1000 ppb ICV: 1 mL of 100 ppm ICV (prep: 1/22/16) and 1 mL of preservtive brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 4/19/16
Exp Date: 4/20/16

				ICAL #1	ICAL #2	ICAL #3	ICAL #4	ICAL #5
	ug/L	Prep date	Exp Date	mL	mL	mL	mL	mL
CCV Stock	1000	04/19/16	04/20/16	-	-	1	1	1
ICAL #4	10	04/19/16	04/20/16	10	10	-	-	-
Brought up w/ DI to final volume of (mL):				200	100	200	100	50
Final Conc Cr6+ (ug/L):				0.50	1.00	5.00	10.00	20.00
CCV made the same as ICAL#4								
ICV/LCS: 1 mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 100 mL DI								
MS/MSD: 0.25 mL mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 25 mL of sample								

Preservative added to all standards:
0.25 mL into 25 mL of standard
0.5 mL into 50 mL of standard
1 mL into 100 mL of standard

7199 Hexavalent Chromium Standard Prep

Prep'd by: DT
Prep Date: 1/22/16
Exp Date: 7/22/16

100 ppm CCV: 1mL of 1000 ppm Cr6+ o2si lot 1054163-33199 (exp 12/8/15) brought up to 100 mL with DI
100 ppm ICV: 1 mL of 1000 ppm Cr6+ CPI lot 13C150-33180 (exp 12/14/16) brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 5/10/16
Exp Date: 5/11/16

1000 ppb CCV: 1mL of 100 ppm CCV (prep: 1/22/16) and 1 mL of preservative brought up to 100 mL with DI
1000 ppb ICV: 1 mL of 100 ppm ICV (prep: 1/22/16) and 1 mL of preservtive brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 5/10/16
Exp Date: 5/11/16

CCV: 1 mL of CCV stock (prep: 5/10/16) brought up to 100 mL
ICV/LCS: 1 mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 100 mL DI
MS/MSD: 0.25 mL mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 25 mL of sample

Preservative added to all standards:
0.25 mL into 25 mL of standard
0.5 mL into 50 mL of standard
1 mL into 100 mL of standard

7199 Injection Log

Directory: I:\Dionex\Charlie\HexaChrome\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
27	19 Apr 2016	14:35	CB		160419	1.
28	19 Apr 2016	14:43	I Cal 0.5		160419	1.
29	19 Apr 2016	14:52	I Cal 1.0		160419	1.
30	19 Apr 2016	15:00	I Cal 5.0		160419	1.
31	19 Apr 2016	15:08	I Cal 10		160419	1.
32	19 Apr 2016	15:17	I Cal 20		160419	1.
33	19 Apr 2016	15:25	ICV 160418		160419	1.
37	19 Apr 2016	15:59	ICB		160419	1.

7199 Injection Log

Directory: I:\Dionex\Charlie\HexaChrome\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
7	10 May 2016	11:16	CCV 160510		160510	1.
8	10 May 2016	11:24	CCB		160510	1.
9	10 May 2016	11:33	160510A LCS		160510	1.
11	10 May 2016	11:49	AZ34899W01		160510	1.
12	10 May 2016	11:58	AZ34900W03		160510	1.
13	10 May 2016	12:06	AZ34901W01		160510	1.
14	10 May 2016	12:15	AZ34902W03		160510	1.
15	10 May 2016	12:23	AZ34903W01		160510	1.
16	10 May 2016	12:31	AZ34904W03		160510	1.
17	10 May 2016	12:40	AZ34905W01		160510	1.
18	10 May 2016	12:48	AZ34906W01		160510	1.
21	10 May 2016	13:20	CCV 160510		160510	1.
22	10 May 2016	13:29	CCB		160510	1.
29	10 May 2016	14:32	AZ34899W01 ms		160510	1.
30	10 May 2016	14:40	AZ34899W01 msd		160510	1.
32	10 May 2016	14:57	CCV 160510		160510	1.
33	10 May 2016	15:06	CCB		160510	1.

May 18, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019590

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 02, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N019590-002 and N019590-007 due to matrix interference. Samples were analyzed at lower dilution however retention time criteria and matrix spike were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (3.8 ug/L) and hexavalent chromium (2.7 ug/L) for sample N019590-002 (MW-23-080-Q216) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Method Blank (MB-R108345) has hit greater than 0.02ppb. Sample associated with this batch was non-detect (ND) therefore, reanalysis of the sample was not necessary.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for sample N019590-007 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (3.8 ug/L) and hexavalent chromium (2.7 ug/L) for sample N019590-002 (MW-23-080-Q216) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 4.1 and 3.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

Matrix Spike (MS) is outside recovery criteria for Chromium on QC sample N019560-012B-MS since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *18-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019590
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019590-001A	MW-62-065-Q216	Groundwater	5/2/2016 12:45:00 PM	5/2/2016	5/18/2016
N019590-001B	MW-62-065-Q216	Groundwater	5/2/2016 12:45:00 PM	5/2/2016	5/18/2016
N019590-001C	MW-62-065-Q216	Groundwater	5/2/2016 12:45:00 PM	5/2/2016	5/18/2016
N019590-002A	MW-23-080-Q216	Groundwater	5/2/2016 2:23:00 PM	5/2/2016	5/18/2016
N019590-002B	MW-23-080-Q216	Groundwater	5/2/2016 2:23:00 PM	5/2/2016	5/18/2016
N019590-003A	MW-23-060-Q216	Groundwater	5/2/2016 3:06:00 PM	5/2/2016	5/18/2016
N019590-003B	MW-23-060-Q216	Groundwater	5/2/2016 3:06:00 PM	5/2/2016	5/18/2016
N019590-004A	MW-21-EB-Q216	Groundwater	5/2/2016 11:55:00 AM	5/2/2016	5/18/2016
N019590-004B	MW-21-EB-Q216	Groundwater	5/2/2016 11:55:00 AM	5/2/2016	5/18/2016
N019590-005A	MW-12-Q216	Groundwater	5/2/2016 2:10:00 PM	5/2/2016	5/18/2016
N019590-005B	MW-12-Q216	Groundwater	5/2/2016 2:10:00 PM	5/2/2016	5/18/2016
N019590-005C	MW-12-Q216	Groundwater	5/2/2016 2:10:00 PM	5/2/2016	5/18/2016
N019590-006A	MW-716-Q216	Groundwater	5/2/2016 11:50:00 AM	5/2/2016	5/18/2016
N019590-007A	MW-64BR-Q216	Groundwater	5/2/2016 4:11:00 PM	5/2/2016	5/18/2016
N019590-007B	MW-64BR-Q216	Groundwater	5/2/2016 4:11:00 PM	5/2/2016	5/18/2016
N019590-007C	MW-64BR-Q216	Groundwater	5/2/2016 4:11:00 PM	5/2/2016	5/18/2016
N019590-008A	MW-717-Q216	Groundwater	5/2/2016 3:45:00 PM	5/2/2016	5/18/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019590
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019590-001

Client Sample ID: MW-62-065-Q216
Collection Date: 5/2/2016 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	670	6.6	20		µg/L	100	5/6/2016 08:18 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	690	0.096	5.0		µg/L	5	5/10/2016 01:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 2:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	2.7	0.33	1.0		µg/L	5	5/6/2016 08:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	3.8	0.019	1.0		µg/L	1	5/9/2016 10:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 3:06:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	37	0.33	1.0		µg/L	5	5/6/2016 05:59 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	36	0.019	1.0		µg/L	1	5/9/2016 10:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-EB-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 11:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/6/2016 06:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/9/2016 10:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	1900	16	50		µg/L	250	5/6/2016 06:39 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	2000	0.48	25		µg/L	25	5/10/2016 02:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-716-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/6/2016 07:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 4:11:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/9/2016 12:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509B**	QC Batch: **57284**			PrepDate	**5/4/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/9/2016 10:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-717-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160506A**	QC Batch: **R108316**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/6/2016 07:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108316	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	PBW	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318373

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R108316	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	LCSW	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.933	0.20	5.000	0	98.7	90	110				

Sample ID	N019560-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318376

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.359	0.20						1.500	9.92	20	

Sample ID	N019560-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.585	0.20	5.000	1.500	102	90	110				

Sample ID	N019560-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108316
Client ID:	ZZZZZZ	Batch ID:	R108316	TestNo:	EPA 218.6			Analysis Date:	5/6/2016	SeqNo:	2318378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.436	0.20	5.000	1.500	98.7	90	110	6.585	2.29	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019560-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.674	1.0	25.00	3.866	99.2	90	110				

Sample ID **N019560-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.643	0.20	5.000	1.479	103	90	110				

Sample ID **N019560-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	30.518	1.0	25.00	4.626	104	90	110				

Sample ID **N019560-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.740	0.20	5.000	0.5618	104	90	110				

Sample ID **N019570-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.612	4.0	100.0	99.98	98.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019570-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	905.970	20	500.0	413.1	98.6	90	110				

Sample ID **N019570-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8496.800	200	5000	3340	103	90	110				

Sample ID **N019570-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.099	0.20	1.000	0	110	90	110				

Sample ID **N019570-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.481	1.0	5.000	0.4645	100	90	110				

Sample ID **N019570-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.005	1.0	25.00	20.46	98.2	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019590-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	62.072	1.0	25.00	37.29	99.1	90	110				

Sample ID **N019590-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3121.600	50	1250	1853	102	90	110				

Sample ID **N019590-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Sample ID **N019590-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID **N019590-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1173.700	20	500.0	667.7	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019590-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	27.365	1.0	25.00	2.674	98.8	90	110				

Sample ID **N019590-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108316**
Client ID: **ZZZZZZ**	Batch ID: **R108316**	TestNo: **EPA 218.6**		Analysis Date: **5/6/2016**	SeqNo: **2318422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R108345**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **PBW**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R108345**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **LCSW**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.033	0.20	5.000	0	101	90	110				

Sample ID **N019590-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.297	1.0	5.000	0	106	90	110				

Sample ID **N019606-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	179.538	4.0						185.9	3.47	20	

Sample ID **N019606-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	278.400	4.0	100.0	185.9	92.5	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019606-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	277.966	4.0	100.0	185.9	92.1	90	110	278.4	0.156	20	

Sample ID **N019606-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	155.904	2.0	50.00	105.5	101	90	110				

Sample ID **N019606-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	157.173	2.0	50.00	109.3	95.8	90	110				

Sample ID **N019606-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.530	0.20	1.000	0.4744	106	90	110				

Sample ID **N019606-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.140	1.0	25.00	11.47	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019606-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	41.725	1.0	25.00	18.48	93.0	90	110				

Sample ID **N019606-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.732	1.0	25.00	18.57	101	90	110				

Sample ID **N019606-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1102.010	20	500.0	619.0	96.6	90	110				

Sample ID **N019606-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2670.540	40	1000	1764	90.7	90	110				

Sample ID **N019606-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019606-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5837.450	100	2500	3431	96.2	90	110				

Sample ID **N019606-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5774.400	100	2500	3501	90.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-57284**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108343**
Client ID: **PBW**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-57284**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108343**
Client ID: **LCSW**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.236	1.0	10.00	0	102	85	115				

Sample ID **N019560-002B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108343**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.855	1.0	10.00	0.6707	91.8	75	125				

Sample ID **N019560-002B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108343**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.757	1.0	10.00	0.6707	90.9	75	125	9.855	1.00	20	

Sample ID **N019560-012B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108369**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2110.796	25	10.00	2125	-137	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	4.3	0.11	0.25		mg/L	5	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	16	0.44	1.0		mg/L	20	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 4:11:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R108423	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	PBW	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324464

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R108423	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	LCSW	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324465

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.479	0.050	0.5000	0	95.8	85	115				

Sample ID	N019560-010CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	ZZZZZZ	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.068	0.050						0.08140	17.4	20	

Sample ID	N019560-010CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	ZZZZZZ	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324468

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.586	0.050	0.5000	0.08140	101	75	125				

Sample ID	N019560-010CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108423
Client ID:	ZZZZZZ	Batch ID:	R108423	TestNo:	SM4500-NO3			Analysis Date:	5/12/2016	SeqNo:	2324469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.674	0.050	0.5000	0.08140	118	75	125	0.5861	13.9	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57284**			PrepDate	**5/4/2016**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	5/9/2016 10:01 PM
Manganese	0.91	0.056	0.50		µg/L	1	5/9/2016 10:01 PM
Molybdenum	14	0.039	0.50		µg/L	1	5/9/2016 10:01 PM
Selenium	3.9	0.028	0.50		µg/L	1	5/9/2016 10:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019590
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019590-002

Client Sample ID: MW-23-080-Q216
Collection Date: 5/2/2016 2:23:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160509A**	QC Batch: **57284**			PrepDate	**5/4/2016**	Analyst: **CEI**	
Arsenic	4.0	0.025	0.10		µg/L	1	5/9/2016 10:07 PM
Manganese	4.3	0.056	0.50		µg/L	1	5/9/2016 10:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 3:06:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160509A**	QC Batch: **57284**				PrepDate	**5/4/2016**	Analyst: **CEI**
Arsenic	4.1	0.025	0.10		µg/L	1	5/9/2016 10:23 PM
Manganese	3.6	0.056	0.50		µg/L	1	5/9/2016 10:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160509A**	QC Batch: **57284**				PrepDate	**5/4/2016**	Analyst: **CEI**
Molybdenum	11	0.039	0.50		µg/L	1	5/9/2016 10:34 PM
Selenium	24	0.028	0.50		µg/L	1	5/9/2016 10:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q216
Lab Order:	N019590	**Collection Date:**	5/2/2016 4:11:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019590-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160509A**	QC Batch: **57284**				PrepDate	**5/4/2016**	Analyst: **CEI**
Arsenic	4.2	0.025	0.10		µg/L	1	5/9/2016 10:40 PM
Manganese	990	0.56	5.0		µg/L	10	5/10/2016 02:17 PM
Molybdenum	72	0.19	2.5		µg/L	5	5/10/2016 02:12 PM
Selenium	ND	0.028	0.50		µg/L	1	5/9/2016 10:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-57284**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **PBW**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-57284**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **LCSW**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.228	0.10	10.00	0	102	85	115				
Manganese	103.046	0.50	100.0	0	103	85	115				
Molybdenum	10.802	0.50	10.00	0	108	85	115				
Selenium	9.505	0.50	10.00	0	95.1	85	115				

Sample ID **N019560-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.515	0.10	10.00	1.345	102	75	125				
Molybdenum	39.152	0.50	10.00	26.96	122	75	125				

Sample ID **N019560-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.814	0.10	10.00	1.345	105	75	125	11.52	2.57	20	
Molybdenum	39.026	0.50	10.00	26.96	121	75	125	39.15	0.322	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N019560-012B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2321192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.330	0.10	10.00	2.040	103	75	125				
Manganese	91.371	0.50	100.0	1.159	90.2	75	125				
Selenium	12.237	0.50	10.00	2.488	97.5	75	125				

Sample ID **N019560-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	505.884	2.5	100.0	404.0	102	75	125				

Sample ID **N019560-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	497.873	2.5	100.0	404.0	93.8	75	125	505.9	1.60	20	

Sample ID **N019560-012B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	30.503	2.5	10.00	19.11	114	75	125				

Sample ID **N019560-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/4/2016**	RunNo: **108342**
Client ID: **ZZZZZZ**	Batch ID: **57284**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/9/2016**	SeqNo: **2326884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.863	0.50	10.00	0.9006	89.6	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019590
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019560-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/4/2016	RunNo:	108342
Client ID:	ZZZZZZ	Batch ID:	57284	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/9/2016	SeqNo:	2326885

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.397	0.50	10.00	0.9006	95.0	75	125	9.863	5.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RWQCB ✓; LEVEL III
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled Y; 2. Headspace; 3. Container Intact Y; 4. Seal Present; 5. IR number 2
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	Global ID: Specify State:
Title: Jason McLaren SR. Tech	Phone: 916-786-3302 Fax:		6. Method of Cooling: ICE
Signature: Date: 5/2/16	Sampled By: Jordan Terrano		Sample Temp: 4.1°C
Project Name: PG&E Topock - GMP	Signature: Date: 5/2/16		Courier: ASSET
Project Number: RC000753.0801			Tracking No.:

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Laboratory chain of ASSET Labs to perform the tests indicated below

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019590 - 01	MW-62-065-Q216	5/2/2016	1245		X		X	X	X	X	X	X	E	3	P	BNS	
2	- 02	MW-23-080-Q216	5/2/2016	1423		X		X			X	X		E	2	P	BNS	
2	- 03	MW-23-060-Q216	5/2/2016	1506		X		X			X	X		E	2	P	BNS	
3	- 04	MW-21-EB-Q216	5/2/2016	1155		X					X			E	2	P	BNS	
4	- 05	MW-12-Q216	5/2/2016	1410		X			X	X	X		X	E	3	P	BNS	
5	- 06	MW-716-Q216	5/2/2016	1150		X								E	1	P	B	
6	- 07	MW-64BR-Q216	5/2/2016	1611		X		X	X	X	X	X	X	E	3	P	BNS	
7	- 08	MW-717-Q216	5/2/2016	1545		X								E	1	P	B	
8																		
9																		
10																		
11																		
12																		
13																		

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Jordan Terrano	5/2/16 1645		5/2/16 @ 1630
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	5/2/16 @ 1900		5/2/16 @ 1900
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/2/2016	Workorder:	N019590
Rep sample Temp (Deg C):	4.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: HG 5/4/2016

Reviewed By: 05/09/16

ASSET Laboratories

WORK ORDER Summary

03-May-16

WorkOrder: N019590

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/2/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019590-001A	MW-62-065-Q216	5/2/2016 12:45:00 PM	5/16/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019590-001B			5/16/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019590-001C			5/16/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019590-002A	MW-23-080-Q216	5/2/2016 2:23:00 PM	5/16/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019590-002B			5/16/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019590-003A	MW-23-060-Q216	5/2/2016 3:06:00 PM	5/16/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019590-003B			5/16/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019590-004A	MW-21-EB-Q216	5/2/2016 11:55:00 AM	5/16/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019590-004B			5/16/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019590-005A	MW-12-Q216	5/2/2016 2:10:00 PM	5/16/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019590-005B			5/16/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019590-005C			5/16/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-16

WorkOrder: N019590

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/2/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019590-006A	MW-716-Q216	5/2/2016 11:50:00 AM	5/16/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019590-007A	MW-64BR-Q216	5/2/2016 4:11:00 PM	5/16/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019590-007B			5/16/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019590-007C			5/16/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019590-008A	MW-717-Q216	5/2/2016 3:45:00 PM	5/16/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019590-009A	FOLDER		5/16/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/16/2016		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N019606

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N019606

Item	Pages
Cover Page	1-7
Analytical Result / QC Summary Reports	8-80
Sample Receiving Items	81-88
List of Analysts	89
Raw Data	
SM 2540C	90-100
EPA 218.6	101-314
SM 2320B	315-324
EPA 300.0	325-360
SM 4500-NO3F	361-379
EPA 6010B_Dissolved	380-438
EPA 6020_Dissolved	439-511

May 19, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019606

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 03, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N019606-005 and N019606-006 due to matrix interference. Samples were analyzed at lower dilution however retention time criteria and matrix spike were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Method Blank (MB-R108345) has hit greater than 0.02ppb. Samples reported on this this batch were either non-detect (ND) or greater than 10x the Method Blank detection therefore, reanalysis of the samples was not necessary.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N019606-001B-MS2 and N019606-001B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N019559-007C-MS and N019559-007C-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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CALIFORNIA
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P: 562.219.7435 F: 562.219.7436
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3151 W. Post Rd., Las Vegas, NV 89118
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Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N019606-005, N019606-006, N019606-007, N019606-008, N019606-009, N019606-010, N019606-011, N019606-012 and N019606-013 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) is outside recovery criteria for some analytes on QC samples N019606-011B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N019606-001B-MS, N019606-001B-MSD and N019606-011B-MS since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *19-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019606
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019606-001A	MW-09-Q216	Groundwater	5/3/2016 8:40:00 AM	5/3/2016	5/19/2016
N019606-001B	MW-09-Q216	Groundwater	5/3/2016 8:40:00 AM	5/3/2016	5/19/2016
N019606-001C	MW-09-Q216	Groundwater	5/3/2016 8:40:00 AM	5/3/2016	5/19/2016
N019606-001D	MW-09-Q216	Groundwater	5/3/2016 8:40:00 AM	5/3/2016	5/19/2016
N019606-002A	MW-11-Q216	Groundwater	5/3/2016 9:30:00 AM	5/3/2016	5/19/2016
N019606-002B	MW-11-Q216	Groundwater	5/3/2016 9:30:00 AM	5/3/2016	5/19/2016
N019606-002C	MW-11-Q216	Groundwater	5/3/2016 9:30:00 AM	5/3/2016	5/19/2016
N019606-002D	MW-11-Q216	Groundwater	5/3/2016 9:30:00 AM	5/3/2016	5/19/2016
N019606-003A	MW-904-Q216	Groundwater	5/3/2016 9:40:00 AM	5/3/2016	5/19/2016
N019606-003B	MW-904-Q216	Groundwater	5/3/2016 9:40:00 AM	5/3/2016	5/19/2016
N019606-003C	MW-904-Q216	Groundwater	5/3/2016 9:40:00 AM	5/3/2016	5/19/2016
N019606-003D	MW-904-Q216	Groundwater	5/3/2016 9:40:00 AM	5/3/2016	5/19/2016
N019606-004A	MW-24A-Q216	Groundwater	5/3/2016 8:54:00 AM	5/3/2016	5/19/2016
N019606-004B	MW-24A-Q216	Groundwater	5/3/2016 8:54:00 AM	5/3/2016	5/19/2016
N019606-004C	MW-24A-Q216	Groundwater	5/3/2016 8:54:00 AM	5/3/2016	5/19/2016
N019606-005A	MW-24B-Q216	Groundwater	5/3/2016 9:32:00 AM	5/3/2016	5/19/2016
N019606-005B	MW-24B-Q216	Groundwater	5/3/2016 9:32:00 AM	5/3/2016	5/19/2016
N019606-005C	MW-24B-Q216	Groundwater	5/3/2016 9:32:00 AM	5/3/2016	5/19/2016
N019606-006A	MW-905-Q216	Groundwater	5/3/2016 9:42:00 AM	5/3/2016	5/19/2016
N019606-006B	MW-905-Q216	Groundwater	5/3/2016 9:42:00 AM	5/3/2016	5/19/2016
N019606-006C	MW-905-Q216	Groundwater	5/3/2016 9:42:00 AM	5/3/2016	5/19/2016
N019606-007A	MW-38D-Q216	Groundwater	5/3/2016 11:05:00 AM	5/3/2016	5/19/2016
N019606-007B	MW-38D-Q216	Groundwater	5/3/2016 11:05:00 AM	5/3/2016	5/19/2016
N019606-007C	MW-38D-Q216	Groundwater	5/3/2016 11:05:00 AM	5/3/2016	5/19/2016
N019606-008A	MW-38D-SMT-Q216	Groundwater	5/3/2016 10:32:00 AM	5/3/2016	5/19/2016
N019606-008B	MW-38D-SMT-Q216	Groundwater	5/3/2016 10:32:00 AM	5/3/2016	5/19/2016
N019606-008C	MW-38D-SMT-Q216	Groundwater	5/3/2016 10:32:00 AM	5/3/2016	5/19/2016
N019606-009A	MW-67-260-Q216	Groundwater	5/3/2016 10:37:00 AM	5/3/2016	5/19/2016
N019606-009B	MW-67-260-Q216	Groundwater	5/3/2016 10:37:00 AM	5/3/2016	5/19/2016

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CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019606
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019606-009C	MW-67-260-Q216	Groundwater	5/3/2016 10:37:00 AM	5/3/2016	5/19/2016
N019606-010A	MW-67-225-Q216	Groundwater	5/3/2016 11:57:00 AM	5/3/2016	5/19/2016
N019606-010B	MW-67-225-Q216	Groundwater	5/3/2016 11:57:00 AM	5/3/2016	5/19/2016
N019606-010C	MW-67-225-Q216	Groundwater	5/3/2016 11:57:00 AM	5/3/2016	5/19/2016
N019606-011A	MW-913-Q216	Groundwater	5/3/2016 12:07:00 PM	5/3/2016	5/19/2016
N019606-011B	MW-913-Q216	Groundwater	5/3/2016 12:07:00 PM	5/3/2016	5/19/2016
N019606-011C	MW-913-Q216	Groundwater	5/3/2016 12:07:00 PM	5/3/2016	5/19/2016
N019606-012A	MW-67-185-Q216	Groundwater	5/3/2016 12:49:00 PM	5/3/2016	5/19/2016
N019606-012B	MW-67-185-Q216	Groundwater	5/3/2016 12:49:00 PM	5/3/2016	5/19/2016
N019606-012C	MW-67-185-Q216	Groundwater	5/3/2016 12:49:00 PM	5/3/2016	5/19/2016
N019606-013A	MW-65-225-Q216	Groundwater	5/3/2016 1:47:00 PM	5/3/2016	5/19/2016
N019606-013B	MW-65-225-Q216	Groundwater	5/3/2016 1:47:00 PM	5/3/2016	5/19/2016
N019606-013C	MW-65-225-Q216	Groundwater	5/3/2016 1:47:00 PM	5/3/2016	5/19/2016
N019606-014A	MW-38S-SMT-Q216	Groundwater	5/3/2016 11:52:00 AM	5/3/2016	5/19/2016
N019606-014B	MW-38S-SMT-Q216	Groundwater	5/3/2016 11:52:00 AM	5/3/2016	5/19/2016
N019606-014C	MW-38S-SMT-Q216	Groundwater	5/3/2016 11:52:00 AM	5/3/2016	5/19/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 8:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160505B**	QC Batch: **58308**			PrepDate	**5/5/2016**		Analyst: **QBM**
Total Dissolved Solids (Residue, Filterable)	1800	25	25		mg/L	1	5/5/2016 08:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 9:30:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160505B**	QC Batch: **58308**			PrepDate	**5/5/2016**		Analyst: **QBM**
Total Dissolved Solids (Residue, Filterable)	1400	17	17		mg/L	1	5/5/2016 08:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 9:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160505B**	QC Batch: **58308**			PrepDate	**5/5/2016**		Analyst: **QBM**
Total Dissolved Solids (Residue, Filterable)	1400	17	17		mg/L	1	5/5/2016 08:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-58308	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	5/5/2016	RunNo:	108283
Client ID:	LCSW	Batch ID:	58308	TestNo:	SM2540C			Analysis Date:	5/5/2016	SeqNo:	2317069

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	956.000	10	1000	0	95.6	80	120				

Sample ID	MB-58308	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	5/5/2016	RunNo:	108283
Client ID:	PBW	Batch ID:	58308	TestNo:	SM2540C			Analysis Date:	5/5/2016	SeqNo:	2317070

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N019614-002A-DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	5/5/2016	RunNo:	108283
Client ID:	ZZZZZZ	Batch ID:	58308	TestNo:	SM2540C			Analysis Date:	5/5/2016	SeqNo:	2317079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4300.000	50						4325	0.580	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-001

Client Sample ID: MW-09-Q216
Collection Date: 5/3/2016 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	190	1.3	4.0		µg/L	20	5/9/2016 12:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	200	0.096	5.0		µg/L	5	5/10/2016 05:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 9:30:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	110	0.66	2.0		µg/L	10	5/9/2016 01:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	110	0.019	1.0		µg/L	1	5/10/2016 03:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 9:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	110	0.66	2.0		µg/L	10	5/9/2016 02:14 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	110	0.019	1.0		µg/L	1	5/10/2016 03:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-004

Client Sample ID: MW-24A-Q216
Collection Date: 5/3/2016 8:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	0.47	0.066	0.20		µg/L	1	5/9/2016 02:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/10/2016 03:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-005

Client Sample ID: MW-24B-Q216
Collection Date: 5/3/2016 9:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	11	0.33	1.0		µg/L	5	5/9/2016 02:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	5/10/2016 03:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 9:42:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160510B**	QC Batch: **R108381**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	12	0.33	1.0		µg/L	5	5/10/2016 06:44 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	5/10/2016 03:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 11:05:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **IC6_160509A** QC Batch: **R108345** PrepDate							Analyst: **JJS**
Hexavalent Chromium	18	0.33	1.0		µg/L	5	5/9/2016 03:33 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **ICP7_160510A** QC Batch: **58305** PrepDate **5/5/2016**							Analyst: **CEI**
Chromium	17	0.019	1.0		µg/L	1	5/10/2016 03:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	19	0.33	1.0		µg/L	5	5/9/2016 04:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	5/10/2016 03:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-009

Client Sample ID: MW-67-260-Q216
Collection Date: 5/3/2016 10:37:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	620	6.6	20		µg/L	100	5/9/2016 04:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	670	0.096	5.0		µg/L	5	5/10/2016 07:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 11:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	3400	33	100		µg/L	500	5/9/2016 07:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	3300	0.48	25		µg/L	25	5/10/2016 07:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 12:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	3500	33	100		µg/L	500	5/9/2016 08:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	3300	0.48	25		µg/L	25	5/10/2016 06:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 12:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	1800	13	40		µg/L	200	5/9/2016 05:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	1800	0.48	25		µg/L	25	5/10/2016 07:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160510B**	QC Batch: **R108381**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	130	1.3	4.0		µg/L	20	5/10/2016 07:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	130	0.019	1.0		µg/L	1	5/10/2016 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160509A**	QC Batch: **R108345**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/9/2016 06:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160510A**	QC Batch: **58305**			PrepDate	**5/5/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/10/2016 04:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108345	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108345		
Client ID:	PBW	Batch ID:	R108345	TestNo:	EPA 218.6			Analysis Date:	5/9/2016	SeqNo:	2320267		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	LCS-R108345	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108345		
Client ID:	LCSW	Batch ID:	R108345	TestNo:	EPA 218.6			Analysis Date:	5/9/2016	SeqNo:	2320268		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.033	0.20	5.000	0	101	90	110						

Sample ID	N019590-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108345		
Client ID:	ZZZZZZ	Batch ID:	R108345	TestNo:	EPA 218.6			Analysis Date:	5/9/2016	SeqNo:	2320270		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.297	1.0	5.000	0	106	90	110						

Sample ID	N019606-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108345		
Client ID:	ZZZZZZ	Batch ID:	R108345	TestNo:	EPA 218.6			Analysis Date:	5/9/2016	SeqNo:	2320272		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	179.538	4.0						185.9	3.47	20			

Sample ID	N019606-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108345		
Client ID:	ZZZZZZ	Batch ID:	R108345	TestNo:	EPA 218.6			Analysis Date:	5/9/2016	SeqNo:	2320273		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	278.400	4.0	100.0	185.9	92.5	90	110						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019606-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	277.966	4.0	100.0	185.9	92.1	90	110	278.4	0.156	20	

Sample ID **N019606-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	155.904	2.0	50.00	105.5	101	90	110				

Sample ID **N019606-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	157.173	2.0	50.00	109.3	95.8	90	110				

Sample ID **N019606-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.530	0.20	1.000	0.4744	106	90	110				

Sample ID **N019606-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108345**
Client ID: **ZZZZZZ** Batch ID: **R108345** TestNo: **EPA 218.6** Analysis Date: **5/9/2016** SeqNo: **2320284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.140	1.0	25.00	11.47	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019606-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	41.725	1.0	25.00	18.48	93.0	90	110				

Sample ID **N019606-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.732	1.0	25.00	18.57	101	90	110				

Sample ID **N019606-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1102.010	20	500.0	619.0	96.6	90	110				

Sample ID **N019606-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2670.540	40	1000	1764	90.7	90	110				

Sample ID **N019606-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**N019606-010AMS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**108345**
Client ID:	**ZZZZZZ**	Batch ID:	**R108345**	TestNo:	**EPA 218.6**			Analysis Date:	**5/9/2016**	SeqNo:	**2320308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5837.450	100	2500	3431	96.2	90	110				

Sample ID	**N019606-011AMS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**108345**
Client ID:	**ZZZZZZ**	Batch ID:	**R108345**	TestNo:	**EPA 218.6**			Analysis Date:	**5/9/2016**	SeqNo:	**2320312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5774.400	100	2500	3501	90.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108381	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108381		
Client ID:	PBW	Batch ID:	R108381	TestNo:	EPA 218.6			Analysis Date:	5/10/2016	SeqNo:	2322917		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R108381	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108381		
Client ID:	LCSW	Batch ID:	R108381	TestNo:	EPA 218.6			Analysis Date:	5/10/2016	SeqNo:	2322918		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		4.875	0.20	5.000	0	97.5	90	110					

Sample ID	N019607-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108381		
Client ID:	ZZZZZZ	Batch ID:	R108381	TestNo:	EPA 218.6			Analysis Date:	5/10/2016	SeqNo:	2322920		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		0.145	0.20						0.1387	0	20		

Sample ID	N019607-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108381		
Client ID:	ZZZZZZ	Batch ID:	R108381	TestNo:	EPA 218.6			Analysis Date:	5/10/2016	SeqNo:	2322921		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.102	0.20	1.000	0.1387	96.3	90	110					

Sample ID	N019607-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108381		
Client ID:	ZZZZZZ	Batch ID:	R108381	TestNo:	EPA 218.6			Analysis Date:	5/10/2016	SeqNo:	2322922		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.147	0.20	1.000	0.1387	101	90	110	1.102	3.98	20		

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019606-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108381**
Client ID: **ZZZZZZ** Batch ID: **R108381** TestNo: **EPA 218.6** Analysis Date: **5/10/2016** SeqNo: **2322926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36.175	1.0	25.00	12.13	96.2	90	110				

Sample ID **N019606-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108381**
Client ID: **ZZZZZZ** Batch ID: **R108381** TestNo: **EPA 218.6** Analysis Date: **5/10/2016** SeqNo: **2322928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	230.044	4.0	100.0	126.7	103	90	110				

Sample ID **N019607-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108381**
Client ID: **ZZZZZZ** Batch ID: **R108381** TestNo: **EPA 218.6** Analysis Date: **5/10/2016** SeqNo: **2322930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3355.520	40	1000	2364	99.2	90	110				

Sample ID **N019607-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108381**
Client ID: **ZZZZZZ** Batch ID: **R108381** TestNo: **EPA 218.6** Analysis Date: **5/10/2016** SeqNo: **2322932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	319.112	4.0	100.0	217.4	102	90	110				

Sample ID **N019607-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108381**
Client ID: **ZZZZZZ** Batch ID: **R108381** TestNo: **EPA 218.6** Analysis Date: **5/10/2016** SeqNo: **2322934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0.1151	96.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019607-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108381
Client ID:	ZZZZZZ	Batch ID:	R108381	TestNo:	EPA 218.6			Analysis Date:	5/10/2016	SeqNo:	2322942

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.145	0.20	1.000	0.09000	105	90	110				

Sample ID	N019607-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108381
Client ID:	ZZZZZZ	Batch ID:	R108381	TestNo:	EPA 218.6			Analysis Date:	5/10/2016	SeqNo:	2322944

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.416	1.0	5.000	0.5290	97.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-58305**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/5/2016**	RunNo: **108369**
Client ID: **PBW**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.176	1.0									

Sample ID **LCS-58305**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/5/2016**	RunNo: **108369**
Client ID: **LCSW**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.726	1.0	10.00	0	97.3	85	115				

Sample ID **N019606-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/5/2016**	RunNo: **108369**
Client ID: **ZZZZZZ**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	204.292	5.0	10.00	202.3	19.9	75	125				S

Sample ID **N019606-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/5/2016**	RunNo: **108369**
Client ID: **ZZZZZZ**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	203.342	5.0	10.00	202.3	10.4	75	125	204.3	0.466	20	S

Sample ID **N019606-011B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/5/2016**	RunNo: **108369**
Client ID: **ZZZZZZ**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	3116.023	25	10.00	3322	-2060	75	125				S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-001

Client Sample ID: MW-09-Q216
Collection Date: 5/3/2016 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160504E**	QC Batch: **R108282**			PrepDate			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	5/4/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-002

Client Sample ID: MW-11-Q216
Collection Date: 5/3/2016 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160504E**	QC Batch: **R108282**			PrepDate			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	91	1.2	5.0		mg/L	1	5/4/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-003

Client Sample ID: MW-904-Q216
Collection Date: 5/3/2016 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160504E**	QC Batch: **R108282**			PrepDate			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	91	1.2	5.0		mg/L	1	5/4/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R108282**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **LCSW**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101.053	5.0	100.0	0	101	85	115				

Sample ID **MB-R108282**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **PBW**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N019606-001DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **ZZZZZZ**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	226.316	5.0	100.0	130.5	95.8	75	125				

Sample ID **N019606-001DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **ZZZZZZ**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	227.368	5.0	100.0	130.5	96.8	75	125	226.3	0.464	20	

Sample ID **N019606-002DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **ZZZZZZ**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	90.526	5.0						90.53	0	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-001

Client Sample ID: MW-09-Q216
Collection Date: 5/3/2016 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**				PrepDate			Analyst: **QBM**
Bromide	ND	0.023	1.0		mg/L	2	5/9/2016 03:43 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**				PrepDate			Analyst: **QBM**
Chloride	720	3.9	100		mg/L	200	5/9/2016 05:33 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**				PrepDate			Analyst: **QBM**
Sulfate	250	3.3	25		mg/L	50	5/9/2016 10:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-002

Client Sample ID: MW-11-Q216
Collection Date: 5/3/2016 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**				PrepDate			Analyst: **QBM**
Bromide	ND	0.023	1.0		mg/L	2	5/9/2016 04:15 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**				PrepDate			Analyst: **QBM**
Chloride	520	1.9	50		mg/L	100	5/9/2016 05:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**				PrepDate			Analyst: **QBM**
Sulfate	190	1.3	10		mg/L	20	5/9/2016 11:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-003

Client Sample ID: MW-904-Q216
Collection Date: 5/3/2016 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**				PrepDate			Analyst: **QBM**
Bromide	ND	0.023	1.0		mg/L	2	5/9/2016 04:30 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**				PrepDate			Analyst: **QBM**
Chloride	530	1.9	50		mg/L	100	5/9/2016 06:04 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**				PrepDate			Analyst: **QBM**
Sulfate	190	1.3	10		mg/L	20	5/9/2016 11:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R108466_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	PBW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326700

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R108466_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	LCSW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326701

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.460	0.50	2.500	0	98.4	90	110				

Sample ID	N019606-001DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326705

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.598	1.0						0.6420	0	20	

Sample ID	N019607-003DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326709

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	5.476	1.0	5.000	0.8640	92.2	80	120				

Sample ID	N019607-003DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326710

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	5.366	1.0	5.000	0.8640	90.0	80	120	5.476	2.03	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R108466_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	PBW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326649

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R108466_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	LCSW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326650

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.503	0.50	2.500	0	100	90	110				

Sample ID	N019591-002CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326657

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	367.950	25	125.0	234.8	106	80	120				

Sample ID	N019591-002CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326658

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	363.100	25	125.0	234.8	103	80	120	368.0	1.33	20	

Sample ID	N019592-006CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326675

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	149.440	10	50.00	98.94	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N019610-009CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2329357

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	50.600	5.0						50.57	0.0593	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R108466_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	PBW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326773

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R108466_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	LCSW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326774

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.960	0.50	5.000	0	99.2	90	110				

Sample ID	N019606-001DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326782

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	481.950	25	250.0	250.4	92.6	80	120				

Sample ID	N019606-001DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326783

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	480.900	25	250.0	250.4	92.2	80	120	482.0	0.218	20	

Sample ID	N019610-009CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326961

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	45.360	5.0						43.26	4.74	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 8:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	11	0.44	1.0		mg/L	20	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 9:30:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	6.0	0.22	0.50		mg/L	10	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 9:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	6.1	0.11	0.25		mg/L	5	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 8:54:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 9:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-006

Client Sample ID: MW-905-Q216
Collection Date: 5/3/2016 9:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 11:05:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 10:37:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.58	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 11:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	26	1.1	2.5		mg/L	50	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 12:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	26	1.1	2.5		mg/L	50	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 12:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	67	2.2	5.0		mg/L	100	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.0	0.11	0.25		mg/L	5	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.24	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R108493	**MBLK**	**4500N03F_W**	**mg/L**		**108493**
Client ID: **PBW**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2328761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R108493	**LCS**	**4500N03F_W**	**mg/L**		**108493**
Client ID: **LCSW**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2328762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.1	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019606-001CDUP	**DUP**	**4500N03F_W**	**mg/L**		**108493**
Client ID: **ZZZZZZ**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	10.664	1.0						10.51	1.47	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019606-001CMS	**MS**	**4500N03F_W**	**mg/L**		**108493**
Client ID: **ZZZZZZ**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	21.644	1.0	10.00	10.51	111	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019606-001CMSD	**MSD**	**4500N03F_W**	**mg/L**		**108493**
Client ID: **ZZZZZZ**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	20.608	1.0	10.00	10.51	101	75	125	21.64	4.90	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-001

Client Sample ID: MW-09-Q216
Collection Date: 5/3/2016 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160514B**	QC Batch: **58387**			PrepDate	**5/11/2016**		Analyst: **CEI**
Boron	820	38	100		ug/L	1	5/14/2016 03:38 PM
Calcium	110000	28	500		ug/L	1	5/14/2016 03:38 PM
Iron	ND	1.8	20		ug/L	1	5/14/2016 03:38 PM
Magnesium	27000	4.4	100		ug/L	1	5/14/2016 03:38 PM
Sodium	480000	290	12000		ug/L	25	5/15/2016 09:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-002

Client Sample ID: MW-11-Q216
Collection Date: 5/3/2016 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160514B**	QC Batch: **58387**			PrepDate	**5/11/2016**	Analyst: **CEI**	
Boron	510	38	100		ug/L	1	5/14/2016 03:45 PM
Calcium	120000	28	500		ug/L	1	5/14/2016 03:45 PM
Iron	ND	1.8	20		ug/L	1	5/14/2016 03:45 PM
Magnesium	18000	4.4	100		ug/L	1	5/14/2016 03:45 PM
Sodium	310000	290	12000		ug/L	25	5/15/2016 09:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-003

Client Sample ID: MW-904-Q216
Collection Date: 5/3/2016 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160514B**	QC Batch: **58387**			PrepDate	**5/11/2016**	Analyst: **CEI**	
Boron	510	38	100		ug/L	1	5/14/2016 03:51 PM
Calcium	120000	28	500		ug/L	1	5/14/2016 03:51 PM
Iron	ND	1.8	20		ug/L	1	5/14/2016 03:51 PM
Magnesium	19000	4.4	100		ug/L	1	5/14/2016 03:51 PM
Sodium	330000	290	12000		ug/L	25	5/15/2016 09:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-58387	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108486
Client ID:	PBW	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/15/2016	SeqNo:	2327890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	66.185	500									

Sample ID	LCS2-58387	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108486
Client ID:	LCSW	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/15/2016	SeqNo:	2327891

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20669.769	500	20000	0	103	85	115				

Sample ID	N019606-001B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108486
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/15/2016	SeqNo:	2327967

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	483366.224	12000	20000	481600	8.67	75	125				S

Sample ID	N019606-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108486
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/15/2016	SeqNo:	2327968

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	486714.580	12000	20000	481600	25.4	75	125	483400	0.690	20	S

Sample ID	MB-58387	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108477
Client ID:	PBW	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2328318

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	4.514	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LCS1-58387	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108477
Client ID:	LCSW	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2328319

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4803.011	100	5000	0	96.1	85	115				
Calcium	8901.903	500	10000	0	89.0	85	115				
Iron	98.227	20	100.0	0	98.2	85	115				
Magnesium	9643.996	100	10000	0	96.4	85	115				

Sample ID	N019559-007C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108477
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2328323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5272.942	100	5000	199.5	101	75	125				
Calcium	80578.936	500	10000	72050	85.3	75	125				
Iron	146.759	20	100.0	42.36	104	75	125				
Magnesium	30654.401	100	10000	23280	73.7	75	125				S

Sample ID	N019559-007C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108477
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2328324

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5292.634	100	5000	199.5	102	75	125	5273	0.373	20	
Calcium	85746.128	500	10000	72050	137	75	125	80580	6.21	20	S
Iron	146.309	20	100.0	42.36	104	75	125	146.8	0.307	20	
Magnesium	30727.403	100	10000	23280	74.4	75	125	30650	0.238	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-001

Client Sample ID: MW-09-Q216
Collection Date: 5/3/2016 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	1.8	0.025	0.10		µg/L	1	5/10/2016 03:19 PM
Manganese	ND	0.056	0.50		µg/L	1	5/10/2016 03:19 PM
Molybdenum	4.5	0.039	0.50		µg/L	1	5/10/2016 03:19 PM
Selenium	5.7	0.028	0.50		µg/L	1	5/10/2016 03:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-002

Client Sample ID: MW-11-Q216
Collection Date: 5/3/2016 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	5/10/2016 03:25 PM
Manganese	ND	0.056	0.50		µg/L	1	5/10/2016 03:25 PM
Molybdenum	6.3	0.039	0.50		µg/L	1	5/10/2016 03:25 PM
Selenium	4.7	0.028	0.50		µg/L	1	5/10/2016 03:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-003

Client Sample ID: MW-904-Q216
Collection Date: 5/3/2016 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	5/10/2016 03:31 PM
Manganese	ND	0.056	0.50		µg/L	1	5/10/2016 03:31 PM
Molybdenum	6.3	0.039	0.50		µg/L	1	5/10/2016 03:31 PM
Selenium	4.9	0.028	0.50		µg/L	1	5/10/2016 03:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-004

Client Sample ID: MW-24A-Q216
Collection Date: 5/3/2016 8:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	ND	0.025	0.10		µg/L	1	5/10/2016 03:36 PM
Manganese	18	0.056	0.50		µg/L	1	5/10/2016 03:36 PM
Molybdenum	130	0.039	0.50		µg/L	1	5/10/2016 03:36 PM
Selenium	ND	0.028	0.50		µg/L	1	5/10/2016 03:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-May-16*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 9:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	2.8	0.62	2.5		µg/L	25	5/14/2016 01:13 AM
Manganese	95	0.056	0.50		µg/L	1	5/10/2016 03:42 PM
Molybdenum	59	0.97	12		µg/L	25	5/14/2016 01:13 AM
Selenium	ND	0.69	12		µg/L	25	5/14/2016 01:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-006

Client Sample ID: MW-905-Q216
Collection Date: 5/3/2016 9:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	3.1	0.12	0.50		µg/L	5	5/10/2016 07:04 PM
Manganese	98	0.056	0.50		µg/L	1	5/10/2016 03:47 PM
Molybdenum	62	0.19	2.5		µg/L	5	5/10/2016 07:04 PM
Selenium	ND	0.14	2.5		µg/L	5	5/14/2016 01:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-007

Client Sample ID: MW-38D-Q216
Collection Date: 5/3/2016 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	7.6	0.12	0.50		µg/L	5	5/10/2016 07:10 PM
Manganese	56	0.056	0.50		µg/L	1	5/10/2016 03:53 PM
Molybdenum	86	0.97	12		µg/L	25	5/14/2016 01:24 AM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2016 07:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-May-16*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q216
Lab Order:	N019606	**Collection Date:**	5/3/2016 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019606-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_160510B**	QC Batch: **58305**				PrepDate	**5/5/2016**	Analyst: **CEI**
Arsenic	7.9	0.12	0.50		µg/L	5	5/10/2016 07:15 PM
Manganese	74	0.056	0.50		µg/L	1	5/10/2016 03:58 PM
Molybdenum	84	0.97	12		µg/L	25	5/14/2016 01:30 AM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2016 07:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-009

Client Sample ID: MW-67-260-Q216
Collection Date: 5/3/2016 10:37:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	9.3	0.12	0.50		µg/L	5	5/10/2016 07:21 PM
Manganese	140	0.056	0.50		µg/L	1	5/10/2016 04:04 PM
Molybdenum	88	0.97	12		µg/L	25	5/14/2016 01:35 AM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2016 07:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-010

Client Sample ID: MW-67-225-Q216
Collection Date: 5/3/2016 11:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	3.6	0.025	0.10		µg/L	1	5/10/2016 04:37 PM
Manganese	11	0.056	0.50		µg/L	1	5/10/2016 04:37 PM
Molybdenum	44	0.19	2.5		µg/L	5	5/10/2016 07:27 PM
Selenium	86	0.028	0.50		µg/L	1	5/10/2016 04:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-011

Client Sample ID: MW-913-Q216
Collection Date: 5/3/2016 12:07:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	3.7	0.12	0.50		µg/L	5	5/10/2016 06:20 PM
Manganese	12	0.28	2.5		µg/L	5	5/10/2016 06:20 PM
Molybdenum	45	0.97	12		µg/L	25	5/10/2016 06:25 PM
Selenium	86	0.028	0.50		µg/L	1	5/10/2016 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-012

Client Sample ID: MW-67-185-Q216
Collection Date: 5/3/2016 12:49:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	1.1	0.025	0.10		µg/L	1	5/10/2016 04:48 PM
Manganese	ND	0.056	0.50		µg/L	1	5/10/2016 04:48 PM
Molybdenum	8.9	0.19	2.5		µg/L	5	5/10/2016 07:38 PM
Selenium	340	0.14	2.5		µg/L	5	5/10/2016 07:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-013

Client Sample ID: MW-65-225-Q216
Collection Date: 5/3/2016 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	2.8	0.12	0.50		µg/L	5	5/10/2016 08:00 PM
Manganese	49	0.056	0.50		µg/L	1	5/10/2016 04:54 PM
Molybdenum	52	0.97	12		µg/L	25	5/14/2016 01:41 AM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2016 08:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019606
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019606-014

Client Sample ID: MW-38S-SMT-Q216
Collection Date: 5/3/2016 11:52:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160510B**	QC Batch: **58305**			PrepDate	**5/5/2016**	Analyst: **CEI**	
Arsenic	13	0.025	0.10		µg/L	1	5/10/2016 04:59 PM
Manganese	220	0.28	2.5		µg/L	5	5/10/2016 08:06 PM
Molybdenum	39	0.039	0.50		µg/L	1	5/10/2016 04:59 PM
Selenium	ND	0.028	0.50		µg/L	1	5/10/2016 04:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-58305**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/5/2016**	RunNo: **108371**
Client ID: **PBW**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.067	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-58305**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/5/2016**	RunNo: **108371**
Client ID: **LCSW**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.866	0.10	10.00	0	98.7	85	115				
Manganese	99.252	0.50	100.0	0	99.3	85	115				
Molybdenum	10.101	0.50	10.00	0	101	85	115				
Selenium	9.237	0.50	10.00	0	92.4	85	115				

Sample ID **N019606-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/5/2016**	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.621	0.10	10.00	1.842	97.8	75	125				
Manganese	87.989	0.50	100.0	0	88.0	75	125				
Molybdenum	15.343	0.50	10.00	4.475	109	75	125				
Selenium	13.723	0.50	10.00	5.720	80.0	75	125				

Sample ID **N019606-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/5/2016**	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.597	0.10	10.00	1.842	97.6	75	125	11.62	0.202	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019606-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/5/2016	RunNo:	108371
Client ID:	ZZZZZZ	Batch ID:	58305	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322246

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	87.543	0.50	100.0	0	87.5	75	125	87.99	0.508	20	
Molybdenum	15.150	0.50	10.00	4.475	107	75	125	15.34	1.27	20	
Selenium	14.247	0.50	10.00	5.720	85.3	75	125	13.72	3.75	20	

Sample ID	N019606-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/5/2016	RunNo:	108371
Client ID:	ZZZZZZ	Batch ID:	58305	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	92.412	0.50	10.00	86.13	62.9	75	125				S

Sample ID	N019606-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/5/2016	RunNo:	108371
Client ID:	ZZZZZZ	Batch ID:	58305	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.503	0.50	10.00	3.698	108	75	125				
Manganese	107.681	2.5	100.0	12.05	95.6	75	125				

Sample ID	N019606-011B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/5/2016	RunNo:	108371
Client ID:	ZZZZZZ	Batch ID:	58305	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322254

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	52.155	12	10.00	45.13	70.2	75	125				S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Global ID: Specify State: CA
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	
Title: Jason Mahon SR. Tech	Phone: 916-786-3302 Fax:		

Signature: 5/3/16 Date:
I hereby authorize ASSET Labs to perform the tests indicated below

Sampled By: Nara Tep
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Signature: Date: 5/3/16

Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Sample Receipt Condition: Y N
1. Chilled
2. Headspace
3. Container Intact ✓
4. Seal Present ✓
5. IR number 2
6. Method of Cooling: 1 CE
Sample Temp: 5.0, 1.7, 1.4

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Calcium, Dissolved SW 6020, HN03 500 mL poly	IRON, Dissolved SW, 6020, HN03 500 mL poly	Sodium, Dissolved SW, 6020 HN03 500 mL poly	Boron, Dissolved SW, 6020, HN03 500 mL poly	Magnesium, Dissolved SW, 6020, HN03 500 mL poly	Chloride, E300 1000 mL poly	Alkalinity, Total as CaC03 1000 mL poly	TDS, SM2540C 1000 mL poly	Bromide, E300 1000 mL poly	Sulfate, E300 1000 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019606 -1	MW-09-Q216	5/3/2016	840		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	4	P	BNS	
2	-2	MW-11-Q216	5/3/2016	930		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	4	P	BNS	
2	-3	MW-904-Q216	5/3/2016	940		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	E	4	P	BNS	
3	-4	MW-24A-Q216	5/3/2016	854		X		X	X	X	X	X	X											E	3	P	BNS	
4	-5	MW-24B-Q216	5/3/2016	932		X		X	X	X	X	X	X											E	3	P	BNS	
5	-6	MW-905-Q216	5/3/2016	942		X		X	X	X	X	X	X											E	3	P	BNS	
6	-7	MW-38D-Q216	5/3/2016	1105		X		X	X	X	X	X	X											E	3	P	BNS	
7	-8	MW-38D-SMT-Q216	5/3/2016	1032		X		X	X	X	X	X	X											E	3	P	BNS	
8	-9	MW-67-260-Q216	5/3/2016	1037		X		X	X	X	X	X	X											E	3	P	BNS	
9	-10	MW-67-225-Q216	5/3/2016	1157		X		X	X	X	X	X	X											E	3	P	BNS	
10	-11	MW-913-Q216	5/3/2016	1207		X		X	X	X	X	X	X											E	3	P	BNS	
11	-12	MW-67-185-Q216	5/3/2016	1249		X		X	X	X	X	X	X											E	3	P	BNS	
12	-13	MW-65-225-Q216	5/3/2016	1347		X		X	X	X	X	X	X											E	3	P	BNS	
13	-14	MW-38S-SMT-Q216	5/3/2016	1152		X		X	X	X	X	X	X											E	3	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tep	5/3/16 1655		5/3/16 @ 1655
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	5/3/16 @ 1900		5/3/16 @ 1900
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days. surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/3/2016	Workorder:	N019606
Rep sample Temp (Deg C):	5.0/1.7/1.4	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: MBC 5/8/2016

Reviewed By: 5/11/16

ASSET Laboratories

WORK ORDER Summary

11-May-16

WorkOrder: N019606

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/3/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019606-001A	MW-09-Q216	5/3/2016 8:40:00 AM	5/17/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-001B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-001C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-001D			5/17/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/17/2016			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/17/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N019606-002A	MW-11-Q216	5/3/2016 9:30:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-002B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-002C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-002D			5/17/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

11-May-16

WorkOrder: N019606

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/3/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019606-002D	MW-11-Q216	5/3/2016 9:30:00 AM	5/17/2016	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			5/17/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N019606-003A	MW-904-Q216	5/3/2016 9:40:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-003B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-003C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-003D			5/17/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/17/2016			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/17/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N019606-004A	MW-24A-Q216	5/3/2016 8:54:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-004B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI

WORK ORDER Summary

11-May-16

WorkOrder: N019606

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/3/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019606-004C	MW-24A-Q216	5/3/2016 8:54:00 AM	5/17/2016	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-005A	MW-24B-Q216	5/3/2016 9:32:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-005B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-005C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-006A	MW-905-Q216	5/3/2016 9:42:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-006B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-006C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-007A	MW-38D-Q216	5/3/2016 11:05:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-007B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-007C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-008A	MW-38D-SMT-Q216	5/3/2016 10:32:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-008B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI

WORK ORDER Summary

11-May-16

WorkOrder: N019606

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/3/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019606-008C	MW-38D-SMT-Q216	5/3/2016 10:32:00 AM	5/17/2016	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-009A	MW-67-260-Q216	5/3/2016 10:37:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-009B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-009C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-010A	MW-67-225-Q216	5/3/2016 11:57:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-010B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-010C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-011A	MW-913-Q216	5/3/2016 12:07:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-011B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-011C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-012A	MW-67-185-Q216	5/3/2016 12:49:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-012B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI

WORK ORDER Summary

11-May-16

WorkOrder: N019606

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/3/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019606-012C	MW-67-185-Q216	5/3/2016 12:49:00 PM	5/17/2016	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-013A	MW-65-225-Q216	5/3/2016 1:47:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-013B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-013C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-014A	MW-38S-SMT-Q216	5/3/2016 11:52:00 AM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019606-014B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	CEI
N019606-014C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019606-015A	FOLDER		5/17/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/17/2016		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N019606**

NAME	TEST METHOD
Quennie Manimtim	SM 2540C, SM 2320B, EPA 300.0
Claire Ignacio	EPA 6010B, EPA 6020
Ryan Balilu	SM 4500-NO3F
Janette Soria	EPA 218.6

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58308 **Analyst:** QBM

ASSET #: N019606 **Date Analyzed:** 5/5/2016

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/19/2016

2nd Level Reviewer: 5/19/2016 Date: ——

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N019606-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.3850–61.3136)*1000000}{40}$$

= 1785 mg/L

Reporting result in two significant figures,

TDS = 1800 mg/L

Julia Ramit 5/19/2016

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/5/2016 8:17:00 A**
Prep End Date: **5/6/2016 12:18:07 P**

Initials/ Date: Silvia Ramit 5/19/2016

Prep Batch **58308** Prep Code: **160.1_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units: **mL / mL** **Temp (°C)180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58308	Water		100	☐	0	0	100	1.000		
MB-58308	Water		100	☐	0	0	100	1.000		
N019606-001D	Groundwater		40	☐	0	0	100	2.500		
N019606-002D	Groundwater		60	☐	0	0	100	1.667		
N019606-003D	Groundwater		60	☐	0	0	100	1.667		
N019607-003D	Groundwater		50	☐	0	0	100	2.000		
N019613-001A	Water		40	☐	0	0	100	2.500		
N019613-002A	Water		20	☐	0	0	100	5.000		
N019614-001A	Water		20	☐	0	0	100	5.000		
N019614-002A	Water		20	☐	0	0	100	5.000		
N019614-002A-DU	Water		20	☐	0	0	100	5.000		
N019637-001B	Groundwater		100	☐	0	0	100	1.000		
N019637-002B	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8392	Glass Fiber Filter, 47mm
8393	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160414A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/5/2016 8:17:00 A**
Prep End Date:

Initials/ Date: Julia Ramit 5/19/2016

Prep Batch **58308** Prep Code: **160.1_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units: mL / mL

Sample ID	Matrix	~~pH~~ Cond, m/cm	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58308 T3	Water		100	☐	0	0	100	1.000		
MB-58308 24	Water		100	☐	0	0	100	1.000		
N019606-001D BB	Groundwater	3050	~~100~~ 40	☐	0	0	100	1.000		
N019606-002D 2AD	Groundwater	2250	~~100~~ 60	☐	0	0	100	1.000		
N019606-003D 4A	Groundwater	2270	~~100~~ 60	☐	0	0	100	1.000		
N019607-003D 2R	Groundwater	2890	~~100~~ 50	☐	0	0	100	1.000		
N019613-001A —	Water	3720	~~100~~ 40	☐	0	0	100	1.000		
N019613-002A 42	Water	7780	~~100~~ 20	☐	0	0	100	1.000		
N019614-001A 61	Water	7060	~~100~~ 20	☐	0	0	100	1.000		
N019614-002A 8	Water	7450	~~100~~ 20	☐	0	0	100	1.000		
N019614-002A-DU 27	Water	7450 ~~943~~ 2	~~100~~ 20	☐	0	0	100	1.000		
N019637-001B AE	Groundwater	943	100 — /	☐	0	0	100	1.000		
N019637-002B AR	Groundwater	744	100	☐	0	0	100	1.000		

1412 - 1391
9992 - 9610

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

~~F8392~~
~~F8393~~
TWSF160414A

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/5/16 24	MB-5830S	100	55.4395 55.4391	55.4393 55.4393	
53	LS-5830S	100	53.8015 53.8017	53.8972 53.8973	
BB	N019606-001D	40	61.3141 61.3136	61.3845 61.3850	
2AA	2D	60	54.7167 54.7168	54.8000 54.7995	
4	3D	60	53.8120 53.8119	53.8932 53.8933	
	N019613-1A	40	63.7268 63.7272	63.8168 63.8147 63.8143	
42	2A	20	54.1499 54.1512 54.1508	54.2447 54.2451	
61	N0196M-001A	20	53.8362 53.8360	53.9203 53.9208	
8	2A	20	54.8127 54.8126	54.8989 54.89981 2	
27	2A DUP	20	55.6208 55.6210	55.7066 55.7070	

Julia Ramit 5/19/2016

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/5/16 RR	N019607-0030	50	63.4042 63.4041	63.9961 63.4901	
AE	N019637-001B	100	61.1555 61.1551	61.2124 61.2119	
AR	2B	100	53.6039 53.6035	53.6484 53.6485	

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
5/6/2016									
MB-58308	100	55.4391	55.4393	2	1	2			MBLK
LCS-58308	100	53.8017	53.8973	956	1	956			LCS
N019606-001D	40	61.3136	61.385	714	2.5	1785	3050	0.585	SAMP
N019606-002D	60	54.7168	54.7995	827	1.66666667	1378.33333	2250	0.613	SAMP
N019606-003D	60	53.8119	53.8933	814	1.66666667	1356.66667	2270	0.598	SAMP
N019607-003D	50	63.9041	63.9901	860	2	1720	2890	0.595	SAMP
N019613-001A	40	63.7272	63.8143	871	2.5	2177.5	3720	0.585	SAMP
N019613-002A	20	54.1508	54.2451	943	5	4715	7780	0.606	SAMP
N019614-001A	20	53.836	53.9208	848	5	4240	7060	0.601	SAMP
N019614-002A	20	54.8126	54.8991	865	5	4325	7450	0.581	SAMP
N019614-002A-DUP	20	55.621	55.707	860	5	4300	7450	0.577	DUP
N019637-001B	100	61.1551	61.2119	568	1	568	943	0.602	SAMP
N019637-002B	100	53.6035	53.6485	450	1	450	744	0.605	SAMP

Julia Ramit 5/19/2016

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108345
ASSET #: N019606

Instrument ID: IC-06
Analyst: JAS
Date Analyzed: 5/9/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)		X				
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.		X				
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)		X				
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

MB result > 0.02ppb. However, all samples associated with the batch are either ND or with concentration > 10X blank detection.
N019606-06A & 13A were overdiluted. For reanalysis.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/16/2016

2nd Level Reviewer _____ 5/18/2016 Date: ~

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108381
ASSET #: N019606

Instrument ID: IC-07
Analyst: JAS
Date Analyzed: 5/10/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

For N019606-006A/006AMS, N019606-013A/013AMS only.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/16/2016

2nd Level Reviewer _____ 5/18/2016 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

Cr^{+6}, μg/L = A * DF

where:

A = μg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N019606-001A** concentration in μg/L is calculated as follows:

Cr^{+6}, μg/L = 9.2943 * 20

= 185.896

Reporting result in two significant figures,

Cr^{+6}, μg/L = 190

ANALYSIS RUN LOG

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 mL
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 mL
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 mL
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 mL
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 mL
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 mL
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 mL
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 mL
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 mL
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 mL
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 mL
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 mL
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 mL
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160509A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/09/16 11:23 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/09/16 11:34 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/09/16 11:44 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/09/16 11:54 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/09/16 12:04 PM	Reported
15	MB-R108345	MBLK	1	Hexavalent Chromium	05/09/16 12:14 PM	Reported
16	LCS-R108345	LCS	1	Hexavalent Chromium	05/09/16 12:24 PM	Reported
17	N019590-007A	SAMP	5	Hexavalent Chromium	05/09/16 12:34 PM	Reported
18	N019590-007AMS	MS	5	Hexavalent Chromium	05/09/16 12:44 PM	Reported
19	N019606-001A	SAMP	20	Hexavalent Chromium	05/09/16 12:54 PM	Reported
20	N019606-001ADUP	DUP	20	Hexavalent Chromium	05/09/16 1:04 PM	Reported
21	N019606-001AMS	MS	20	Hexavalent Chromium	05/09/16 1:14 PM	Reported
22	N019606-0013AMSD	MSD	20	Hexavalent Chromium	05/09/16 1:24 PM	Reported
23	N019606-002A	SAMP	10	Hexavalent Chromium	05/09/16 1:34 PM	Reported
24	N019606-002AMS	MS	10	Hexavalent Chromium	05/09/16 1:44 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/09/16 1:54 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/09/16 2:04 PM	Reported
27	N019606-003A	SAMP	10	Hexavalent Chromium	05/09/16 2:14 PM	Reported
28	N019606-003AMS	MS	10	Hexavalent Chromium	05/09/16 2:24 PM	Reported
29	N019606-004A	SAMP	1	Hexavalent Chromium	05/09/16 2:34 PM	Reported
30	N019606-004AMS	MS	1	Hexavalent Chromium	05/09/16 2:43 PM	Reported
31	N019606-005A	SAMP	5	Hexavalent Chromium	05/09/16 2:53 PM	Reported
32	N019606-005AMS	MS	5	Hexavalent Chromium	05/09/16 3:03 PM	Reported
33	N019606-006A	SAMP	50	Hexavalent Chromium	05/09/16 3:13 PM	Not Reported
34	N019606-006AMS	MS	50	Hexavalent Chromium	05/09/16 3:23 PM	Not Reported
35	N019606-007A	SAMP	5	Hexavalent Chromium	05/09/16 3:33 PM	Reported
36	N019606-007AMS	MS	5	Hexavalent Chromium	05/09/16 3:43 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/09/16 3:53 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/09/16 4:03 PM	Reported
39	N019606-008A	SAMP	5	Hexavalent Chromium	05/09/16 4:17 PM	Reported
40	N019606-008AMS	MS	5	Hexavalent Chromium	05/09/16 4:28 PM	Reported
41	N019606-009A	SAMP	100	Hexavalent Chromium	05/09/16 4:38 PM	Reported
42	N019606-009AMS	MS	100	Hexavalent Chromium	05/09/16 4:48 PM	Reported
43	N019606-010A	SAMP	500	Hexavalent Chromium	05/09/16 4:58 PM	Not Reported
44	N019606-010AMS	MS	500	Hexavalent Chromium	05/09/16 5:08 PM	Not Reported
45	N019606-011A	SAMP	200	Hexavalent Chromium	05/09/16 5:18 PM	Not Reported
46	N019606-011AMS	MS	200	Hexavalent Chromium	05/09/16 5:28 PM	Not Reported
47	N019606-012A	SAMP	200	Hexavalent Chromium	05/09/16 5:38 PM	Reported
48	N019606-012AMS	MS	200	Hexavalent Chromium	05/09/16 5:48 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/09/16 5:58 PM	Reported

INJECTION LOG: 160509A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-4	CCB	1	Hexavalent Chromium	05/09/16 6:08 PM	Reported
51	N019606-013A	SAMP	50	Hexavalent Chromium	05/09/16 6:18 PM	Not Reported
52	N019606-013AMS	MS	50	Hexavalent Chromium	05/09/16 6:28 PM	Not Reported
53	N019606-014A	SAMP	1	Hexavalent Chromium	05/09/16 6:38 PM	Reported
54	N019606-014AMS	MS	1	Hexavalent Chromium	05/09/16 6:48 PM	Reported
55	N019606-005A	SAMP	1	Hexavalent Chromium	05/09/16 6:58 PM	Not Reported
56	N019606-005AMS	MS	1	Hexavalent Chromium	05/09/16 7:08 PM	Not Reported
57	N019606-006A	SAMP	1	Hexavalent Chromium	05/09/16 7:18 PM	Not Reported
58	N019606-006AMS	MS	1	Hexavalent Chromium	05/09/16 7:28 PM	Not Reported
59	N019606-010A	SAMP	500	Hexavalent Chromium	05/09/16 7:38 PM	Reported
60	N019606-010AMS	MS	500	Hexavalent Chromium	05/09/16 7:48 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/09/16 7:57 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/09/16 8:07 PM	Reported
63	N019606-011A	SAMP	500	Hexavalent Chromium	05/09/16 8:17 PM	Reported
64	N019606-011AMS	MS	500	Hexavalent Chromium	05/09/16 8:27 PM	Reported
65	CCV-6	CCV1	1	Hexavalent Chromium	05/09/16 8:37 PM	Reported
66	CCB-6	CCB	1	Hexavalent Chromium	05/09/16 8:47 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160509A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/May/16 22:28:40**
No. of Injections:	**69**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/09/2016 11:23	Finished	
11	BLANK	2	1000	Unknown		05/09/2016 11:34	Finished	
12	CCV-1,CCV,1	3	1000	Unknown		05/09/2016 11:44	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/09/2016 11:54	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/09/2016 12:04	Finished	CCB R160501A
15	MB-H2O,MBLK,1	6	1000	Unknown		05/09/2016 12:14	Finished	MB R160426G
16	LCS-H2O,LCS,1	7	1000	Unknown		05/09/2016 12:24	Finished	LCS(5ppb), IWST-160401B
17	N019590-007A,SAMP,5	8	1000	Unknown		05/09/2016 12:34	Finished	SAMP, 2.0>10mL
18	N019590-007AMS,MS,5	9	1000	Unknown		05/09/2016 12:44	Finished	MS (1ppb), IWST-160401B, 2.0>1
19	N019606-001A,SAMP,20	10	1000	Unknown		05/09/2016 12:54	Finished	SAMP, 0.5>10mL
20	N019606-001ADUP,DUP,20	11	1000	Unknown		05/09/2016 13:04	Finished	DUP, 0.5>10mL
21	N019606-001AMS,MS,20	12	1000	Unknown		05/09/2016 13:14	Finished	MS (5ppb), IWST-160401B, 0.5>1
22	N019606-0013AMSD,MSD,20	13	1000	Unknown		05/09/2016 13:24	Finished	MSD (5ppb), IWST-160401B, 0.5>
23	N019606-002A,SAMP,10	14	1000	Unknown		05/09/2016 13:34	Finished	SAMP, 1.0>10mL
24	N019606-002AMS,MS,10	15	1000	Unknown		05/09/2016 13:44	Finished	MS (5ppb), IWST-160401B, 1.0>1
25	CCV-2,CCV1,1	16	1000	Unknown		05/09/2016 13:54	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/09/2016 14:04	Finished	CCB
27	N019606-003A,SAMP,10	18	1000	Unknown		05/09/2016 14:14	Finished	SAMP, 1.0>10mL
28	N019606-003AMS,MS,10	19	1000	Unknown		05/09/2016 14:24	Finished	MS (5ppb), IWST-160401B, 1.0>1
29	N019606-004A,SAMP,1	20	1000	Unknown		05/09/2016 14:34	Finished	SAMP, 10mL
30	N019606-004AMS,MS,1	21	1000	Unknown		05/09/2016 14:43	Finished	MS (1ppb), IWST-160401B, 10 mL
31	N019606-005A,SAMP,5	22	1000	Unknown		05/09/2016 14:53	Finished	SAMP, 2.0>10mL
32	N019606-005AMS,MS,5	23	1000	Unknown		05/09/2016 15:03	Finished	MS (5ppb), IWST-160401B, 2.0>1
33	N019606-006A,SAMP,50	24	1000	Unknown		05/09/2016 15:13	Finished	SAMP, 0.2> 10mL
34	N019606-006AMS,MS,50	25	1000	Unknown		05/09/2016 15:23	Finished	MS (5ppb), IWST-160401B, 0.2>1
35	N019606-007A,SAMP,5	26	1000	Unknown		05/09/2016 15:33	Finished	SAMP, 2.0>10mL
36	N019606-007AMS,MS,5	27	1000	Unknown		05/09/2016 15:43	Finished	MS (5ppb), IWST-160401B, 2.0>1
37	CCV-3,CCV,1	28	1000	Unknown		05/09/2016 15:53	Finished	CCV @ 5ppb, IWST-160401A
38	CCB-3,CCB,1	29	1000	Unknown		05/09/2016 16:03	Finished	CCB
39	N019606-008A,SAMP,5	1	1000	Unknown		05/09/2016 16:17	Finished	SAMP, 2.0>10mL
40	N019606-008AMS,MS,5	2	1000	Unknown		05/09/2016 16:28	Finished	MS (5ppb), IWST-160401B, 2.0>1
41	N019606-009A,SAMP,100	3	1000	Unknown		05/09/2016 16:38	Finished	SAMP, 0.1> 10mL
42	N019606-009AMS,MS,100	4	1000	Unknown		05/09/2016 16:48	Finished	MS (5ppb), IWST-160401B, 0.1>1
43	N019606-010A,SAMP,500	5	1000	Unknown		05/09/2016 16:58	Finished	SAMP, 20uL>10mL
44	N019606-010AMS,MS,500	6	1000	Unknown		05/09/2016 17:08	Finished	MS (5ppb), IWST-160401B, 20uL>
45	N019606-011A,SAMP,200	7	1000	Unknown		05/09/2016 17:18	Finished	SAMP, 50uL>10mL
46	N019606-011AMS,MS,200	8	1000	Unknown		05/09/2016 17:28	Finished	MS (5ppb), IWST-160401B, 50uL>
47	N019606-012A,SAMP,200	9	1000	Unknown		05/09/2016 17:38	Finished	SAMP, 50uL>10mL
48	N019606-012AMS,MS,200	10	1000	Unknown		05/09/2016 17:48	Finished	MS (5ppb), IWST-160401B, 50uL>
49	CCV-4,CCV1,1	11	1000	Unknown		05/09/2016 17:58	Finished	CCV @ 10ppb, IWST-160401A
50	CCB-4,CCB,1	12	1000	Unknown		05/09/2016 18:08	Finished	CCB
51	N019606-013A,SAMP,50	13	1000	Unknown		05/09/2016 18:18	Finished	SAMP, 0.2>10mL
52	N019606-013AMS,MS,50	14	1000	Unknown		05/09/2016 18:28	Finished	MS (5ppb), IWST-160401B, 0.2>1
53	N019606-014A,SAMP,1	15	1000	Unknown		05/09/2016 18:38	Finished	SAMP, 10mL
54	N019606-014AMS,MS,1	16	1000	Unknown		05/09/2016 18:48	Finished	MS (1ppb), IWST-160401B, 10 mL
55	N019606-005A,SAMP,1	17	1000	Unknown		05/09/2016 18:58	Finished	SAMP, 10mL
56	N019606-005AMS,MS,1	18	1000	Unknown		05/09/2016 19:08	Finished	MS (5ppb), IWST-160401B, 10 mL
57	N019606-006A,SAMP,1	19	1000	Unknown		05/09/2016 19:18	Finished	SAMP, 10mL
58	N019606-006AMS,MS,1	20	1000	Unknown		05/09/2016 19:28	Finished	MS (5ppb), IWST-160401B, 10 mL
59	N019606-010A,SAMP,500	21	1000	Unknown		05/09/2016 19:38	Finished	SAMP, 20uL>10mL
60	N019606-010AMS,MS,500	22	1000	Unknown		05/09/2016 19:48	Finished	MS (5ppb), IWST-160401B, 20uL>
61	CCV-5,CCV,1	23	1000	Unknown		05/09/2016 19:57	Finished	CCV @ 5ppb, IWST-160401A
62	CCB-5,CCB,1	24	1000	Unknown		05/09/2016 20:07	Finished	CCB
63	N019606-011A,SAMP,500	25	1000	Unknown		05/09/2016 20:17	Finished	SAMP, 20uL>10mL
64	N019606-011AMS,MS,500	26	1000	Unknown		05/09/2016 20:27	Finished	MS (5ppb), IWST-160401B, 20uL>
65	CCV-6,CCV1,1	27	1000	Unknown		05/09/2016 20:37	Finished	CCV @ 10ppb, IWST-160401A
66	CCB-6,CCB,1	28	1000	Unknown		05/09/2016 20:47	Finished	CCB
67	SHUTDOWN	29	1000	Unknown		05/09/2016 20:57	Finished	
68	Eluent: R160505A, R160509A	30	1000	Unknown		n.a.	Finished	Eluent
69	PCR: R160504B, R160509B	31	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160420B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	ICV	ICV	1	Hexavalent Chromium	04/20/16 3:44 PM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	04/20/16 5:23 PM	Not Reported
10	ICV	ICV	1	Hexavalent Chromium	04/20/16 5:34 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/20/16 5:43 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/20/16 5:53 PM	Reported
13	LCS-R107042	LCS	1	Hexavalent Chromium	04/20/16 6:03 PM	Reported
14	MB-R107042	MBLK	1	Hexavalent Chromium	04/20/16 6:17 PM	Reported
15	N019464-001A	SAMP	1	Hexavalent Chromium	04/20/16 6:28 PM	Reported
16	N019464-001ADUP	DUP	1	Hexavalent Chromium	04/20/16 6:37 PM	Reported
17	N019464-001AMS	MS	1	Hexavalent Chromium	04/20/16 6:47 PM	Reported
18	N019464-001AMSD	MSD	1	Hexavalent Chromium	04/20/16 6:56 PM	Reported
19	N019464-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:06 PM	Reported
20	N019433-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:15 PM	Reported
21	N019447-008A	SAMP	1	Hexavalent Chromium	04/20/16 7:25 PM	Not Reported
22	N019447-010A	SAMP	1	Hexavalent Chromium	04/20/16 7:34 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/20/16 7:44 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/20/16 7:53 PM	Reported
25	N019449-001A	SAMP	1	Hexavalent Chromium	04/20/16 8:04 PM	Reported
26	N019449-002A	SAMP	10	Hexavalent Chromium	04/20/16 8:15 PM	Not Reported
27	N019449-003A	SAMP	1	Hexavalent Chromium	04/20/16 8:24 PM	Reported
28	N019449-004A	SAMP	1	Hexavalent Chromium	04/20/16 8:34 PM	Reported
29	N019449-005A	SAMP	1	Hexavalent Chromium	04/20/16 8:43 PM	Reported
30	N019449-006A	SAMP	1	Hexavalent Chromium	04/20/16 8:53 PM	Reported
31	N019449-007A	SAMP	1	Hexavalent Chromium	04/20/16 9:02 PM	Reported
32	N019449-008A	SAMP	1	Hexavalent Chromium	04/20/16 9:12 PM	Reported
33	N019449-009A	SAMP	1	Hexavalent Chromium	04/20/16 9:21 PM	Reported
34	N019449-010A	SAMP	1	Hexavalent Chromium	04/20/16 9:31 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/20/16 9:40 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/20/16 9:49 PM	Reported
37	N019347-002A	SAMP	1	Hexavalent Chromium	04/20/16 9:59 PM	Not Reported
38	N019347-002AMS	MS	1	Hexavalent Chromium	04/20/16 10:08 PM	Not Reported
39	MB-R107053	MBLK	1	Hexavalent Chromium	04/20/16 10:18 PM	Reported
40	LCS-R107053	LCS	1	Hexavalent Chromium	04/20/16 10:27 PM	Reported
41	N019448-001A	SAMP	10	Hexavalent Chromium	04/20/16 10:37 PM	Reported
42	N019448-001ADUP	DUP	10	Hexavalent Chromium	04/20/16 10:46 PM	Reported

INJECTION LOG: 160420B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019448-001AMS	MS	10	Hexavalent Chromium	04/20/16 10:56 PM	Reported
44	N019448-001AMSD	MSD	10	Hexavalent Chromium	04/20/16 11:05 PM	Reported
45	N019448-002A	SAMP	1	Hexavalent Chromium	04/20/16 11:15 PM	Not Reported
46	N019448-003A	SAMP	1	Hexavalent Chromium	04/20/16 11:24 PM	Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/20/16 11:34 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/20/16 11:43 PM	Reported
49	N019448-004A	SAMP	1	Hexavalent Chromium	04/20/16 11:53 PM	Reported
50	N019448-005A	SAMP	1	Hexavalent Chromium	04/21/16 12:02 AM	Reported
51	N019448-006A	SAMP	1	Hexavalent Chromium	04/21/16 12:11 AM	Reported
52	N019448-007A	SAMP	1	Hexavalent Chromium	04/21/16 12:21 AM	Reported
53	N019458-001A	SAMP	1	Hexavalent Chromium	04/21/16 12:30 AM	Reported
54	N019458-002A	SAMP	1	Hexavalent Chromium	04/21/16 12:40 AM	Reported
55	N019458-003A	SAMP	1	Hexavalent Chromium	04/21/16 12:49 AM	Reported
56	N019458-004A	SAMP	1	Hexavalent Chromium	04/21/16 12:59 AM	Reported
57	N019458-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:08 AM	Reported
58	N019458-006A	SAMP	1	Hexavalent Chromium	04/21/16 1:18 AM	Not Reported
59	CCV-4	CCV	1	Hexavalent Chromium	04/21/16 1:27 AM	Reported
60	CCB-4	CCB	1	Hexavalent Chromium	04/21/16 1:37 AM	Reported
61	N019458-007A	SAMP	1	Hexavalent Chromium	04/21/16 1:46 AM	Reported
62	N019368-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:55 AM	Not Reported
63	N019368-005AMS	MS	1	Hexavalent Chromium	04/21/16 2:05 AM	Not Reported
64	N019368-006A	SAMP	1	Hexavalent Chromium	04/21/16 2:14 AM	Not Reported
65	N019368-006AMS	MS	1	Hexavalent Chromium	04/21/16 2:24 AM	Not Reported
66	N019368-008A	SAMP	1	Hexavalent Chromium	04/21/16 2:33 AM	Not Reported
67	N019368-008AMS	MS	1	Hexavalent Chromium	04/21/16 2:43 AM	Not Reported
68	N019368-013A	SAMP	1	Hexavalent Chromium	04/21/16 2:52 AM	Not Reported
69	N019368-013AMS	MS	1	Hexavalent Chromium	04/21/16 3:02 AM	Not Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	04/21/16 3:11 AM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	04/21/16 3:21 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160420B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**21/Apr/16 12:22:23**
No. of Injections:	**74**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	ICV,ICV,1,	8	1000	Unknown		04/20/2016 15:44	Interrupted	CCV @5ppb, IWST-160401A
9	BLANK	9	1000	Unknown		04/20/2016 17:23	Finished	CCV @5ppb, IWST-160401A
10	ICV,ICV,1,	10	1000	Unknown		04/20/2016 17:34	Finished	ICV @5ppb, IWST-160401B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/20/2016 17:43	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/20/2016 17:53	Finished	ICB
13	LCS-H2O,LCS,1	13	1000	Unknown		04/20/2016 18:03	Finished	LCS, IWST-160401B
14	MB-H2O,MBLK,1	14	1000	Unknown		04/20/2016 18:17	Finished	MB R160416A
15	N019464-001A,SAMP	15	1000	Unknown		04/20/2016 18:28	Finished	SAMP, 10mL
16	N019464-001ADUP,D	16	1000	Unknown		04/20/2016 18:37	Finished	DUP, 10mL
17	N019464-001AMS,MS	17	1000	Unknown		04/20/2016 18:47	Finished	MS (5ppb) , IWST-160401B, 10
18	N019464-001AMSD,M	18	1000	Unknown		04/20/2016 18:56	Finished	MSD (5ppb) , IWST-160401B,
19	N019464-002A,SAMP	19	1000	Unknown		04/20/2016 19:06	Finished	SAMP, 10mL
20	N019433-002A,SAMP	20	1000	Unknown		04/20/2016 19:15	Finished	SAMP, 10mL
21	N019447-008A,SAMP	21	1000	Unknown		04/20/2016 19:25	Finished	SAMP, 10mL
22	N019447-010A,SAMP	22	1000	Unknown		04/20/2016 19:34	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		04/20/2016 19:44	Finished	CCV @10ppb, IWST-160401A
24	CCB-1,CCB,1,	24	1000	Unknown		04/20/2016 19:53	Finished	CCB R160407B
25	N019449-001A,SAMP	1	1000	Unknown		04/20/2016 20:04	Finished	SAMP, 10mL
26	N019449-002A,SAMP	2	1000	Unknown		04/20/2016 20:15	Finished	SAMP, 1>10mL
27	N019449-003A,SAMP	3	1000	Unknown		04/20/2016 20:24	Finished	SAMP, 10mL
28	N019449-004A,SAMP	4	1000	Unknown		04/20/2016 20:34	Finished	SAMP, 10mL
29	N019449-005A,SAMP	5	1000	Unknown		04/20/2016 20:43	Finished	SAMP, 10mL
30	N019449-006A,SAMP	6	1000	Unknown		04/20/2016 20:53	Finished	SAMP, 10mL
31	N019449-007A,SAMP	7	1000	Unknown		04/20/2016 21:02	Finished	SAMP, 10mL
32	N019449-008A,SAMP	8	1000	Unknown		04/20/2016 21:12	Finished	SAMP, 10mL
33	N019449-009A,SAMP	9	1000	Unknown		04/20/2016 21:21	Finished	SAMP, 10mL
34	N019449-010A,SAMP	10	1000	Unknown		04/20/2016 21:31	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	11	1000	Unknown		04/20/2016 21:40	Finished	CCV @5pb, IWST-160401A
36	CCB-2,CCB,1,	12	1000	Unknown		04/20/2016 21:49	Finished	CCB
37	N019347-002A,SAMP	13	1000	Unknown		04/20/2016 21:59	Finished	SAMP, 10mL
38	N019347-002AMS,MS	14	1000	Unknown		04/20/2016 22:08	Finished	MS (5ppb) , IWST-160401B, 10
39	MB-H2O,MBLK,1	15	1000	Unknown		04/20/2016 22:18	Finished	MB R160416A
40	LCS-H2O,LCS,1	16	1000	Unknown		04/20/2016 22:27	Finished	LCS, IWST-160401B
41	N019448-001A,SAMP	17	1000	Unknown		04/20/2016 22:37	Finished	SAMP, 1>10mL
42	N019448-001ADUP,D	18	1000	Unknown		04/20/2016 22:46	Finished	DUP, 1>10mL
43	N019448-001AMS,MS	19	1000	Unknown		04/20/2016 22:56	Finished	MS (5ppb) , IWST-160401B, 1>
44	N019448-001AMSD,M	20	1000	Unknown		04/20/2016 23:05	Finished	MSD (5ppb) , IWST-160401B,
45	N019448-002A,SAMP	21	1000	Unknown		04/20/2016 23:15	Finished	SAMP, 10mL
46	N019448-003A,SAMP	22	1000	Unknown		04/20/2016 23:24	Finished	SAMP, 10mL
47	CCV-3,CCV1,1,	23	1000	Unknown		04/20/2016 23:34	Finished	CCV @10ppb, IWST-160401A
48	CCB-3,CCB,1,	24	1000	Unknown		04/20/2016 23:43	Finished	CCB
49	N019448-004A,SAMP	25	1000	Unknown		04/20/2016 23:53	Finished	SAMP, 10mL
50	N019448-005A,SAMP	26	1000	Unknown		04/21/2016 00:02	Finished	SAMP, 10mL
51	N019448-006A,SAMP	27	1000	Unknown		04/21/2016 00:11	Finished	SAMP, 10mL
52	N019448-007A,SAMP	28	1000	Unknown		04/21/2016 00:21	Finished	SAMP, 10mL
53	N019458-001A,SAMP	29	1000	Unknown		04/21/2016 00:30	Finished	SAMP, 10mL
54	N019458-002A,SAMP	30	1000	Unknown		04/21/2016 00:40	Finished	SAMP, 10mL
55	N019458-003A,SAMP	31	1000	Unknown		04/21/2016 00:49	Finished	SAMP, 10mL
56	N019458-004A,SAMP	32	1000	Unknown		04/21/2016 00:59	Finished	SAMP, 10mL
57	N019458-005A,SAMP	33	1000	Unknown		04/21/2016 01:08	Finished	SAMP, 10mL
58	N019458-006A,SAMP	34	1000	Unknown		04/21/2016 01:18	Finished	SAMP, 10mL
59	CCV-4,CCV,1,	35	1000	Unknown		04/21/2016 01:27	Finished	CCV @5pb, IWST-160401A
60	CCB-4,CCB,1,	36	1000	Unknown		04/21/2016 01:37	Finished	CCB

61	N019458-007A,SAMP	37	1000	Unknown		04/21/2016 01:46	Finished	SAMP, 10mL
62	N019368-005A,SAMP	38	1000	Unknown		04/21/2016 01:55	Finished	SAMP, 10mL
63	N019368-005AMS,MS	39	1000	Unknown		04/21/2016 02:05	Finished	MS (5ppb) , IWST-160401B, 10
64	N019368-006A,SAMP	40	1000	Unknown		04/21/2016 02:14	Finished	SAMP, 10mL
65	N019368-006AMS,MS	41	1000	Unknown		04/21/2016 02:24	Finished	MS (5ppb) , IWST-160401B, 10
66	N019368-008A,SAMP	42	1000	Unknown		04/21/2016 02:33	Finished	SAMP, 10mL
67	N019368-008AMS,MS	43	1000	Unknown		04/21/2016 02:43	Finished	MS (5ppb) , IWST-160401B, 10
68	N019368-013A,SAMP	44	1000	Unknown		04/21/2016 02:52	Finished	SAMP, 10mL
69	N019368-013AMS,MS	45	1000	Unknown		04/21/2016 03:02	Finished	MS (5ppb) , IWST-160401B, 10
70	CCV-5,CCV1,1,	46	1000	Unknown		04/21/2016 03:11	Finished	CCV @10ppb, IWST-160401A
71	CCB-5,CCB,1,	47	1000	Unknown		04/21/2016 03:21	Finished	CCB
72	SHUTDOWN	48	1000	Unknown		04/21/2016 03:30	Finished	
73	Eluent: R160418B, R	49	1000	Unknown		n.a.	Finished	Eluent
74	PCR: R160420B	50	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160510A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	BLANK	BLANK	1	Hexavalent Chromium	05/10/16 10:40 AM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	05/10/16 10:51 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	05/10/16 11:01 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/10/16 11:10 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	05/10/16 11:20 AM	Reported
13	MB-R108366	MBLK	1	Hexavalent Chromium	05/10/16 11:29 AM	Reported
14	LCS-R108366	LCS	1	Hexavalent Chromium	05/10/16 11:39 AM	Reported
15	N019716-001A	SAMP	5	Hexavalent Chromium	05/10/16 11:51 AM	Reported
16	N019716-002A	SAMP	1	Hexavalent Chromium	05/10/16 12:02 PM	Reported
17	N019716-003A	SAMP	5	Hexavalent Chromium	05/10/16 12:11 PM	Reported
18	N019716-001AREP	DUP	5	Hexavalent Chromium	05/10/16 12:22 PM	Reported
19	N019716-002AREP	DUP	1	Hexavalent Chromium	05/10/16 12:33 PM	Reported
20	N019716-003AREP	DUP	5	Hexavalent Chromium	05/10/16 12:42 PM	Reported
21	N019611-001A	SAMP	50	Hexavalent Chromium	05/10/16 12:51 PM	Not Reported
22	N019611-001ADUP	DUP	50	Hexavalent Chromium	05/10/16 1:01 PM	Not Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	05/10/16 1:10 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	05/10/16 1:20 PM	Reported
25	N019611-001A	SAMP	20	Hexavalent Chromium	05/10/16 1:29 PM	Reported
26	N019611-001ADUP	DUP	20	Hexavalent Chromium	05/10/16 1:39 PM	Reported
27	N019611-001AMS	MS	20	Hexavalent Chromium	05/10/16 1:48 PM	Reported
28	N019611-001AMSD	MSD	20	Hexavalent Chromium	05/10/16 1:58 PM	Reported
29	N019611-002A	SAMP	50	Hexavalent Chromium	05/10/16 2:07 PM	Reported
30	N019611-003A	SAMP	10	Hexavalent Chromium	05/10/16 2:17 PM	Not Reported
31	N019611-004A	SAMP	1	Hexavalent Chromium	05/10/16 2:26 PM	Reported
32	N019611-005A	SAMP	50	Hexavalent Chromium	05/10/16 2:36 PM	Reported
33	N019611-006A	SAMP	1	Hexavalent Chromium	05/10/16 2:45 PM	Reported
34	N019611-007A	SAMP	50	Hexavalent Chromium	05/10/16 2:54 PM	Reported
35	CCV-3	CCV	1	Hexavalent Chromium	05/10/16 3:04 PM	Reported
36	CCB-3	CCB	1	Hexavalent Chromium	05/10/16 3:13 PM	Reported
37	N019611-008A	SAMP	20	Hexavalent Chromium	05/10/16 3:23 PM	Reported
38	N019611-009A	SAMP	1	Hexavalent Chromium	05/10/16 3:32 PM	Reported
39	N019611-010A	SAMP	10	Hexavalent Chromium	05/10/16 3:42 PM	Reported
40	N019611-011A	SAMP	1	Hexavalent Chromium	05/10/16 3:51 PM	Not Reported
41	N019611-012A	SAMP	1	Hexavalent Chromium	05/10/16 4:01 PM	Reported
42	N019611-013A	SAMP	1	Hexavalent Chromium	05/10/16 4:10 PM	Not Reported
43	N019611-014A	SAMP	1	Hexavalent Chromium	05/10/16 4:20 PM	Reported
44	N019611-015A	SAMP	50	Hexavalent Chromium	05/10/16 4:29 PM	Not Reported
45	N019699-001A	SAMP	1	Hexavalent Chromium	05/10/16 4:39 PM	Reported
46	N019611-003A	SAMP	25	Hexavalent Chromium	05/10/16 4:48 PM	Reported
47	CCV-4	CCV1	1	Hexavalent Chromium	05/10/16 4:57 PM	Reported
48	CCB-4	CCB	1	Hexavalent Chromium	05/10/16 5:07 PM	Reported
49	N019611-011A	SAMP	10	Hexavalent Chromium	05/10/16 5:17 PM	Reported

INJECTION LOG: 160510A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019611-013A	SAMP	5	Hexavalent Chromium	05/10/16 5:28 PM	Reported
51	N019611-015A	SAMP	1	Hexavalent Chromium	05/10/16 5:38 PM	Reported
52	MB-R108381	MBLK	1	Hexavalent Chromium	05/10/16 5:47 PM	Reported
53	LCS-R108381	LCS	1	Hexavalent Chromium	05/10/16 5:57 PM	Reported
54	N019607-001A	SAMP	1	Hexavalent Chromium	05/10/16 6:06 PM	Reported
55	N019607-001ADUP	DUP	1	Hexavalent Chromium	05/10/16 6:16 PM	Reported
56	N019607-001AMS	MS	1	Hexavalent Chromium	05/10/16 6:25 PM	Reported
57	N019607-001AMSD	MSD	1	Hexavalent Chromium	05/10/16 6:35 PM	Reported
58	N019606-006A	SAMP	5	Hexavalent Chromium	05/10/16 6:44 PM	Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/10/16 6:58 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/10/16 7:10 PM	Reported
61	N019606-006AMS	MS	5	Hexavalent Chromium	05/10/16 7:19 PM	Reported
62	N019606-013A	SAMP	20	Hexavalent Chromium	05/10/16 7:29 PM	Reported
63	N019606-013AMS	MS	20	Hexavalent Chromium	05/10/16 7:38 PM	Reported
64	N019607-002A	SAMP	200	Hexavalent Chromium	05/10/16 7:47 PM	Reported
65	N019607-002AMS	MS	200	Hexavalent Chromium	05/10/16 7:57 PM	Reported
66	N019607-003A	SAMP	20	Hexavalent Chromium	05/10/16 8:06 PM	Reported
67	N019607-003AMS	MS	20	Hexavalent Chromium	05/10/16 8:16 PM	Reported
68	N019607-004A	SAMP	1	Hexavalent Chromium	05/10/16 8:25 PM	Reported
69	N019607-004AMS	MS	1	Hexavalent Chromium	05/10/16 8:35 PM	Reported
70	N019607-005A	SAMP	1	Hexavalent Chromium	05/10/16 8:44 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/10/16 8:54 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/10/16 9:03 PM	Reported
73	N019607-005AMS	MS	1	Hexavalent Chromium	05/10/16 9:13 PM	Not Reported
74	N019607-006A	SAMP	1	Hexavalent Chromium	05/10/16 9:22 PM	Not Reported
75	N019607-006AMS	MS	1	Hexavalent Chromium	05/10/16 9:32 PM	Not Reported
76	N019607-007A	SAMP	10	Hexavalent Chromium	05/10/16 9:41 PM	Not Reported
77	N019607-007AMS	MS	10	Hexavalent Chromium	05/10/16 9:50 PM	Not Reported
78	N019607-008A	SAMP	1	Hexavalent Chromium	05/10/16 10:00 PM	Not Reported
79	N019607-008AMS	MS	1	Hexavalent Chromium	05/10/16 10:09 PM	Not Reported
80	N019607-009A	SAMP	1	Hexavalent Chromium	05/10/16 10:19 PM	Not Reported
81	N019607-009AMS	MS	1	Hexavalent Chromium	05/10/16 10:28 PM	Not Reported
82	N019607-010A	SAMP	1	Hexavalent Chromium	05/10/16 10:38 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/10/16 10:47 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/10/16 10:57 PM	Reported
85	N019607-010AMS	MS	1	Hexavalent Chromium	05/10/16 11:06 PM	Not Reported
86	N019607-011A	SAMP	1	Hexavalent Chromium	05/10/16 11:16 PM	Reported
87	N019607-011AMS	MS	1	Hexavalent Chromium	05/10/16 11:25 PM	Reported
88	N019607-005A	SAMP	5	Hexavalent Chromium	05/10/16 11:34 PM	Reported
89	N019607-005AMS	MS	5	Hexavalent Chromium	05/10/16 11:44 PM	Reported
90	N019607-009A	SAMP	5	Hexavalent Chromium	05/10/16 11:53 PM	Reported
91	N019607-009AMS	MS	5	Hexavalent Chromium	05/11/16 12:03 AM	Reported
92	N019612-001A	SAMP	10	Hexavalent Chromium	05/11/16 12:12 AM	Reported
93	N019612-002A	SAMP	10	Hexavalent Chromium	05/11/16 12:22 AM	Reported
94	N019612-003A	SAMP	1	Hexavalent Chromium	05/11/16 12:31 AM	Reported
95	CCV-8	CCV1	1	Hexavalent Chromium	05/11/16 12:41 AM	Reported
96	CCB-8	CCB	1	Hexavalent Chromium	05/11/16 12:50 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160510A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/May/16 07:11:02**
No. of Injections:	**99**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	BLANK	1	1000	Unknown		05/10/2016 10:40	Finished	
9	BLANK	2	1000	Unknown		05/10/2016 10:51	Finished	
10	CCV-1,CCV,1,	3	1000	Unknown		05/10/2016 11:01	Finished	CCV @5ppb, IWST-160401A
11	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/10/2016 11:10	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	5	1000	Unknown		05/10/2016 11:20	Finished	CCB R160502C
13	MB-H2O,MBLK,1	6	1000	Unknown		05/10/2016 11:29	Finished	MB R160407B
14	LCS-H2O,LCS,1	7	1000	Unknown		05/10/2016 11:39	Finished	LCS, IWST-160401B
15	N019716-001A,SAMP	8	1000	Unknown		05/10/2016 11:51	Finished	SAMP, 2.0>10mL
16	N019716-002A,SAMP	9	1000	Unknown		05/10/2016 12:02	Finished	SAMP, 10mL
17	N019716-003A,SAMP	10	1000	Unknown		05/10/2016 12:11	Finished	SAMP, 2.0>10mL
18	N019716-001AREP,D	11	1000	Unknown		05/10/2016 12:22	Finished	DUP, 2.0>10mL
19	N019716-002AREP,D	12	1000	Unknown		05/10/2016 12:33	Finished	DUP, 10mL
20	N019716-003AREP,D	13	1000	Unknown		05/10/2016 12:42	Finished	DUP, 2.0>10mL
21	N019611-001A,SAMP	14	1000	Unknown		05/10/2016 12:51	Finished	SAMP, 0.2>10mL
22	N019611-001ADUP,D	15	1000	Unknown		05/10/2016 13:01	Finished	DUP, 0.2>10mL
23	CCV-2,CCV1,1,	16	1000	Unknown		05/10/2016 13:10	Finished	CCV @10ppb, IWST-160401A
24	CCB-2,CCB,1,	17	1000	Unknown		05/10/2016 13:20	Finished	CCB R160426G
25	N019611-001A,SAMP	18	1000	Unknown		05/10/2016 13:29	Finished	SAMP, 0.5>10mL
26	N019611-001ADUP,D	19	1000	Unknown		05/10/2016 13:39	Finished	DUP, 0.5>10mL
27	N019611-001AMS,MS	20	1000	Unknown		05/10/2016 13:48	Finished	MS (5ppb) , IWST-160401B, 0.
28	N019611-001AMSD,M	21	1000	Unknown		05/10/2016 13:58	Finished	MSD (5ppb) , IWST-160401B, (
29	N019611-002A,SAMP	22	1000	Unknown		05/10/2016 14:07	Finished	SAMP, 0.2>10mL
30	N019611-003A,SAMP	23	1000	Unknown		05/10/2016 14:17	Finished	SAMP, 1.0>10mL
31	N019611-004A,SAMP	24	1000	Unknown		05/10/2016 14:26	Finished	SAMP, 10mL
32	N019611-005A,SAMP	25	1000	Unknown		05/10/2016 14:36	Finished	SAMP, 0.2>10mL
33	N019611-006A,SAMP	26	1000	Unknown		05/10/2016 14:45	Finished	SAMP, 10mL
34	N019611-007A,SAMP	27	1000	Unknown		05/10/2016 14:54	Finished	SAMP, 0.2>10mL
35	CCV-3,CCV,1,	28	1000	Unknown		05/10/2016 15:04	Finished	CCV @5pb, IWST-160401A
36	CCB-3,CCB,1,	29	1000	Unknown		05/10/2016 15:13	Finished	CCB
37	N019611-008A,SAMP	30	1000	Unknown		05/10/2016 15:23	Finished	SAMP, 0.5>10mL
38	N019611-009A,SAMP	31	1000	Unknown		05/10/2016 15:32	Finished	SAMP, 10mL
39	N019611-010A,SAMP	32	1000	Unknown		05/10/2016 15:42	Finished	SAMP, 1.0>10mL
40	N019611-011A,SAMP	33	1000	Unknown		05/10/2016 15:51	Finished	SAMP, 10mL
41	N019611-012A,SAMP	34	1000	Unknown		05/10/2016 16:01	Finished	SAMP, 10mL
42	N019611-013A,SAMP	35	1000	Unknown		05/10/2016 16:10	Finished	SAMP, 10mL
43	N019611-014A,SAMP	36	1000	Unknown		05/10/2016 16:20	Finished	SAMP, 10mL
44	N019611-015A,SAMP	37	1000	Unknown		05/10/2016 16:29	Finished	SAMP, 0.2>10mL
45	N019699-001A,SAMP	38	1000	Unknown		05/10/2016 16:39	Finished	SAMP, 10mL
46	N019611-003A,SAMP	39	1000	Unknown		05/10/2016 16:48	Finished	SAMP, 0.4>10mL
47	CCV-4,CCV1,1,	40	1000	Unknown		05/10/2016 16:57	Finished	CCV @10ppb, IWST-160401A
48	CCB-4,CCB,1,	41	1000	Unknown		05/10/2016 17:07	Finished	CCB
49	N019611-011A,SAMP	1	1000	Unknown		05/10/2016 17:17	Finished	SAMP, 1.0>10mL
50	N019611-013A,SAMP	2	1000	Unknown		05/10/2016 17:28	Finished	SAMP, 2.0>10mL
51	N019611-015A,SAMP	3	1000	Unknown		05/10/2016 17:38	Finished	SAMP, 10mL
52	MB-H2O,MBLK,1	4	1000	Unknown		05/10/2016 17:47	Finished	MB R160426G
53	LCS-H2O,LCS,1	5	1000	Unknown		05/10/2016 17:57	Finished	LCS, IWST-160401B
54	N019607-001A,SAMP	6	1000	Unknown		05/10/2016 18:06	Finished	SAMP, 10mL
55	N019607-001ADUP,D	7	1000	Unknown		05/10/2016 18:16	Finished	DUP, 10mL
56	N019607-001AMS,MS	8	1000	Unknown		05/10/2016 18:25	Finished	MS (1ppb), IWST-160401B, 10
57	N019607-001AMSD,M	9	1000	Unknown		05/10/2016 18:35	Finished	MSD (1ppb), IWST-160401B, 1
58	N019606-006A,SAMP	10	1000	Unknown		05/10/2016 18:44	Finished	SAMP, 2.0>10mL
59	CCV-5,CCV,1,	11	1000	Unknown		05/10/2016 18:58	Finished	CCV @5pb, IWST-160401A
60	CCB-5,CCB,1,	12	1000	Unknown		05/10/2016 19:10	Finished	CCB

61	N019606-006AMS,MS	13	1000	Unknown		05/10/2016 19:19	Finished	MS (5ppb), IWST-160401B, 2.0
62	N019606-013A,SAMP	14	1000	Unknown		05/10/2016 19:29	Finished	SAMP, 0.5>10mL
63	N019606-013AMS,MS	15	1000	Unknown		05/10/2016 19:38	Finished	MS (5ppb), IWST-160401B, 0.5
64	N019607-002A,SAMP	16	1000	Unknown		05/10/2016 19:47	Finished	SAMP, 50uL>10mL
65	N019607-002AMS,MS	17	1000	Unknown		05/10/2016 19:57	Finished	MS (5ppb), IWST-160401B, 50
66	N019607-003A,SAMP	18	1000	Unknown		05/10/2016 20:06	Finished	SAMP, 0.5>10mL
67	N019607-003AMS,MS	19	1000	Unknown		05/10/2016 20:16	Finished	MS (5ppb), IWST-160401B, 0.5
68	N019607-004A,SAMP	20	1000	Unknown		05/10/2016 20:25	Finished	SAMP, 10mL
69	N019607-004AMS,MS	21	1000	Unknown		05/10/2016 20:35	Finished	MS (1ppb), IWST-160401B, 10
70	N019607-005A,SAMP	22	1000	Unknown		05/10/2016 20:44	Finished	SAMP, 10mL
71	CCV-6,CCV1,1,	23	1000	Unknown		05/10/2016 20:54	Finished	CCV @10ppb, IWST-160401A
72	CCB-6,CCB,1,	24	1000	Unknown		05/10/2016 21:03	Finished	CCB
73	N019607-005AMS,MS	25	1000	Unknown		05/10/2016 21:13	Finished	MS (1ppb), IWST-160401B, 10
74	N019607-006A,SAMP	26	1000	Unknown		05/10/2016 21:22	Finished	SAMP, 10mL
75	N019607-006AMS,MS	27	1000	Unknown		05/10/2016 21:32	Finished	MS (1ppb), IWST-160401B, 10
76	N019607-007A,SAMP	28	1000	Unknown		05/10/2016 21:41	Finished	SAMP, 1.0>10mL
77	N019607-007AMS,MS	29	1000	Unknown		05/10/2016 21:50	Finished	MS (5ppb), IWST-160401B, 1.0
78	N019607-008A,SAMP	30	1000	Unknown		05/10/2016 22:00	Finished	SAMP, 10mL
79	N019607-008AMS,MS	31	1000	Unknown		05/10/2016 22:09	Finished	MS (1ppb), IWST-160401B, 10
80	N019607-009A,SAMP	32	1000	Unknown		05/10/2016 22:19	Finished	SAMP, 10mL
81	N019607-009AMS,MS	33	1000	Unknown		05/10/2016 22:28	Finished	MS (1ppb), IWST-160401B, 10
82	N019607-010A,SAMP	34	1000	Unknown		05/10/2016 22:38	Finished	SAMP, 10mL
83	CCV-7,CCV,1,	35	1000	Unknown		05/10/2016 22:47	Finished	CCV @5pb, IWST-160401A
84	CCB-7,CCB,1,	36	1000	Unknown		05/10/2016 22:57	Finished	CCB
85	N019607-010AMS,MS	37	1000	Unknown		05/10/2016 23:06	Finished	MS (1ppb), IWST-160401B, 10
86	N019607-011A,SAMP	38	1000	Unknown		05/10/2016 23:16	Finished	SAMP, 10mL
87	N019607-011AMS,MS	39	1000	Unknown		05/10/2016 23:25	Finished	MS (1ppb), IWST-160401B, 10
88	N019607-005A,SAMP	40	1000	Unknown		05/10/2016 23:34	Finished	SAMP, 2.0>10mL
89	N019607-005AMS,MS	41	1000	Unknown		05/10/2016 23:44	Finished	MS (1ppb), IWST-160401B, 2.0
90	N019607-009A,SAMP	42	1000	Unknown		05/10/2016 23:53	Finished	SAMP, 2.0>10mL
91	N019607-009AMS,MS	43	1000	Unknown		05/11/2016 00:03	Finished	MS (1ppb), IWST-160401B, 2.0
92	N019612-001A,SAMP	44	1000	Unknown		05/11/2016 00:12	Finished	SAMP, 1.0>10mL
93	N019612-002A,SAMP	45	1000	Unknown		05/11/2016 00:22	Finished	SAMP, 1.0>10mL
94	N019612-003A,SAMP	46	1000	Unknown		05/11/2016 00:31	Finished	SAMP, 10mL
95	CCV-8,CCV1,1,	47	1000	Unknown		05/11/2016 00:41	Finished	CCV @10ppb, IWST-160401A
96	CCB-8,CCB,1,	48	1000	Unknown		05/11/2016 00:50	Finished	CCB
97	SHUTDOWN	49	1000	Unknown		05/11/2016 01:00	Finished	
98	Eluent: R160509A, R	50	1000	Unknown		n.a.	Finished	Eluent
99	PCR: R160509B	51	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

ORION STAR A214

Date Prepared: 5/4/14
Time Prepared: 2:20 PM
Prepared By: JAS

slope: 99.8% @25°C
pH 7: 6.99
4: 3.97
10: ~~9.99~~ 10.02
LCS: 6.96

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINV-160125H
NH4OH + NH4SO4 eluent: R160505A, R160509A
NH4OH + NH4SO4 buffer: R160426G

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019606-1A	9.28	9.35	~250 mL	~250 mL	+1 drop GN NaOH	R160426G
2)	-2A	9.05	9.45	↓	↓	+4 drops GN NaOH	↓
3)	-3A	9.07	9.41	↓	↓	+4 drops GN NaOH	↓
4)	-4A	9.15	9.37	↓	↓	+2 drops GN NaOH	↓
5)	-5A	9.35	-	-	-	-	↓
6)	-6A	9.30	-	-	-	-	↓
7)	-7A	9.48	-	-	-	-	↓
8)	-8A	9.49	-	-	-	-	↓
9)	-9A	9.36	-	-	-	-	↓
10)	-10A	9.09	9.38	~250 mL	~250 mL	+4 drops GN NaOH	↓ ; light green
11)	-11A	9.01	9.31	↓	↓	+5 drops	↓ ; light green
12)	-12A	9.07	9.~~3~~42	↓	↓	+5 drops	↓ ; light green
13)	-13A	9.22	9.36	↓	↓	+2 drops	↓
14)	-14A	8.89	9.47	↓	↓	+9 drops	↓
15)	N019607-1A	9.01	9.40	↓	↓	+8 drops	R160426G
	-2A	8.87	9.40	↓	↓	+8 drops	↓

Sample Preparation

Date Prepared: 5/4/14
Time Prepared: ~~7:00 PM~~ 7:00 PM
Prepared By: JAS

slope 98.5%
pH 7: 7.03 @25.2
4: 3.99 @25.1
10: 10.02 @25.4
LCS: 7.05 @24.9

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINV-160125H
NH4OH + NH4SO4 eluent: R160509A, R160510A
NH4OH + NH4SO4 buffer: R160426G

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019607-3A	8.74	9.32	~250 mL	~250 mL	+10 drops GN NaOH	R160426G ~9.44
2)	-4A	8.59	9.49	↓	↓	+10 drops	↓ ~9.68
3)	-5A	8.01	9.36	↓	↓	+20 drops x 7 mL buffer	↓ ~9.69
4)	-6A	~~8.35~~ 8.75	9.33	~250 mL		+10 drops GN NaOH	↓
5)	-7A	8.63	9.60			+8 drops GN NaOH	↓
6)	-8A	8.43	9.67			+8 drops	↓ ; w/ precipitate
7)	-9A	8.51	9.43			+4 drops	↓
8)	-10A (10/2)	8.42	9.33			+9 drops	↓
9)	-10A (20/2)	8.26	9.30			+10 drops	↓
10)	-11A	8.66	9.65			+4 drops	↓
11)							
12)	* calibration for samples N019607-06A onwards.						
13)							
14)							
15)							

Logbook No. 10

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-06
Date Calibrated: 5/2/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0499	0.2341	1.1728	2.3399	3.5237	4.6638	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/20/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0519	0.2378	1.1671	2.3360	3.5435	4.7112	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ICV**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2320261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.008	0.20	5.000	0	100	90	110				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2320262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.213	0.20	0.2000	0	107	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **CCV**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.916	0.20	5.000	0	98.3	95	105				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.206	0.20	0.2000	0	103	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.935	0.20	10.00	0	99.3	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **CCV**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.068	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.036	0.20	10.00	0	100	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **CCV**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.034	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ZZZZZZ**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.015	0.20	10.00	0	100	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ICV**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2322911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.913	0.20	5.000	0	98.3	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2322912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.221	0.20	0.2000	0	111	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.222	0.20	0.2000	0	111	80	120				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.190	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCV**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.953	0.20	5.000	0	99.1	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.112	0.20	10.00	0	101	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCV**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.033	0.20	5.000	0	101	95	105				

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2016**	SeqNo: **2322950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.175	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **ICB**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2320263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **CCB**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.019	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **CCB**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.015	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **CCB**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.013	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **CCB**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.005	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **CCB**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.010	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108345**
Client ID: **CCB**	Batch ID: **R108345**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2016**	SeqNo: **2320314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.014	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ICB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2322913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2016**	SeqNo: **2322951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/9/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
Average	5.108	
Actual RT Window	5.028 - 5.188	
Applied RT Window	4.908 - 5.308	
MB-R108345	5.108	PASS
LCS-R108345	5.108	PASS
N019590-007A	N.A.	N.A.
N019590-007AMS	5.058	PASS
N019606-001A	5.100	PASS
N019606-001ADUP	5.100	PASS
N019606-001AMS	5.100	PASS
N019606-0013AMSD	5.100	PASS
N019606-002A	5.100	PASS
N019606-002AMS	5.100	PASS
N019606-003A	5.100	PASS
N019606-003AMS	5.100	PASS
N019606-004A	5.100	PASS
N019606-004AMS	5.108	PASS
N019606-005A	5.042	PASS
N019606-005AMS	5.042	PASS
N019606-006A	5.100	PASS
N019606-006AMS	5.100	PASS
N019606-007A	5.025	PASS
N019606-007AMS	5.025	PASS
N019606-008A	5.025	PASS
N019606-008AMS	5.025	PASS
N019606-009A	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/9/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.108	
CCV-2	5.108	
CCV-3	5.108	
CCV-4	5.108	
CCV-5	5.108	
CCV-6	5.108	
Average	5.108	
Actual RT Window	5.028 - 5.188	
Applied RT Window	4.908 - 5.308	
N019606-009AMS	5.100	PASS
N019606-010A	5.108	PASS
N019606-010AMS	5.108	PASS
N019606-011A	5.108	PASS
N019606-011AMS	5.108	PASS
N019606-012A	5.108	PASS
N019606-012AMS	5.100	PASS
N019606-013A	5.100	PASS
N019606-013AMS	5.100	PASS
N019606-014A	5.092	PASS
N019606-014AMS	5.083	PASS
N019606-005A	N.A.	N.A.
N019606-005AMS	N.A.	N.A.
N019606-006A	N.A.	N.A.
N019606-006AMS	N.A.	N.A.
N019606-010A	5.108	PASS
N019606-010AMS	5.108	PASS
N019606-011A	5.108	PASS
N019606-011AMS	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/10/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.056	
CCV-2	5.056	
CCV-3	5.056	
CCV-4	5.056	
CCV-5	5.056	
CCV-6	5.056	
CCV-7	5.056	
CCV-8	5.056	
Average	5.056	
Actual RT Window	4.976 - 5.136	
Applied RT Window	4.856 - 5.256	
MB-R108366	N.A.	N.A.
LCS-R108366	5.056	PASS
N019716-001A	5.056	PASS
N019716-002A	5.023	PASS
N019716-003A	5.048	PASS
N019716-001AREP	5.056	PASS
N019716-002AREP	5.023	PASS
N019716-003AREP	5.056	PASS
N019611-001A	5.056	PASS
N019611-001ADUP	5.056	PASS
N019611-001A	5.056	PASS
N019611-001ADUP	5.056	PASS
N019611-001AMS	5.056	PASS
N019611-001AMSD	5.056	PASS
N019611-002A	5.048	PASS
N019611-003A	5.056	PASS
N019611-004A	5.040	PASS
N019611-005A	5.056	PASS
N019611-006A	5.056	PASS
N019611-007A	5.056	PASS
N019611-008A	5.056	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/10/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.056	
CCV-2	5.056	
CCV-3	5.056	
CCV-4	5.056	
CCV-5	5.056	
CCV-6	5.056	
CCV-7	5.056	
CCV-8	5.056	
Average	5.056	
Actual RT Window	4.976 - 5.136	
Applied RT Window	4.856 - 5.256	
N019611-009A	5.031	PASS
N019611-010A	5.056	PASS
N019611-011A	5.048	PASS
N019611-012A	5.048	PASS
N019611-013A	5.048	PASS
N019611-014A	5.031	PASS
N019611-015A	5.040	PASS
N019699-001A	5.031	PASS
N019611-003A	5.056	PASS
N019611-011A	5.056	PASS
N019611-013A	5.056	PASS
N019611-015A	5.031	PASS
MB-R108381	N.A.	N.A.
LCS-R108381	5.056	PASS
N019607-001A	5.031	PASS
N019607-001ADUP	5.023	PASS
N019607-001AMS	5.031	PASS
N019607-001AMSD	5.031	PASS
N019606-006A	4.990	PASS
N019606-006AMS	4.998	PASS
N019606-013A	5.048	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/10/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.056	
CCV-2	5.056	
CCV-3	5.056	
CCV-4	5.056	
CCV-5	5.056	
CCV-6	5.056	
CCV-7	5.056	
CCV-8	5.056	
Average	5.056	
Actual RT Window	4.976 - 5.136	
Applied RT Window	4.856 - 5.256	
N019606-013AMS	5.048	PASS
N019607-002A	5.056	PASS
N019607-002AMS	5.056	PASS
N019607-003A	5.056	PASS
N019607-003AMS	5.056	PASS
N019607-004A	5.031	PASS
N019607-004AMS	5.048	PASS
N019607-005A	N.A.	N.A.
N019607-005AMS	N.A.	N.A.
N019607-006A	N.A.	N.A.
N019607-006AMS	N.A.	N.A.
N019607-007A	5.048	PASS
N019607-007AMS	5.048	PASS
N019607-008A	N.A.	N.A.
N019607-008AMS	N.A.	N.A.
N019607-009A	4.848	FAIL
N019607-009AMS	4.790	FAIL
N019607-010A	4.856	PASS
N019607-010AMS	4.873	PASS
N019607-011A	5.065	PASS
N019607-011AMS	5.056	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/10/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.056	
CCV-2	5.056	
CCV-3	5.056	
CCV-4	5.056	
CCV-5	5.056	
CCV-6	5.056	
CCV-7	5.056	
CCV-8	5.056	
Average	5.056	
Actual RT Window	4.976 - 5.136	
Applied RT Window	4.856 - 5.256	
N019607-005A	5.023	PASS
N019607-005AMS	5.006	PASS
N019607-009A	5.023	PASS
N019607-009AMS	5.015	PASS
N019612-001A	5.056	PASS
N019612-002A	5.048	PASS
N019612-003A	4.998	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 ml
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 ml
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 ml
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 ml
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 ml
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 ml
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 ml
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 ml
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 ml
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 ml
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 ml
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 ml
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 ml
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

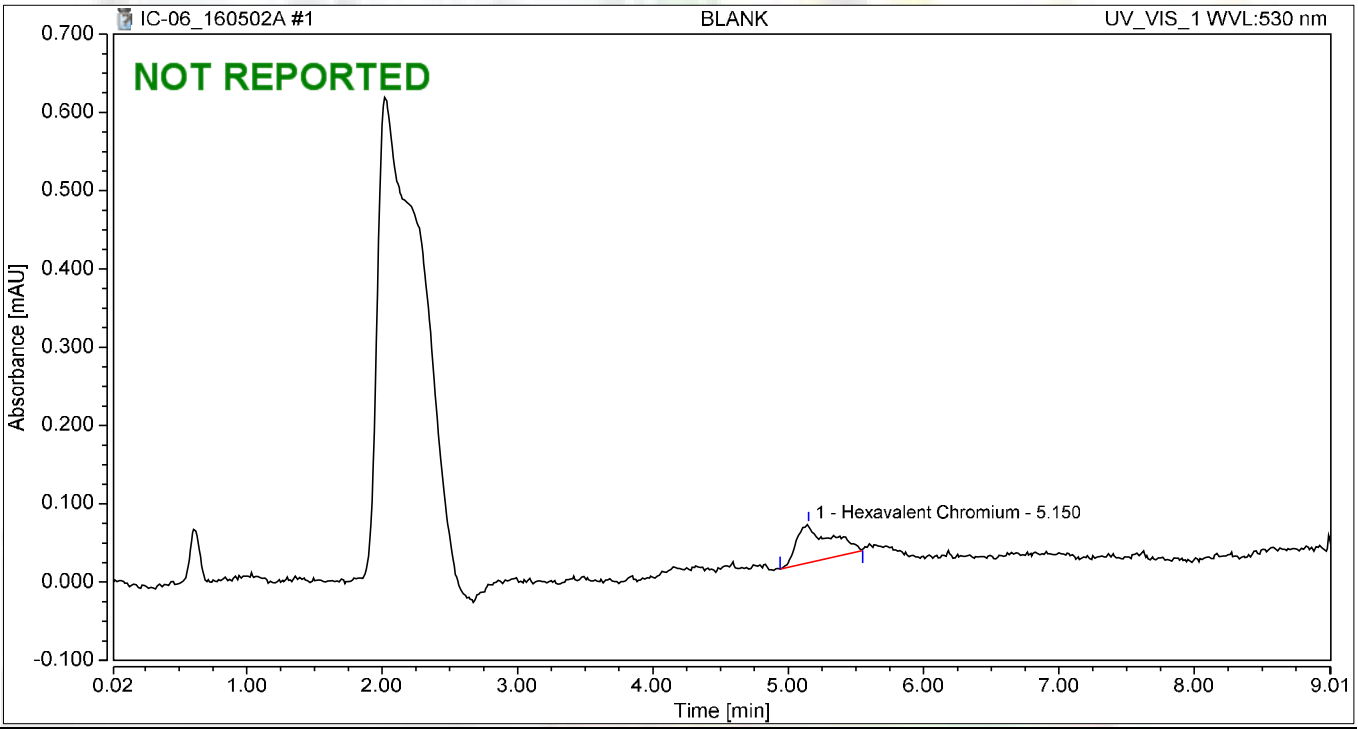
71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

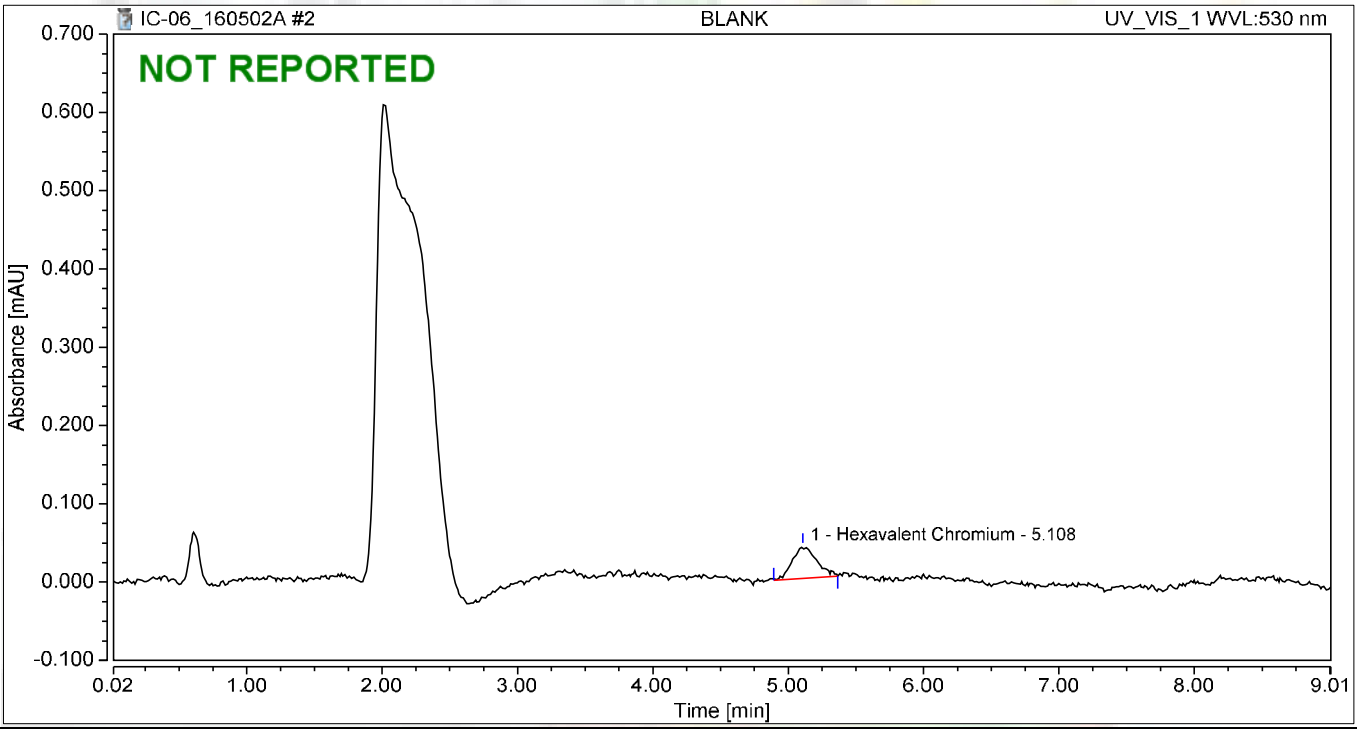
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.014	0.049	100.00	100.00	0.0418
Total:			**0.014**	**0.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

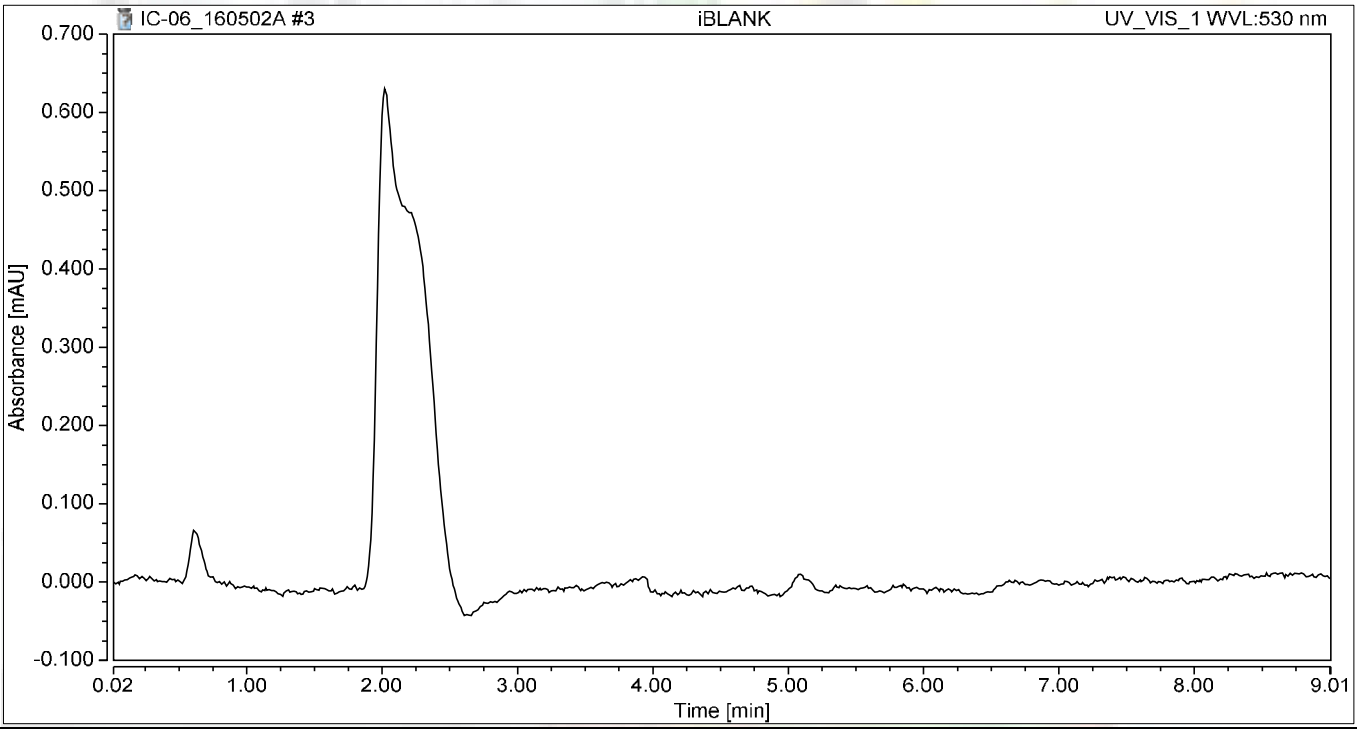
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.008	0.041	100.00	100.00	0.0183
Total:			**0.008**	**0.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

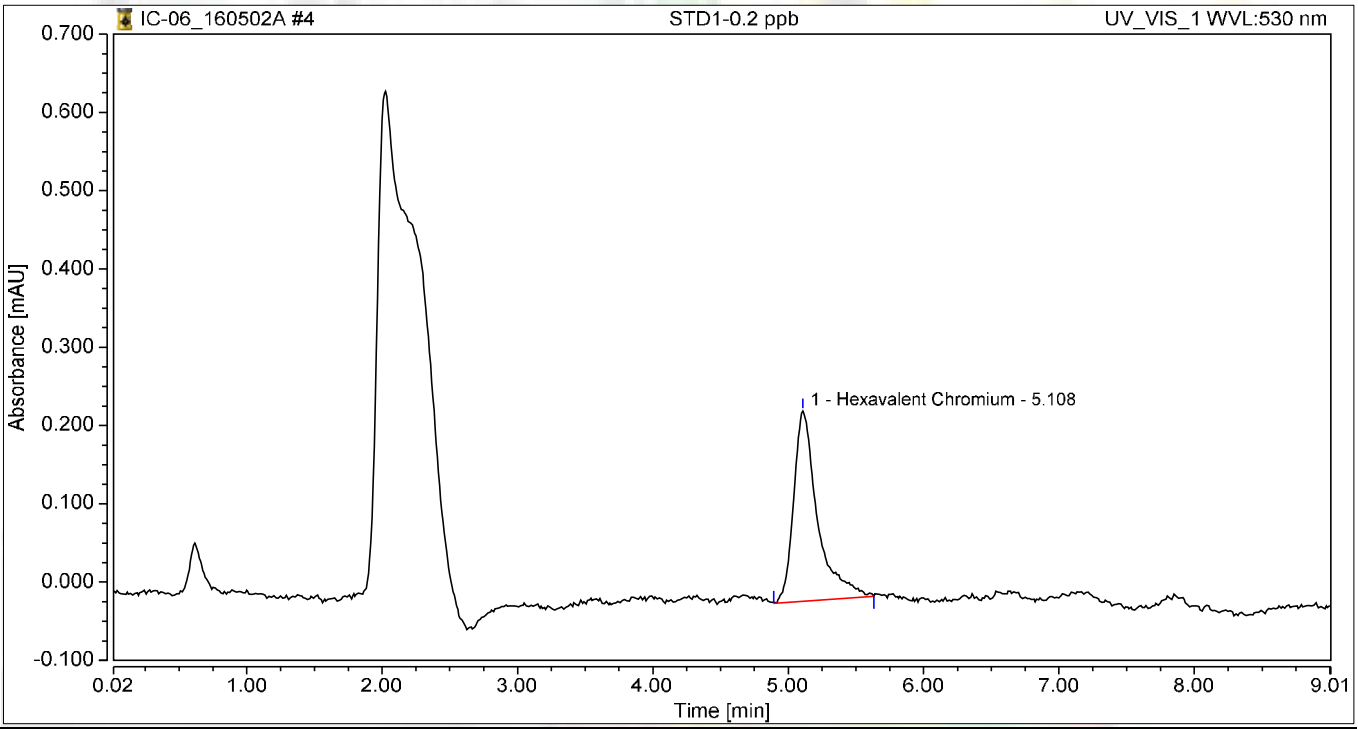
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

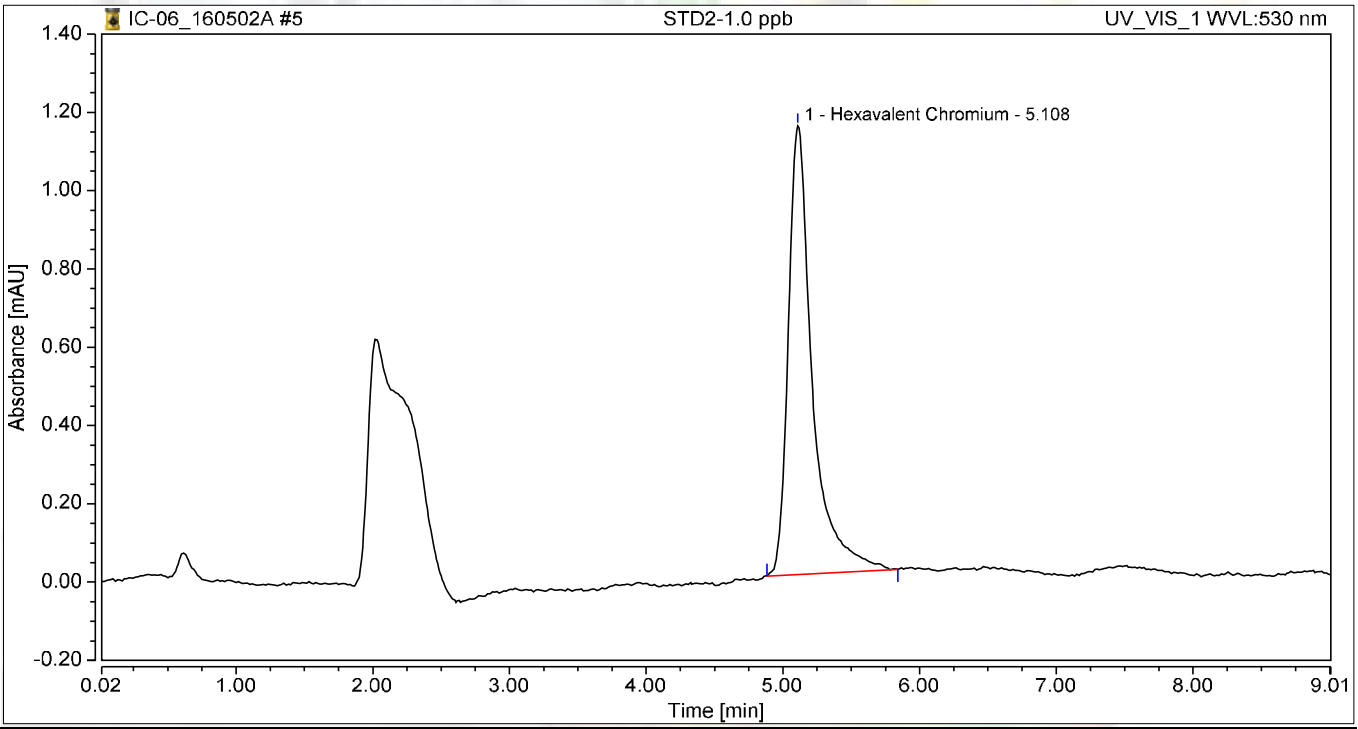
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.050	0.243	100.00	100.00	0.1956
Total:			**0.050**	**0.243**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

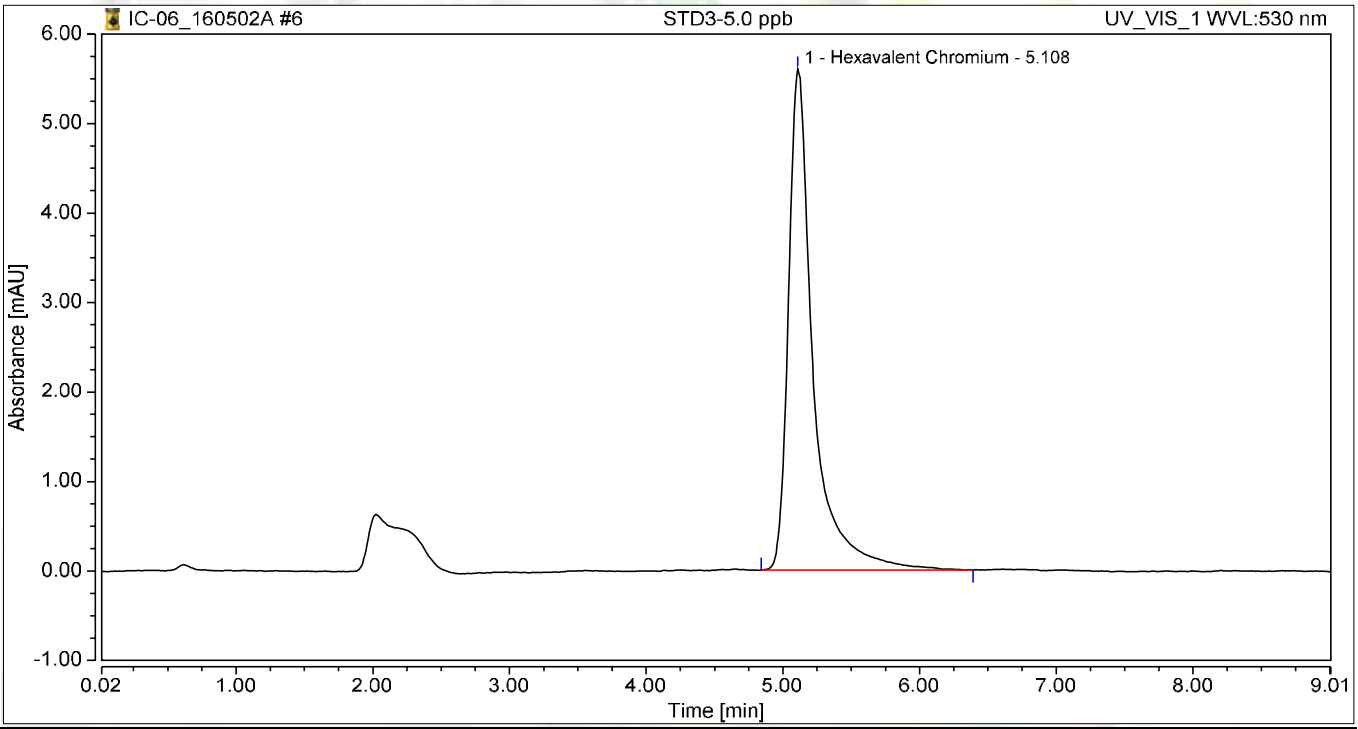
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.234	1.147	100.00	100.00	0.9843
Total:			**0.234**	**1.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

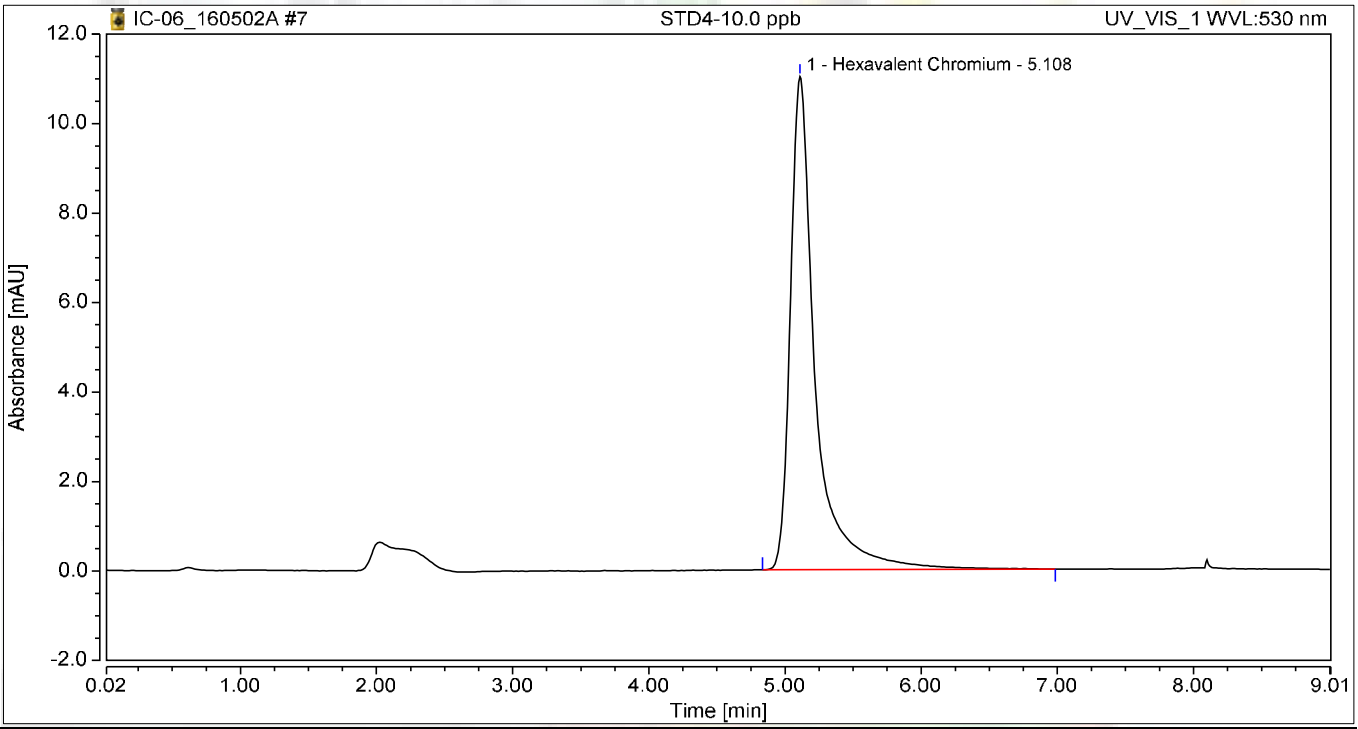
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.173	5.600	100.00	100.00	5.0033
Total:			**1.173**	**5.600**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

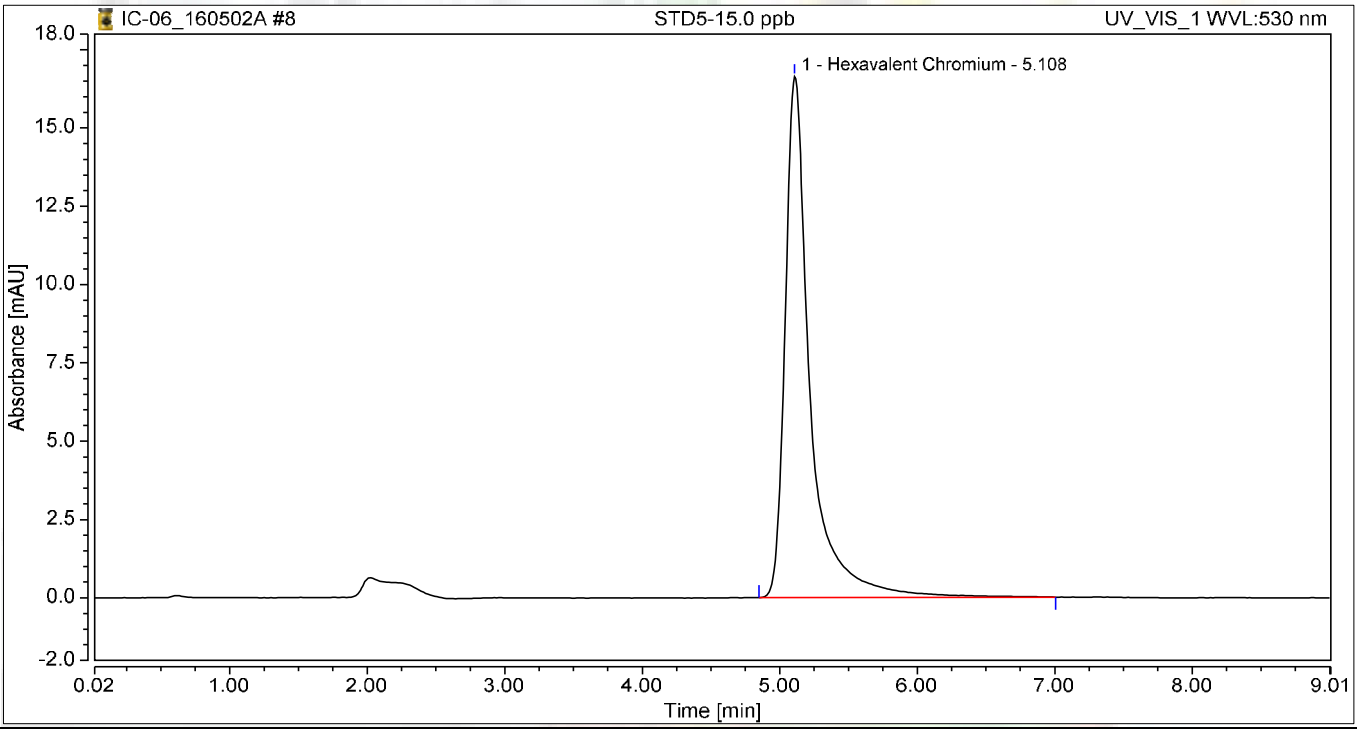
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.340	11.026	100.00	100.00	9.9997
Total:			**2.340**	**11.026**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

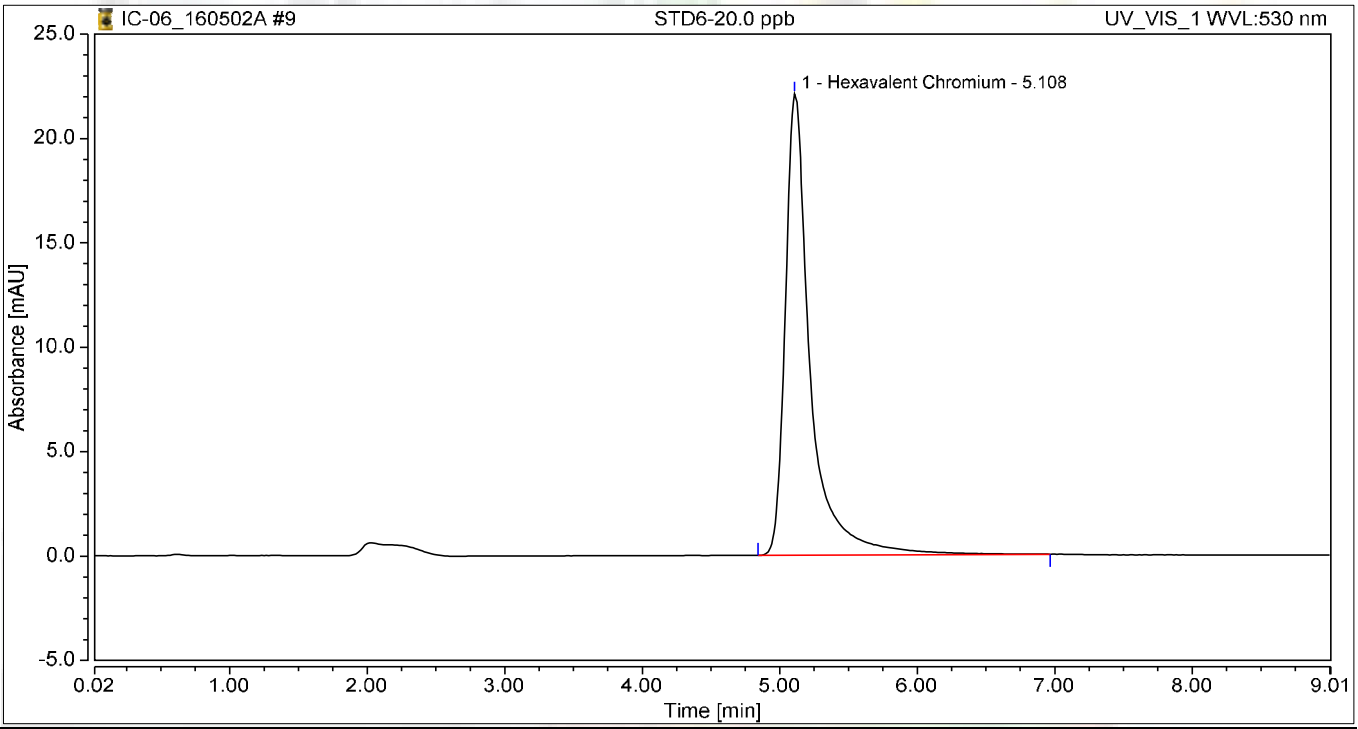
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	3.524	16.642	100.00	100.00	15.0679
Total:			**3.524**	**16.642**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**07**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



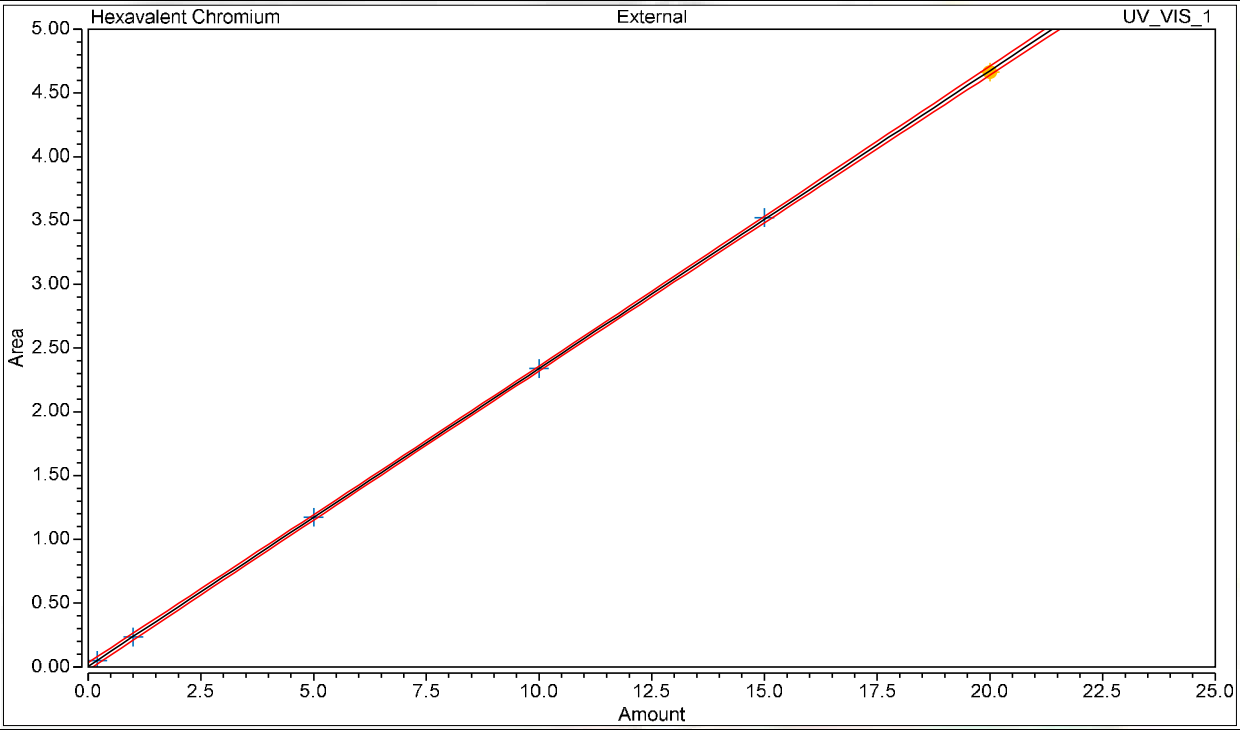
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	4.664	22.077	100.00	100.00	19.9492
Total:			**4.664**	**22.077**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin, WithOffset	*Offset (C0)*	0.0042
Evaluation Type	Area	*Slope (C1)*	0.2336
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

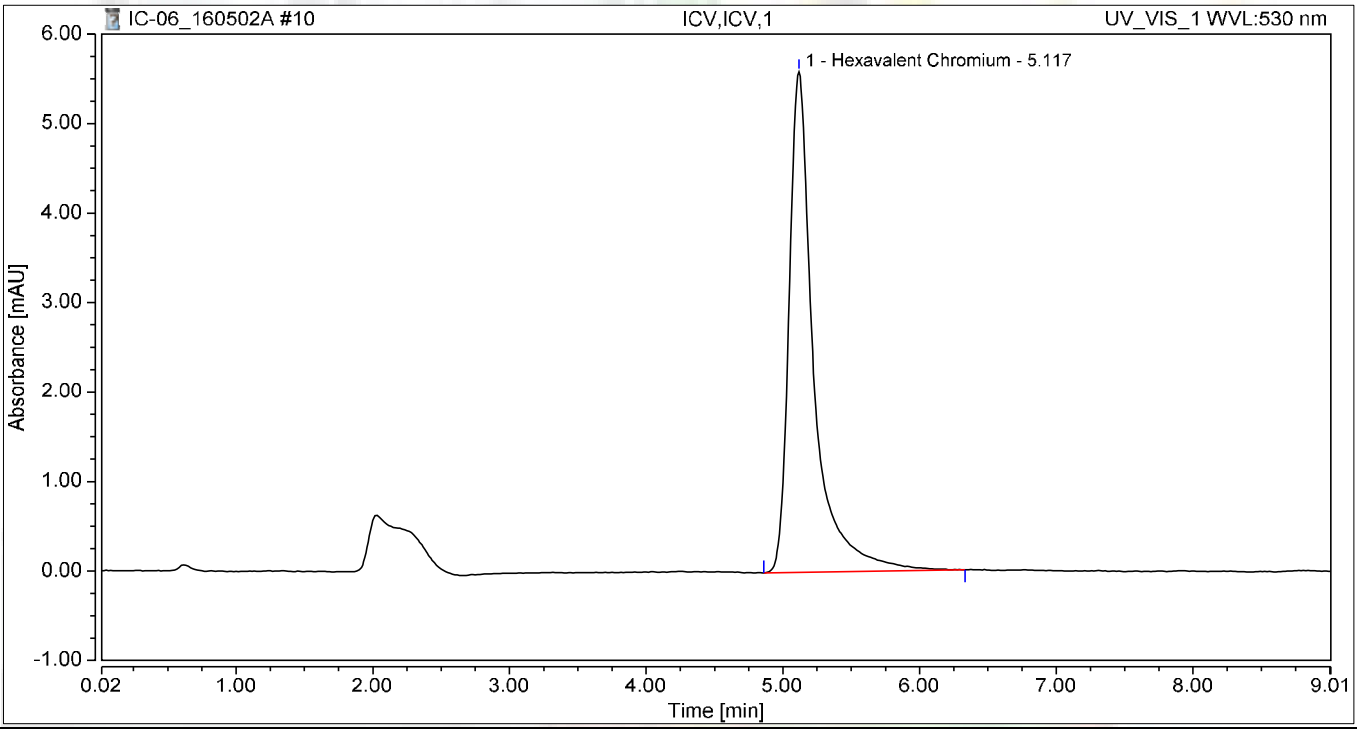
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	02	0.2000	0.0499	0.050	0.243
5	STD2-1.0 ppb	03	1.0000	0.2341	0.234	1.147
6	STD3-5.0 ppb	04	5.0000	1.1728	1.173	5.600
7	STD4-10.0 ppb	05	10.0000	2.3399	2.340	11.026
8	STD5-15.0 ppb	06	15.0000	3.5237	3.524	16.642
9	STD6-20.0 ppb	07	20.0000	4.6638	4.664	22.077

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

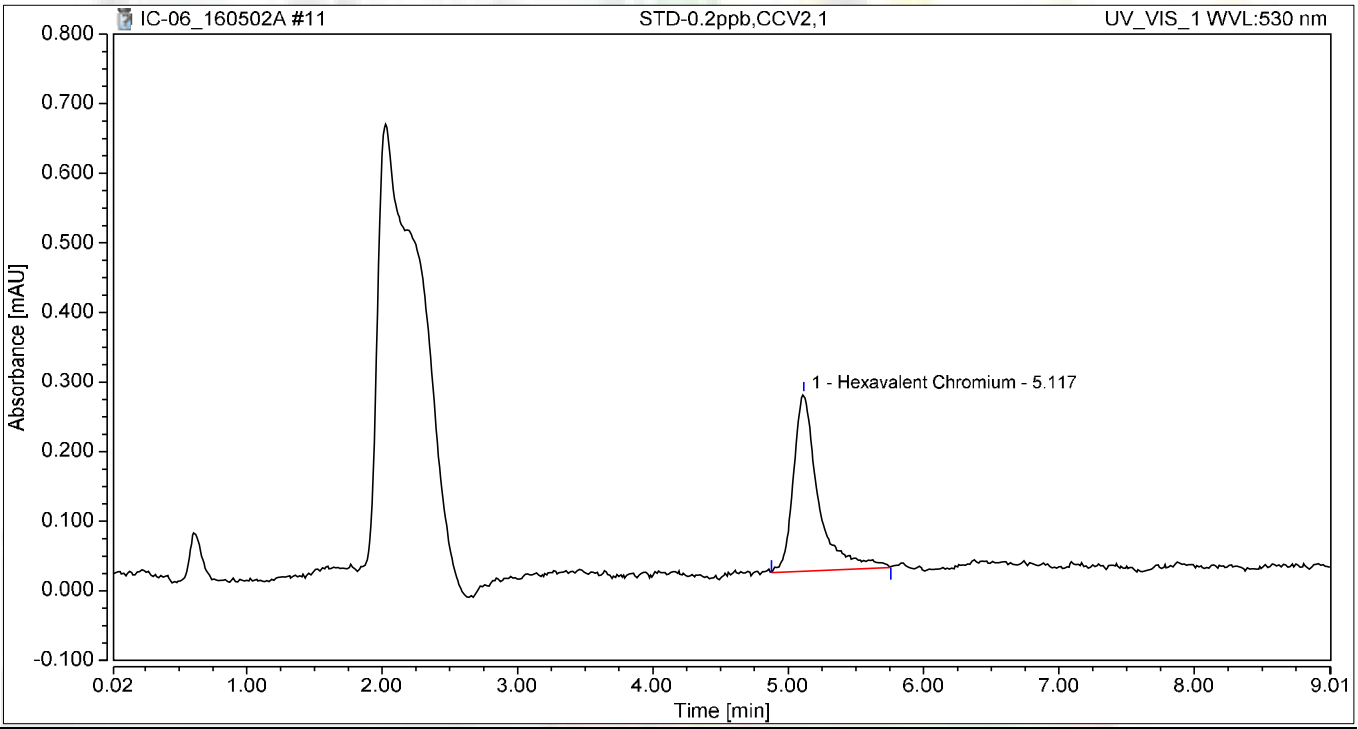
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	1.174	5.596	100.00	100.00	5.0075
Total:			**1.174**	**5.596**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

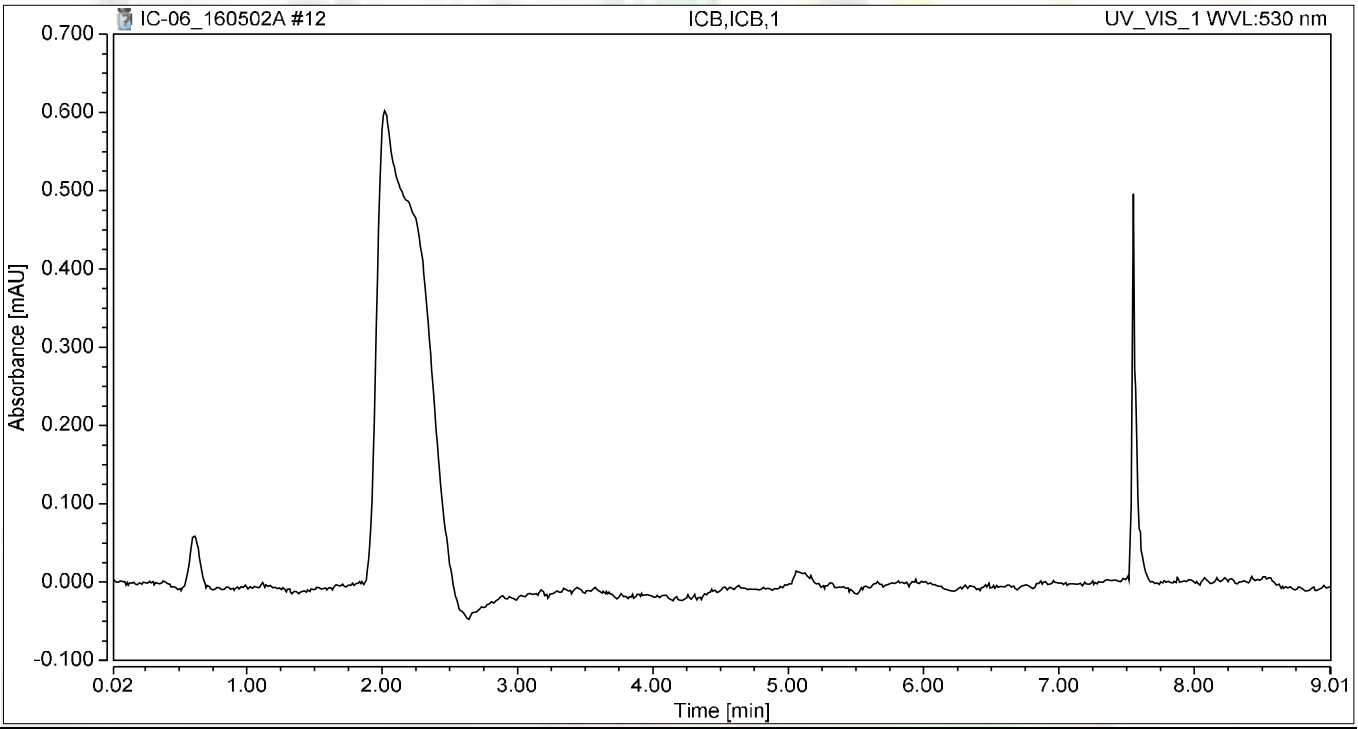
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.054	0.254	100.00	100.00	0.2134
Total:			**0.054**	**0.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160509A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/09/16 11:23 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/09/16 11:34 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/09/16 11:44 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/09/16 11:54 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/09/16 12:04 PM	Reported
15	MB-R108345	MBLK	1	Hexavalent Chromium	05/09/16 12:14 PM	Reported
16	LCS-R108345	LCS	1	Hexavalent Chromium	05/09/16 12:24 PM	Reported
17	N019590-007A	SAMP	5	Hexavalent Chromium	05/09/16 12:34 PM	Reported
18	N019590-007AMS	MS	5	Hexavalent Chromium	05/09/16 12:44 PM	Reported
19	N019606-001A	SAMP	20	Hexavalent Chromium	05/09/16 12:54 PM	Reported
20	N019606-001ADUP	DUP	20	Hexavalent Chromium	05/09/16 1:04 PM	Reported
21	N019606-001AMS	MS	20	Hexavalent Chromium	05/09/16 1:14 PM	Reported
22	N019606-0013AMSD	MSD	20	Hexavalent Chromium	05/09/16 1:24 PM	Reported
23	N019606-002A	SAMP	10	Hexavalent Chromium	05/09/16 1:34 PM	Reported
24	N019606-002AMS	MS	10	Hexavalent Chromium	05/09/16 1:44 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/09/16 1:54 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/09/16 2:04 PM	Reported
27	N019606-003A	SAMP	10	Hexavalent Chromium	05/09/16 2:14 PM	Reported
28	N019606-003AMS	MS	10	Hexavalent Chromium	05/09/16 2:24 PM	Reported
29	N019606-004A	SAMP	1	Hexavalent Chromium	05/09/16 2:34 PM	Reported
30	N019606-004AMS	MS	1	Hexavalent Chromium	05/09/16 2:43 PM	Reported
31	N019606-005A	SAMP	5	Hexavalent Chromium	05/09/16 2:53 PM	Reported
32	N019606-005AMS	MS	5	Hexavalent Chromium	05/09/16 3:03 PM	Reported
33	N019606-006A	SAMP	50	Hexavalent Chromium	05/09/16 3:13 PM	Not Reported
34	N019606-006AMS	MS	50	Hexavalent Chromium	05/09/16 3:23 PM	Not Reported
35	N019606-007A	SAMP	5	Hexavalent Chromium	05/09/16 3:33 PM	Reported
36	N019606-007AMS	MS	5	Hexavalent Chromium	05/09/16 3:43 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/09/16 3:53 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/09/16 4:03 PM	Reported
39	N019606-008A	SAMP	5	Hexavalent Chromium	05/09/16 4:17 PM	Reported
40	N019606-008AMS	MS	5	Hexavalent Chromium	05/09/16 4:28 PM	Reported
41	N019606-009A	SAMP	100	Hexavalent Chromium	05/09/16 4:38 PM	Reported
42	N019606-009AMS	MS	100	Hexavalent Chromium	05/09/16 4:48 PM	Reported
43	N019606-010A	SAMP	500	Hexavalent Chromium	05/09/16 4:58 PM	Not Reported
44	N019606-010AMS	MS	500	Hexavalent Chromium	05/09/16 5:08 PM	Not Reported
45	N019606-011A	SAMP	200	Hexavalent Chromium	05/09/16 5:18 PM	Not Reported
46	N019606-011AMS	MS	200	Hexavalent Chromium	05/09/16 5:28 PM	Not Reported
47	N019606-012A	SAMP	200	Hexavalent Chromium	05/09/16 5:38 PM	Reported
48	N019606-012AMS	MS	200	Hexavalent Chromium	05/09/16 5:48 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/09/16 5:58 PM	Reported

5/17/2016

INJECTION LOG: 160509A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-4	CCB	1	Hexavalent Chromium	05/09/16 6:08 PM	Reported
51	N019606-013A	SAMP	50	Hexavalent Chromium	05/09/16 6:18 PM	Not Reported
52	N019606-013AMS	MS	50	Hexavalent Chromium	05/09/16 6:28 PM	Not Reported
53	N019606-014A	SAMP	1	Hexavalent Chromium	05/09/16 6:38 PM	Reported
54	N019606-014AMS	MS	1	Hexavalent Chromium	05/09/16 6:48 PM	Reported
55	N019606-005A	SAMP	1	Hexavalent Chromium	05/09/16 6:58 PM	Not Reported
56	N019606-005AMS	MS	1	Hexavalent Chromium	05/09/16 7:08 PM	Not Reported
57	N019606-006A	SAMP	1	Hexavalent Chromium	05/09/16 7:18 PM	Not Reported
58	N019606-006AMS	MS	1	Hexavalent Chromium	05/09/16 7:28 PM	Not Reported
59	N019606-010A	SAMP	500	Hexavalent Chromium	05/09/16 7:38 PM	Reported
60	N019606-010AMS	MS	500	Hexavalent Chromium	05/09/16 7:48 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/09/16 7:57 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/09/16 8:07 PM	Reported
63	N019606-011A	SAMP	500	Hexavalent Chromium	05/09/16 8:17 PM	Reported
64	N019606-011AMS	MS	500	Hexavalent Chromium	05/09/16 8:27 PM	Reported
65	CCV-6	CCV1	1	Hexavalent Chromium	05/09/16 8:37 PM	Reported
66	CCB-6	CCB	1	Hexavalent Chromium	05/09/16 8:47 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160509A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/May/16 22:28:40**
No. of Injections:	**69**	*Updated By:*	**ics 5000**

Injection Details

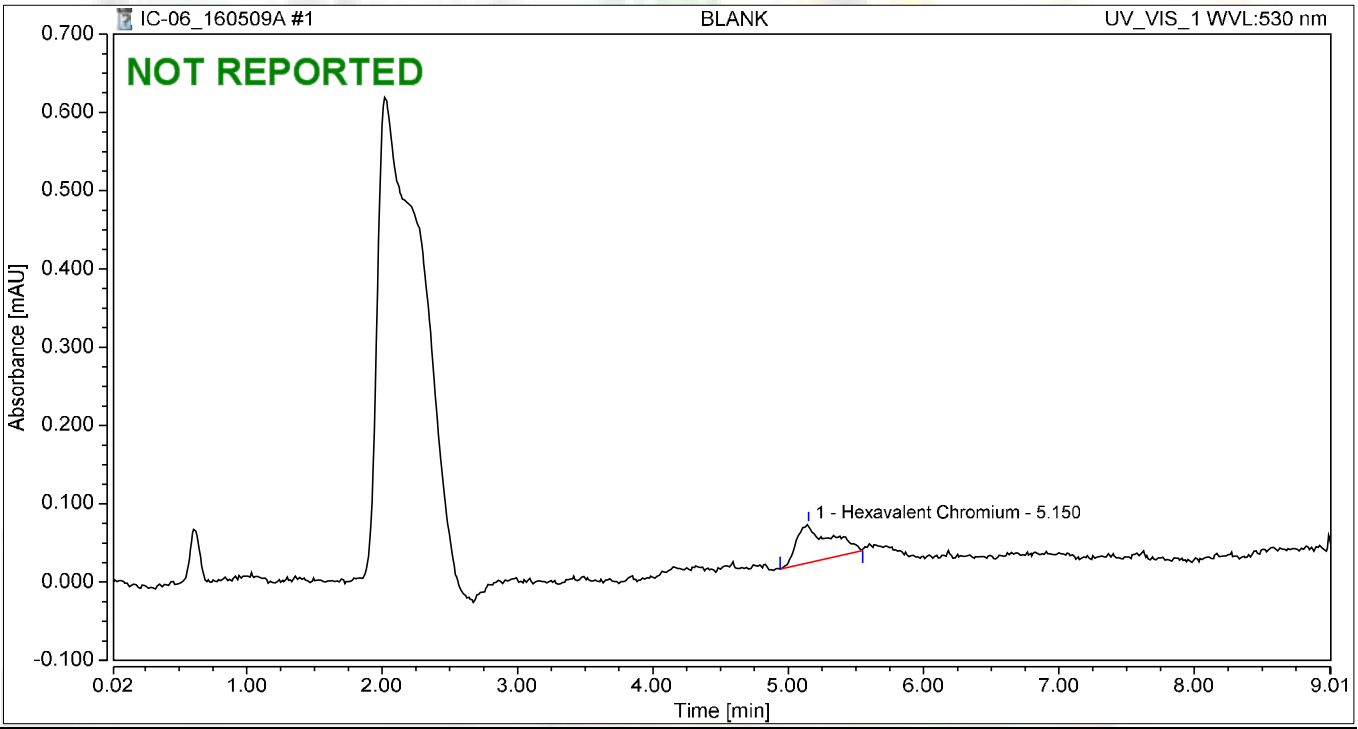
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/09/2016 11:23	Finished	
11	BLANK	2	1000	Unknown		05/09/2016 11:34	Finished	
12	CCV-1,CCV,1	3	1000	Unknown		05/09/2016 11:44	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/09/2016 11:54	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/09/2016 12:04	Finished	CCB R160501A
15	MB-H2O,MBLK,1	6	1000	Unknown		05/09/2016 12:14	Finished	MB R160426G
16	LCS-H2O,LCS,1	7	1000	Unknown		05/09/2016 12:24	Finished	LCS(5ppb), IWST-160401B
17	N019590-007A,SAMP,5	8	1000	Unknown		05/09/2016 12:34	Finished	SAMP, 2.0>10mL
18	N019590-007AMS,MS,5	9	1000	Unknown		05/09/2016 12:44	Finished	MS (1ppb), IWST-160401B, 2.0>1
19	N019606-001A,SAMP,20	10	1000	Unknown		05/09/2016 12:54	Finished	SAMP, 0.5>10mL
20	N019606-001ADUP,DUP,20	11	1000	Unknown		05/09/2016 13:04	Finished	DUP, 0.5>10mL
21	N019606-001AMS,MS,20	12	1000	Unknown		05/09/2016 13:14	Finished	MS (5ppb), IWST-160401B, 0.5>1
22	N019606-0013AMSD,MSD,20	13	1000	Unknown		05/09/2016 13:24	Finished	MSD (5ppb), IWST-160401B, 0.5>
23	N019606-002A,SAMP,10	14	1000	Unknown		05/09/2016 13:34	Finished	SAMP, 1.0>10mL
24	N019606-002AMS,MS,10	15	1000	Unknown		05/09/2016 13:44	Finished	MS (5ppb), IWST-160401B, 1.0>1
25	CCV-2,CCV1,1	16	1000	Unknown		05/09/2016 13:54	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/09/2016 14:04	Finished	CCB
27	N019606-003A,SAMP,10	18	1000	Unknown		05/09/2016 14:14	Finished	SAMP, 1.0>10mL
28	N019606-003AMS,MS,10	19	1000	Unknown		05/09/2016 14:24	Finished	MS (5ppb), IWST-160401B, 1.0>1
29	N019606-004A,SAMP,1	20	1000	Unknown		05/09/2016 14:34	Finished	SAMP, 10mL
30	N019606-004AMS,MS,1	21	1000	Unknown		05/09/2016 14:43	Finished	MS (1ppb), IWST-160401B, 10 mL
31	N019606-005A,SAMP,5	22	1000	Unknown		05/09/2016 14:53	Finished	SAMP, 2.0>10mL
32	N019606-005AMS,MS,5	23	1000	Unknown		05/09/2016 15:03	Finished	MS (5ppb), IWST-160401B, 2.0>1
33	N019606-006A,SAMP,50	24	1000	Unknown		05/09/2016 15:13	Finished	SAMP, 0.2> 10mL
34	N019606-006AMS,MS,50	25	1000	Unknown		05/09/2016 15:23	Finished	MS (5ppb), IWST-160401B, 0.2>1
35	N019606-007A,SAMP,5	26	1000	Unknown		05/09/2016 15:33	Finished	SAMP, 2.0>10mL
36	N019606-007AMS,MS,5	27	1000	Unknown		05/09/2016 15:43	Finished	MS (5ppb), IWST-160401B, 2.0>1
37	CCV-3,CCV,1	28	1000	Unknown		05/09/2016 15:53	Finished	CCV @ 5ppb, IWST-160401A
38	CCB-3,CCB,1	29	1000	Unknown		05/09/2016 16:03	Finished	CCB
39	N019606-008A,SAMP,5	1	1000	Unknown		05/09/2016 16:17	Finished	SAMP, 2.0>10mL
40	N019606-008AMS,MS,5	2	1000	Unknown		05/09/2016 16:28	Finished	MS (5ppb), IWST-160401B, 2.0>1
41	N019606-009A,SAMP,100	3	1000	Unknown		05/09/2016 16:38	Finished	SAMP, 0.1> 10mL
42	N019606-009AMS,MS,100	4	1000	Unknown		05/09/2016 16:48	Finished	MS (5ppb), IWST-160401B, 0.1>1
43	N019606-010A,SAMP,500	5	1000	Unknown		05/09/2016 16:58	Finished	SAMP, 20uL>10mL
44	N019606-010AMS,MS,500	6	1000	Unknown		05/09/2016 17:08	Finished	MS (5ppb), IWST-160401B, 20uL>
45	N019606-011A,SAMP,200	7	1000	Unknown		05/09/2016 17:18	Finished	SAMP, 50uL>10mL
46	N019606-011AMS,MS,200	8	1000	Unknown		05/09/2016 17:28	Finished	MS (5ppb), IWST-160401B, 50uL>
47	N019606-012A,SAMP,200	9	1000	Unknown		05/09/2016 17:38	Finished	SAMP, 50uL>10mL
48	N019606-012AMS,MS,200	10	1000	Unknown		05/09/2016 17:48	Finished	MS (5ppb), IWST-160401B, 50uL>
49	CCV-4,CCV1,1	11	1000	Unknown		05/09/2016 17:58	Finished	CCV @ 10ppb, IWST-160401A
50	CCB-4,CCB,1	12	1000	Unknown		05/09/2016 18:08	Finished	CCB
51	N019606-013A,SAMP,50	13	1000	Unknown		05/09/2016 18:18	Finished	SAMP, 0.2>10mL
52	N019606-013AMS,MS,50	14	1000	Unknown		05/09/2016 18:28	Finished	MS (5ppb), IWST-160401B, 0.2>1
53	N019606-014A,SAMP,1	15	1000	Unknown		05/09/2016 18:38	Finished	SAMP, 10mL
54	N019606-014AMS,MS,1	16	1000	Unknown		05/09/2016 18:48	Finished	MS (1ppb), IWST-160401B, 10 mL
55	N019606-005A,SAMP,1	17	1000	Unknown		05/09/2016 18:58	Finished	SAMP, 10mL
56	N019606-005AMS,MS,1	18	1000	Unknown		05/09/2016 19:08	Finished	MS (5ppb), IWST-160401B, 10 mL
57	N019606-006A,SAMP,1	19	1000	Unknown		05/09/2016 19:18	Finished	SAMP, 10mL
58	N019606-006AMS,MS,1	20	1000	Unknown		05/09/2016 19:28	Finished	MS (5ppb), IWST-160401B, 10 mL
59	N019606-010A,SAMP,500	21	1000	Unknown		05/09/2016 19:38	Finished	SAMP, 20uL>10mL
60	N019606-010AMS,MS,500	22	1000	Unknown		05/09/2016 19:48	Finished	MS (5ppb), IWST-160401B, 20uL>
61	CCV-5,CCV,1	23	1000	Unknown		05/09/2016 19:57	Finished	CCV @ 5ppb, IWST-160401A
62	CCB-5,CCB,1	24	1000	Unknown		05/09/2016 20:07	Finished	CCB
63	N019606-011A,SAMP,500	25	1000	Unknown		05/09/2016 20:17	Finished	SAMP, 20uL>10mL
64	N019606-011AMS,MS,500	26	1000	Unknown		05/09/2016 20:27	Finished	MS (5ppb), IWST-160401B, 20uL>
65	CCV-6,CCV1,1	27	1000	Unknown		05/09/2016 20:37	Finished	CCV @ 10ppb, IWST-160401A
66	CCB-6,CCB,1	28	1000	Unknown		05/09/2016 20:47	Finished	CCB
67	SHUTDOWN	29	1000	Unknown		05/09/2016 20:57	Finished	
68	Eluent: R160505A, R160509A	30	1000	Unknown		n.a.	Finished	Eluent
69	PCR: R160504B, R160509B	31	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

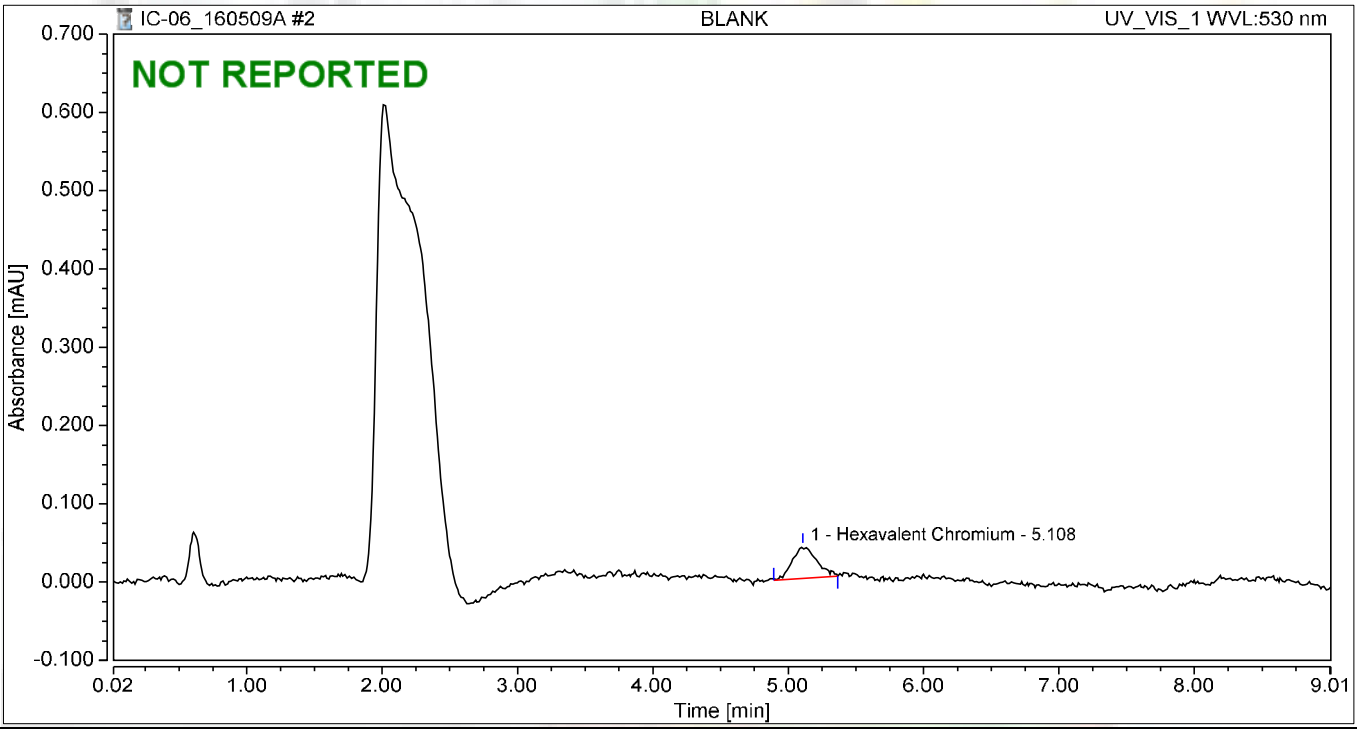
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.014	0.049	100.00	100.00	0.0418
Total:			**0.014**	**0.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

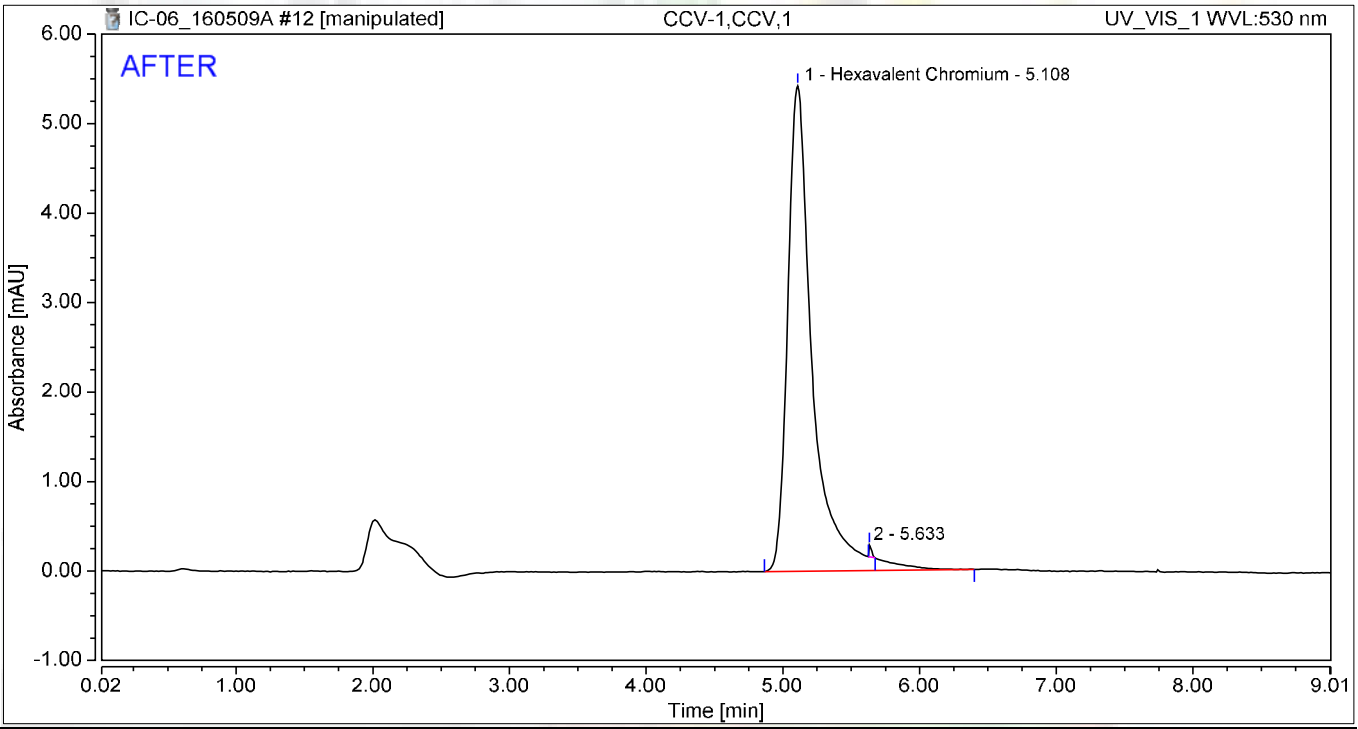
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.008	0.041	100.00	100.00	0.0183
Total:			**0.008**	**0.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.152	5.426	99.75	97.69	4.9160
2		5.633	0.003	0.129	0.25	2.31	n.a.
Total:			**1.155**	**5.554**	**100.00**	**100.00**	

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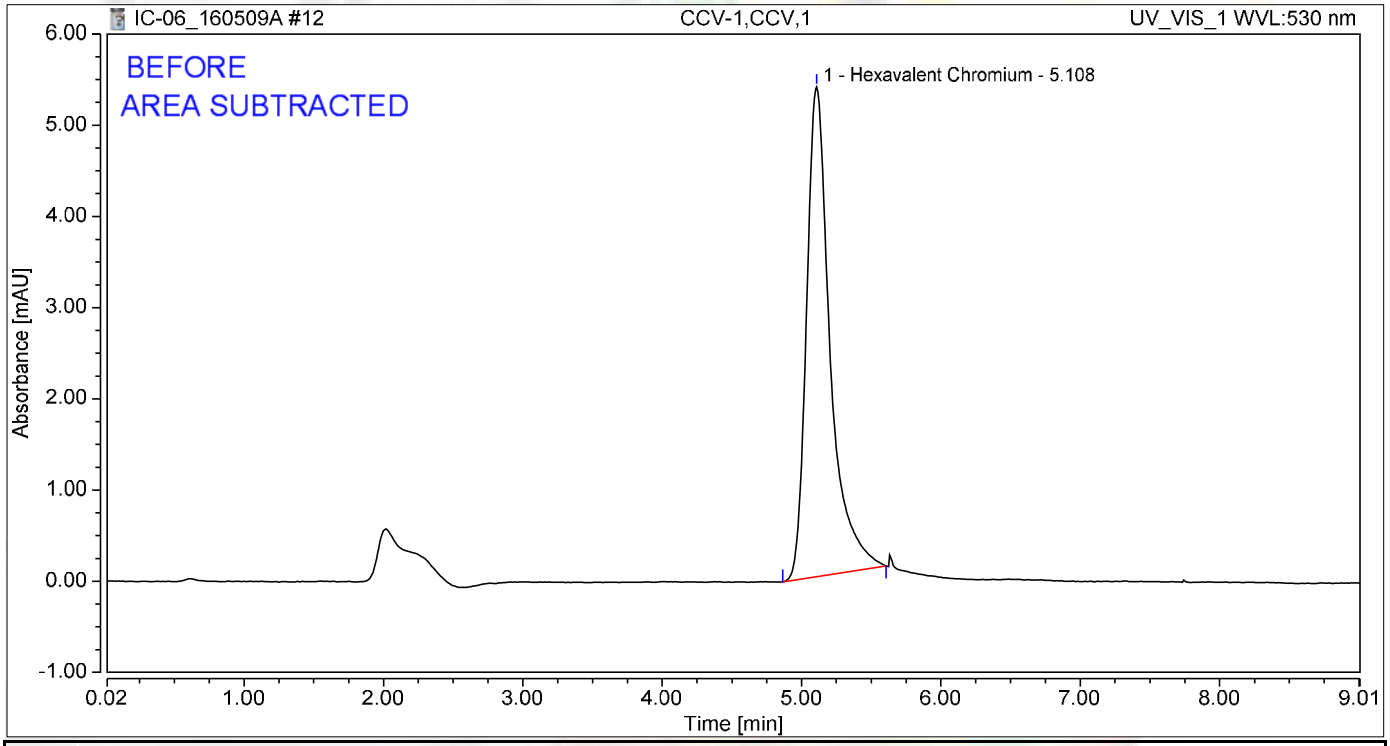
Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.052	5.372	100.00	100.00	4.4840
Total:			**1.052**	**5.372**	**100.00**	**100.00**	

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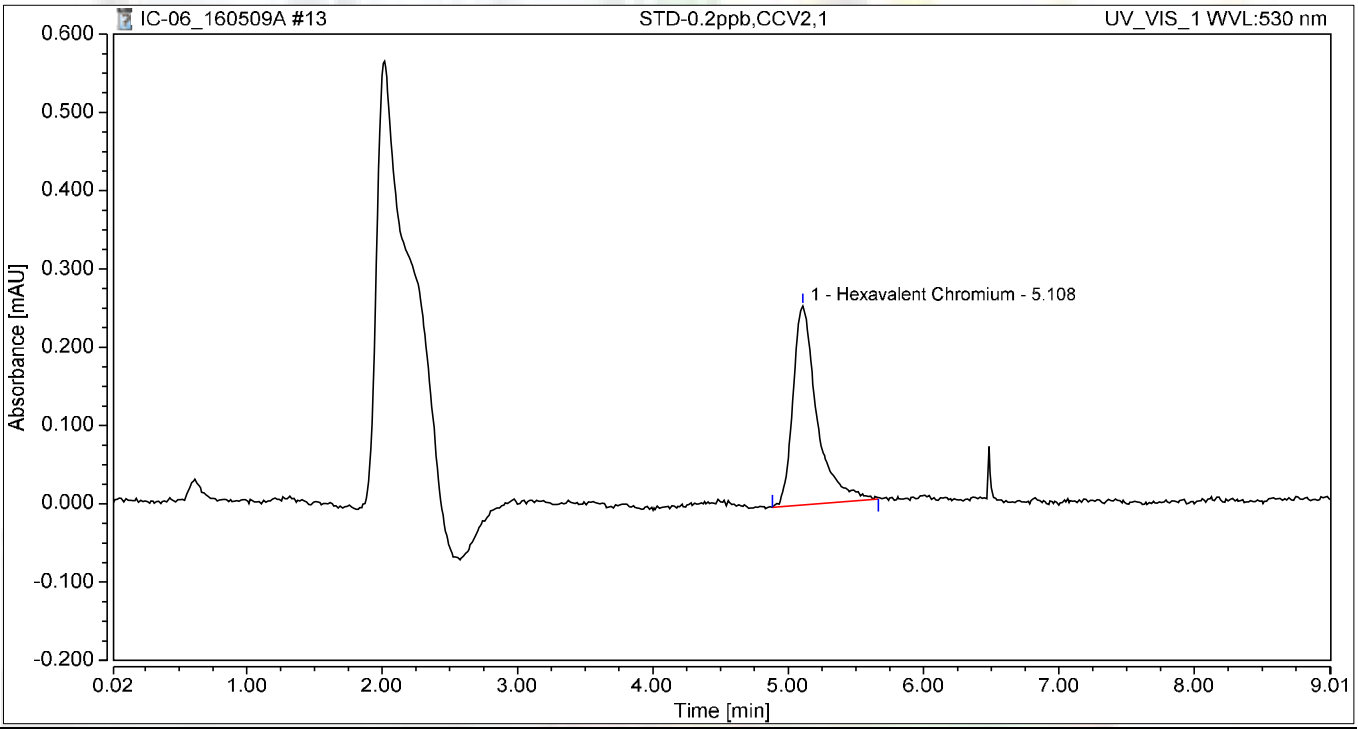
Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

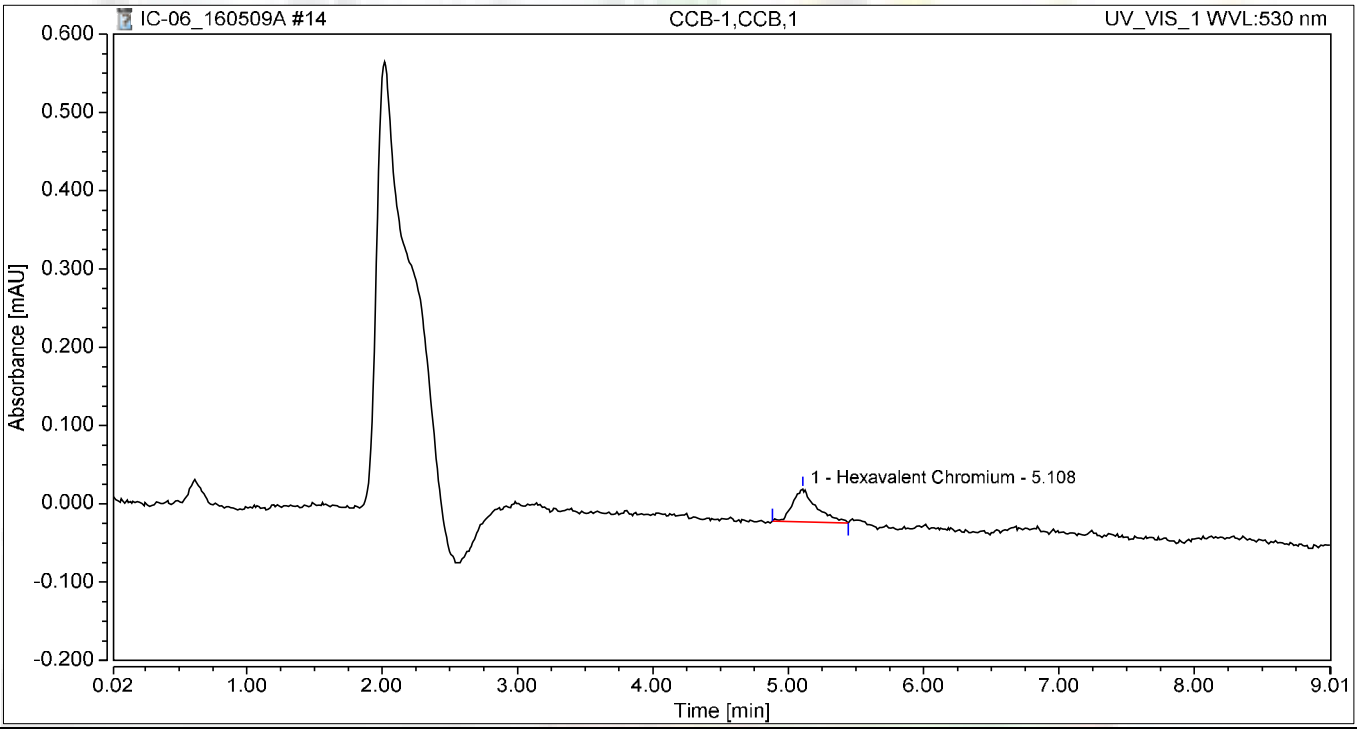
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.052	0.254	100.00	100.00	0.2062
Total:			**0.052**	**0.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

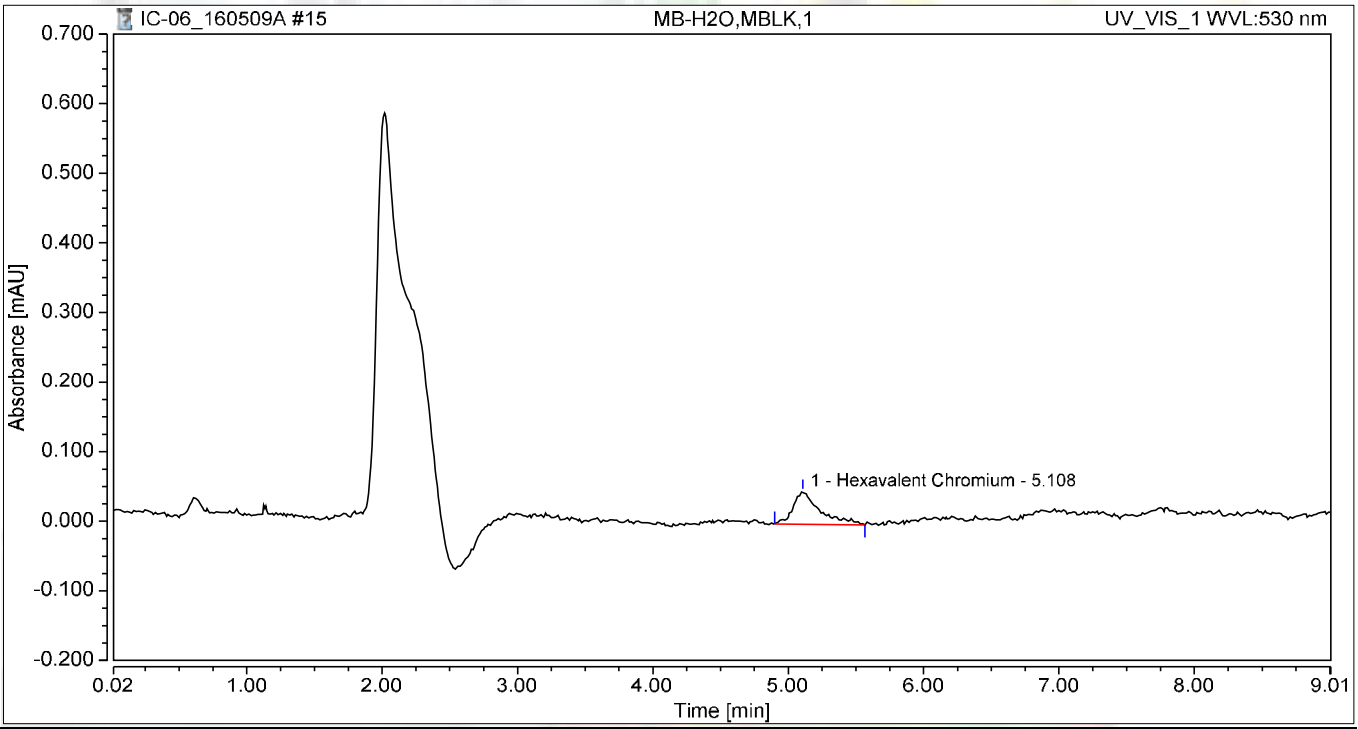
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.009	0.042	100.00	100.00	0.0189
Total:			**0.009**	**0.042**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

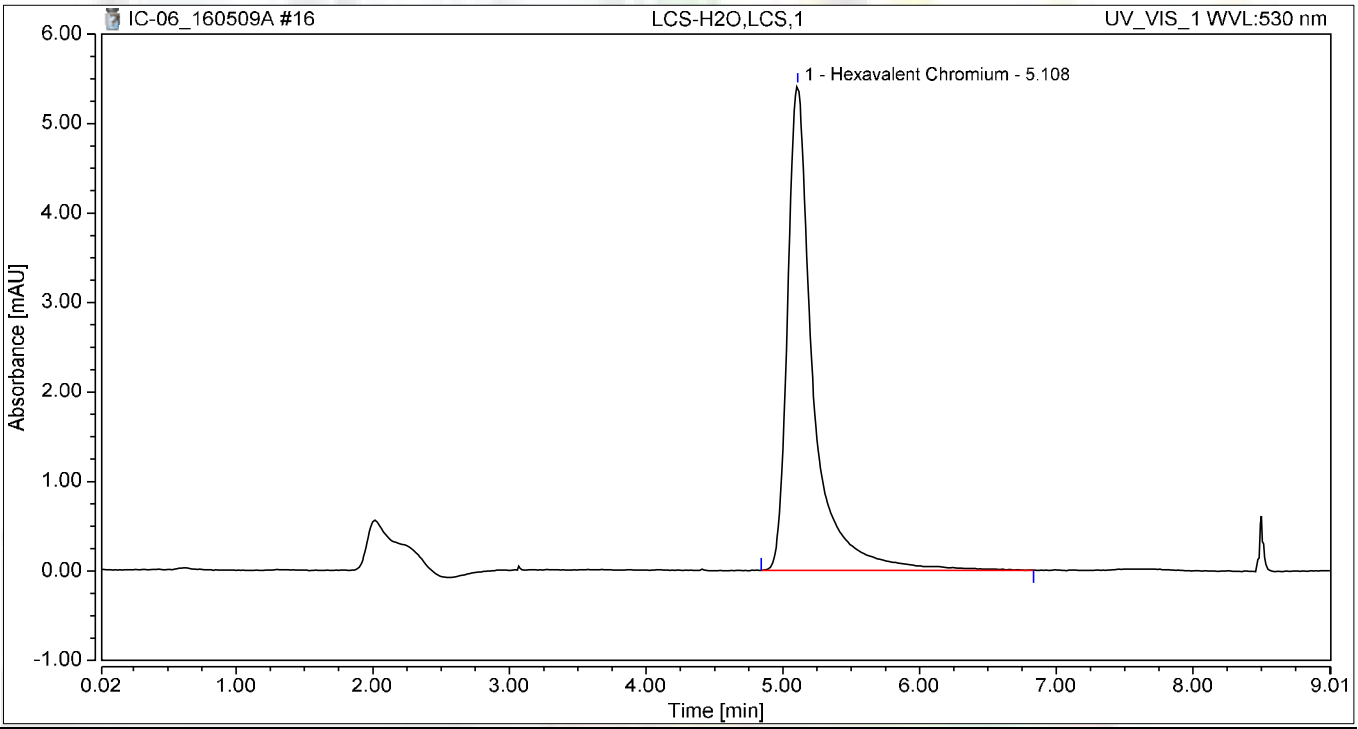
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.011	0.047	100.00	100.00	0.0284
Total:			**0.011**	**0.047**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

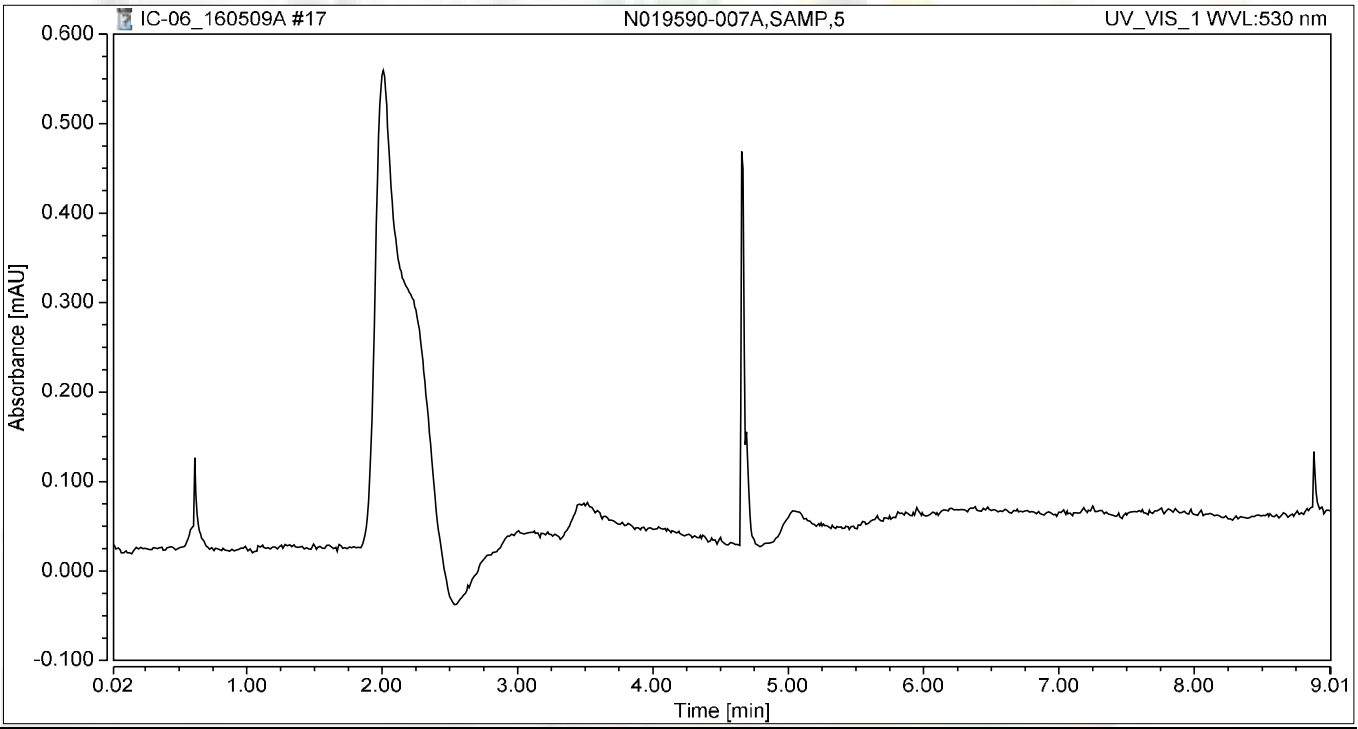
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.180	5.420	100.00	100.00	5.0333
Total:			**1.180**	**5.420**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019590-007A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 12:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

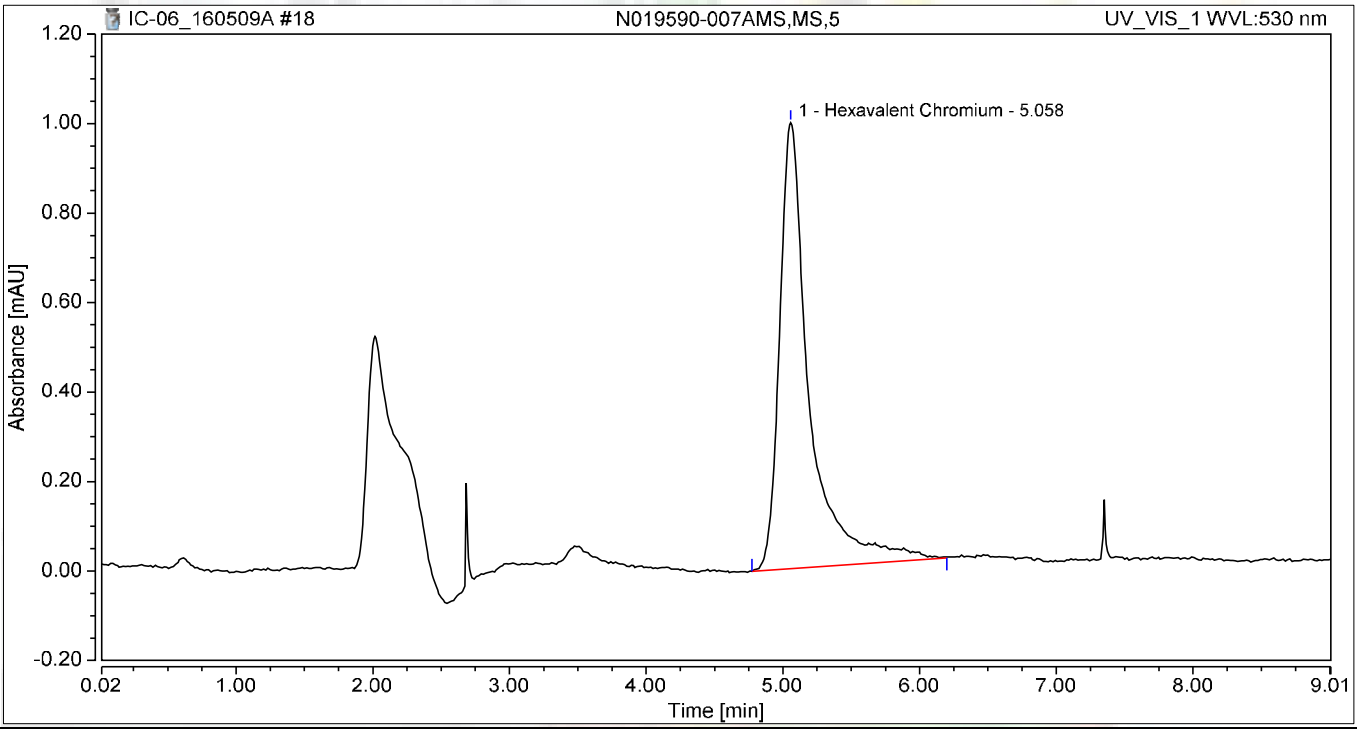
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019590-007AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 12:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

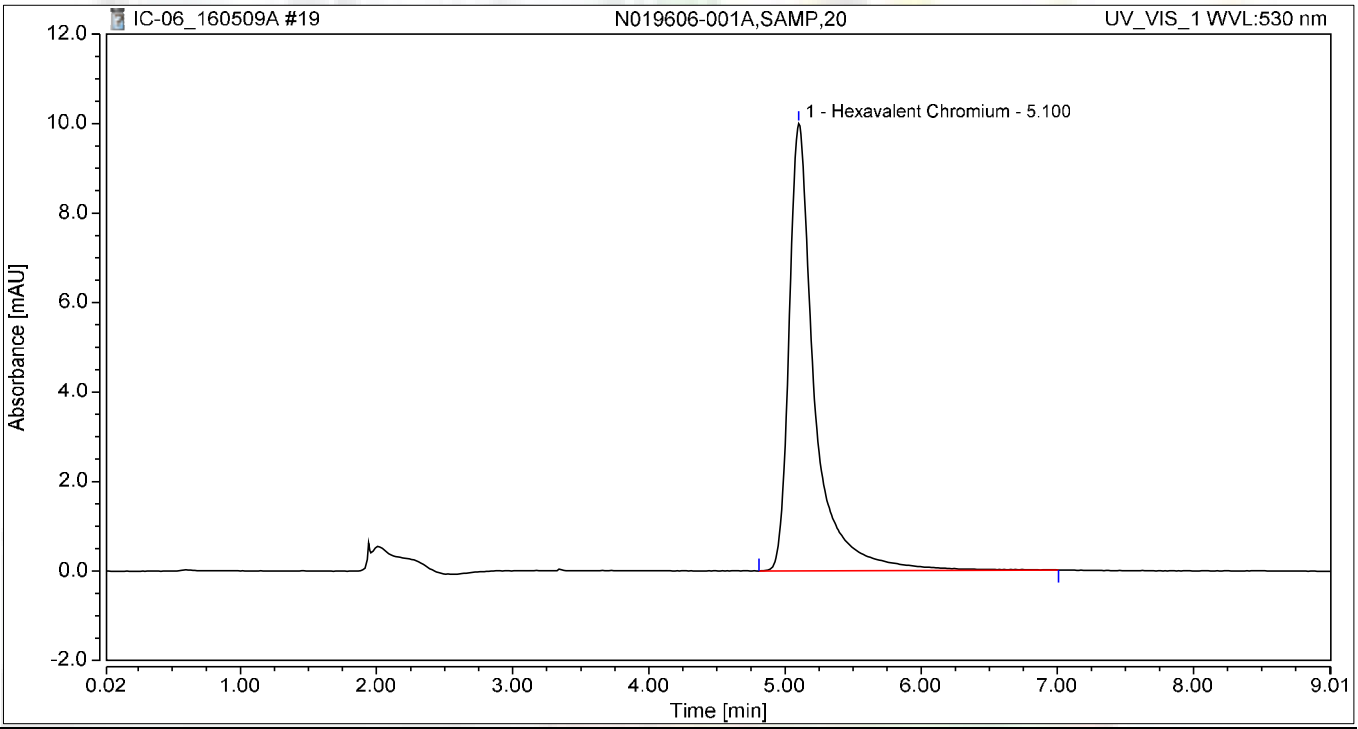
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.058	0.252	0.997	100.00	100.00	1.0593
Total:			**0.252**	**0.997**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-001A,SAMP,20**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 12:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

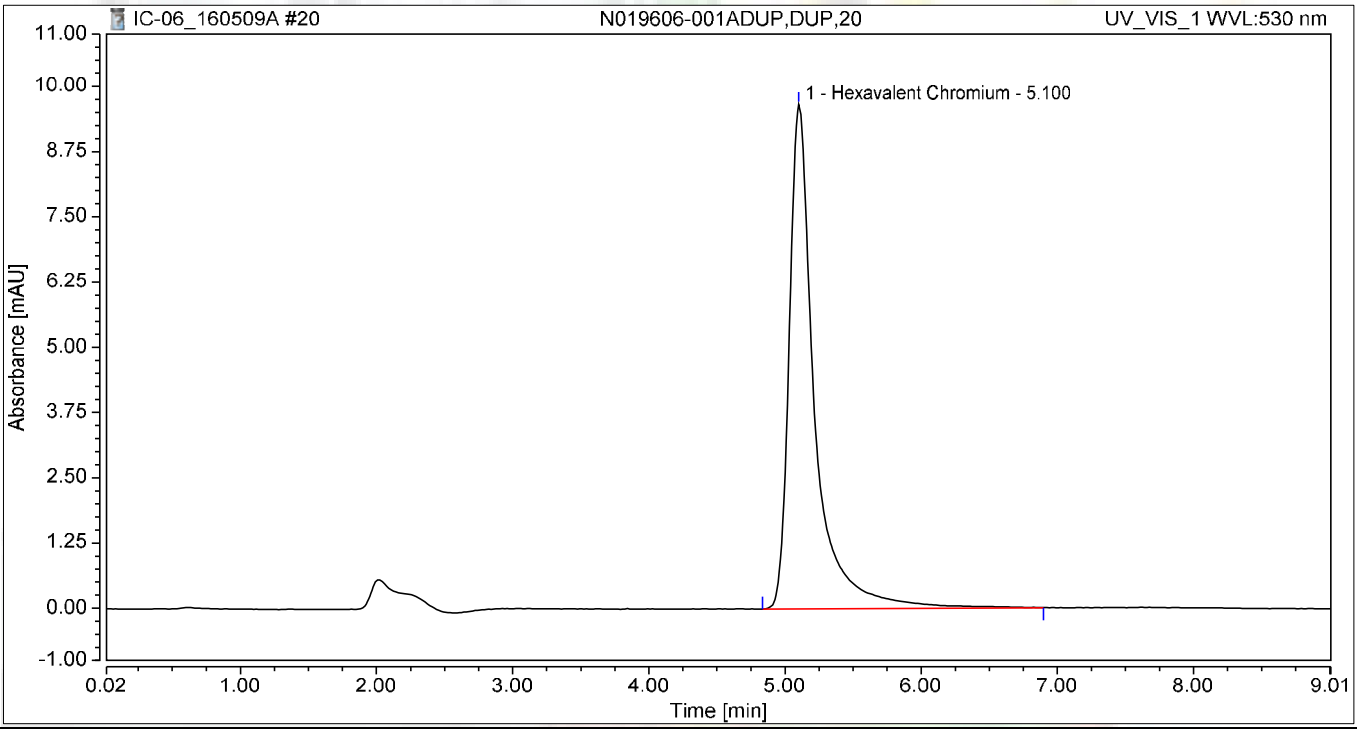
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.175	9.998	100.00	100.00	9.2943
Total:			**2.175**	**9.998**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-001ADUP,DUP,20**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

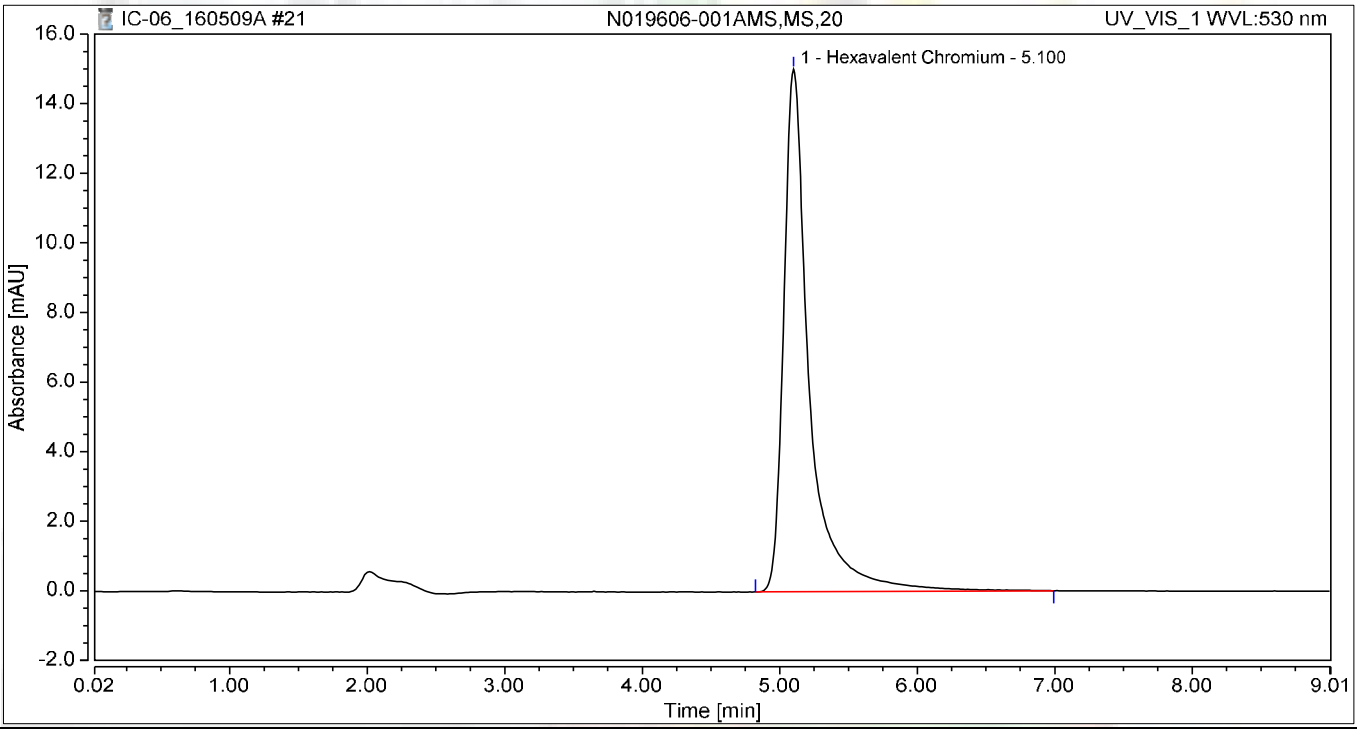
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.101	9.666	100.00	100.00	8.9769
Total:			**2.101**	**9.666**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-001AMS,MS,20**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

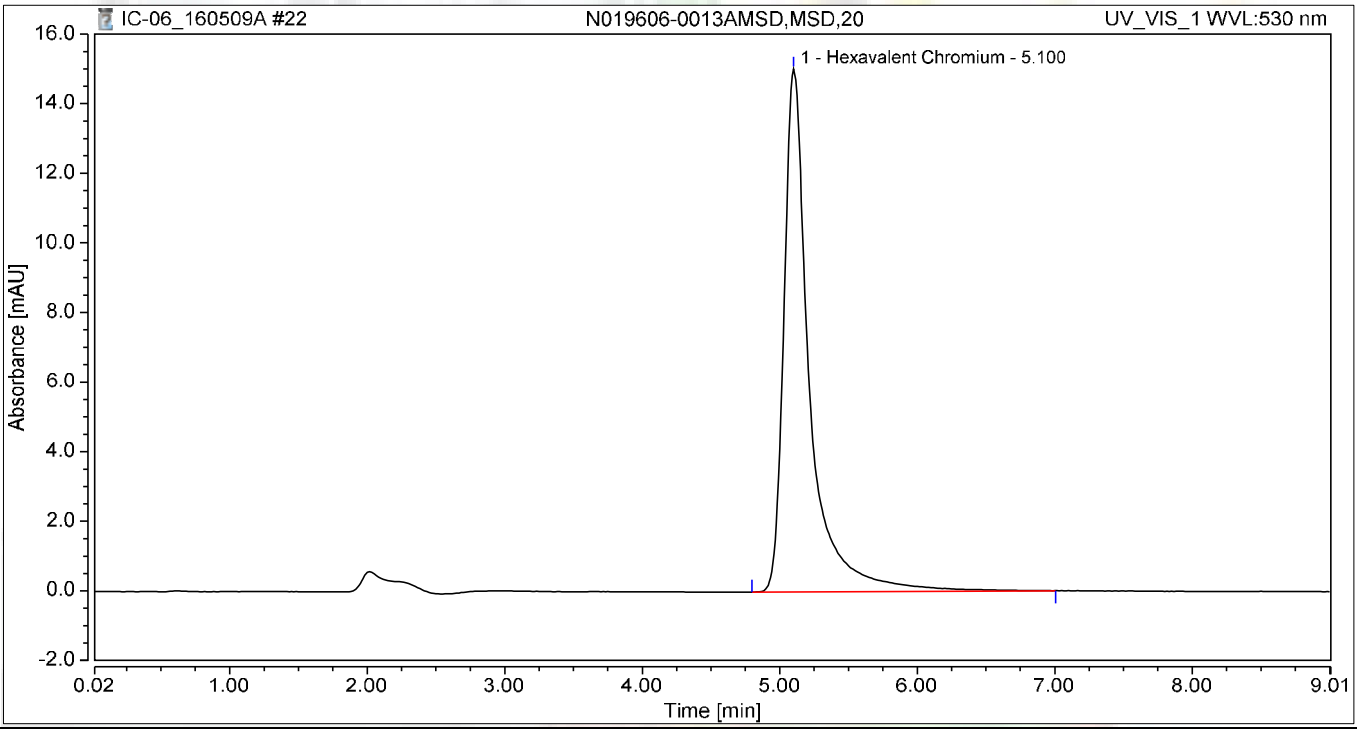
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	3.256	15.009	100.00	100.00	13.9200
Total:			**3.256**	**15.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-0013AMSD,MSD,20**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	3.250	15.017	100.00	100.00	13.8983
Total:			**3.250**	**15.017**	**100.00**	**100.00**	

5/17/2016
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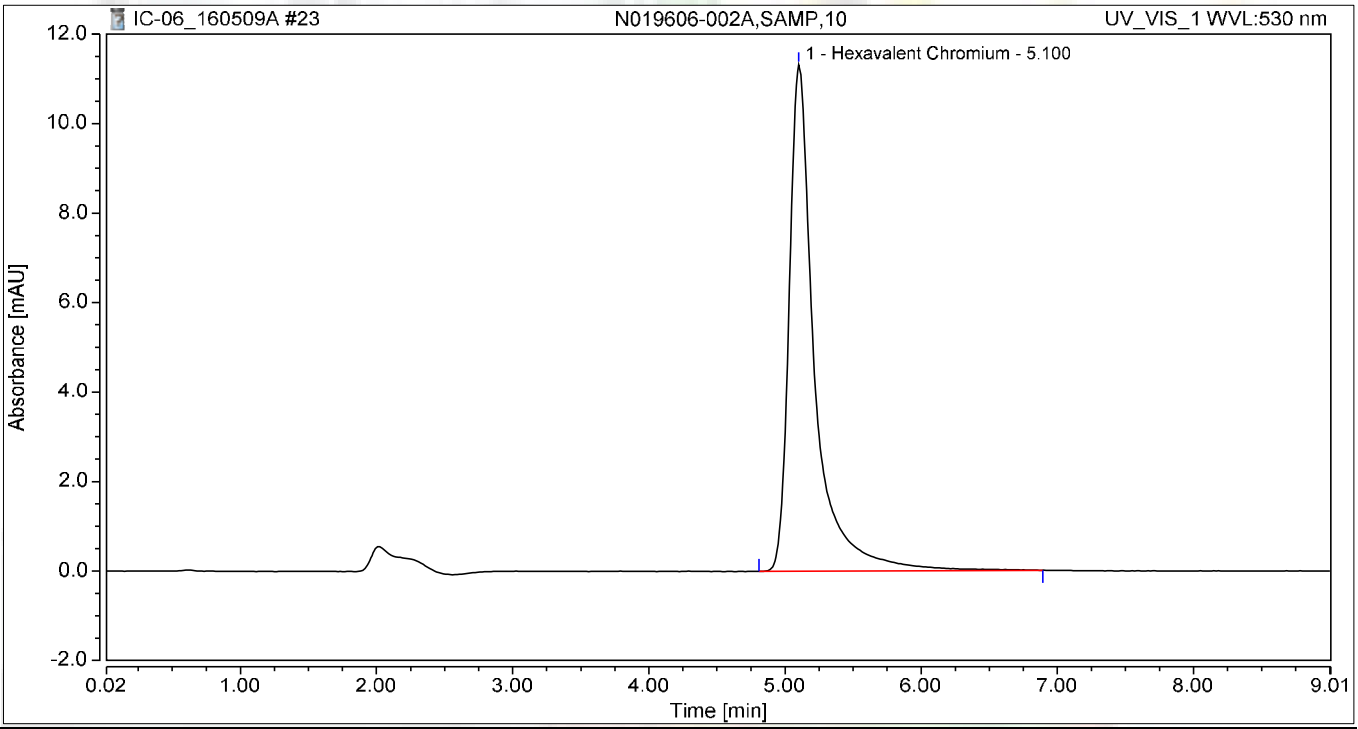
Chromatogram and Results

Injection Details

Injection Name:	**N019606-002A,SAMP,10**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 13:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

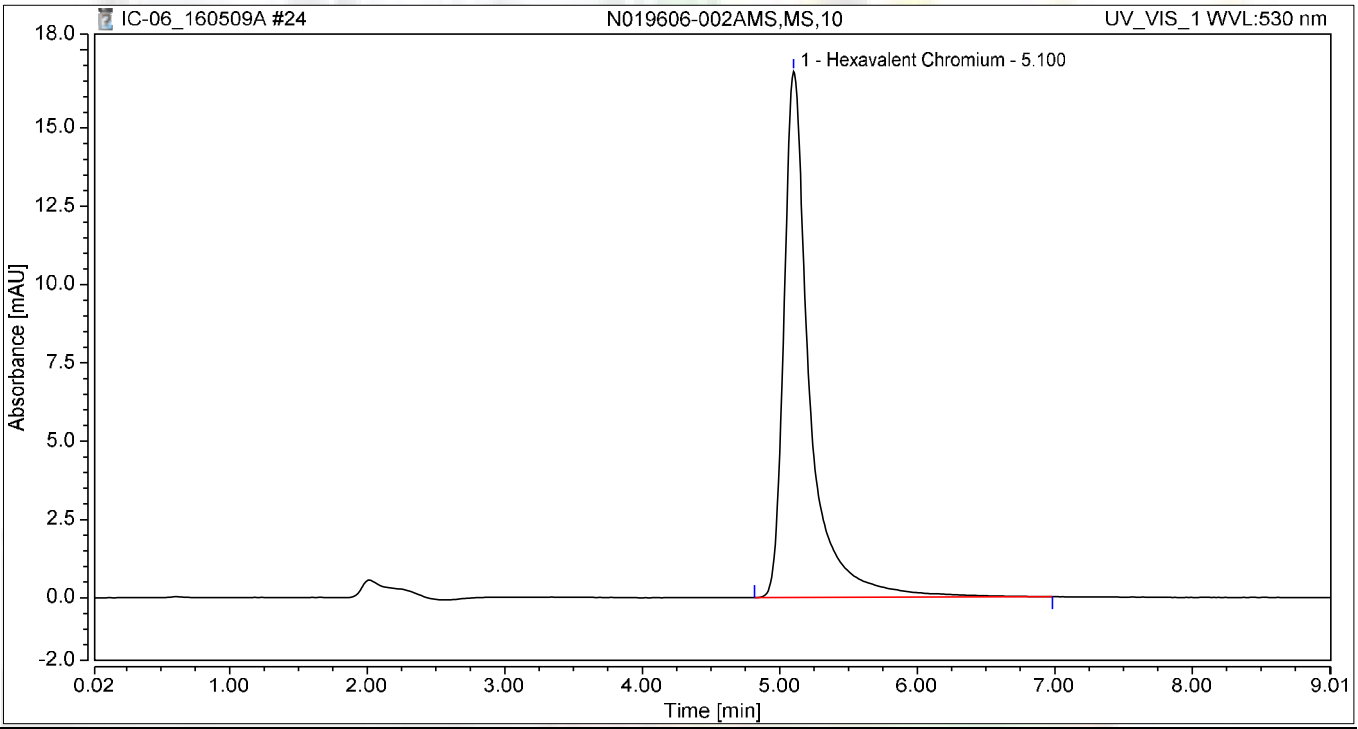
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.469	11.324	100.00	100.00	10.5531
Total:			**2.469**	**11.324**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-002AMS,MS,10**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 13:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

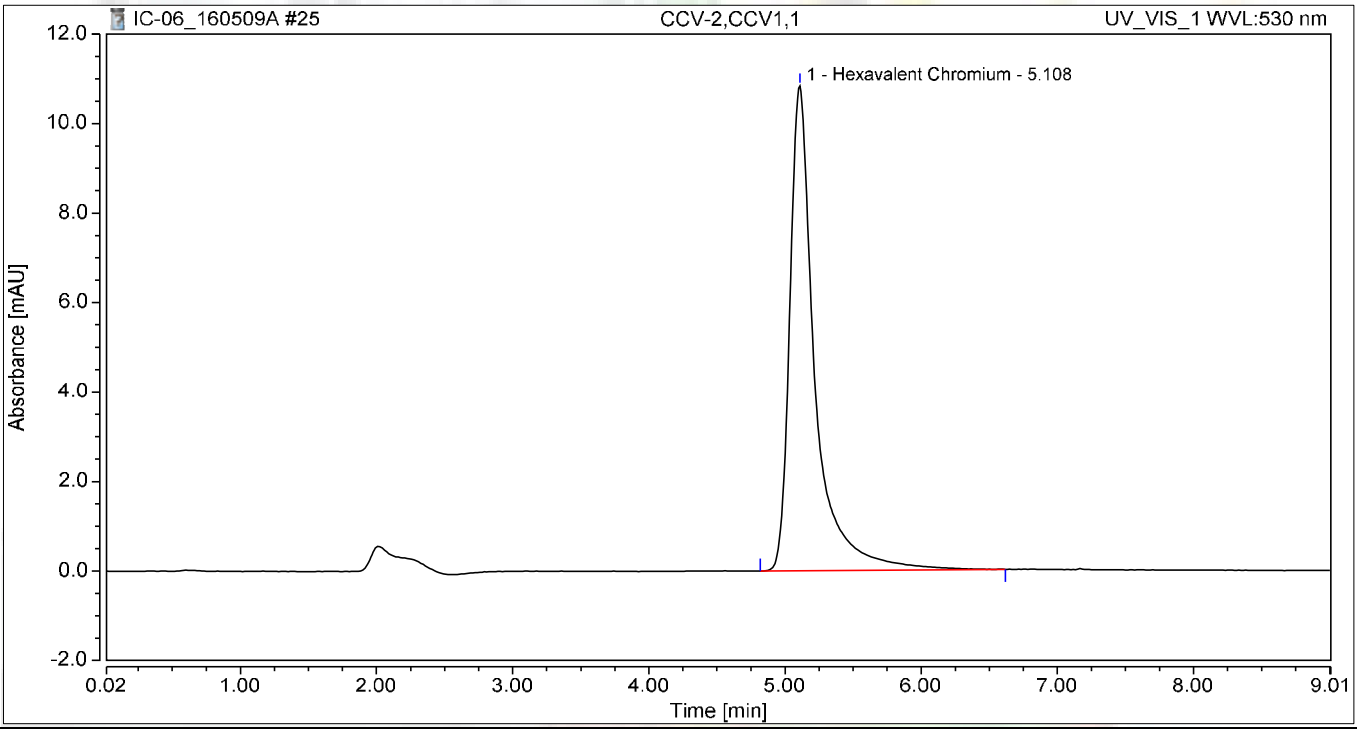
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	3.646	16.797	100.00	100.00	15.5904
Total:			**3.646**	**16.797**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

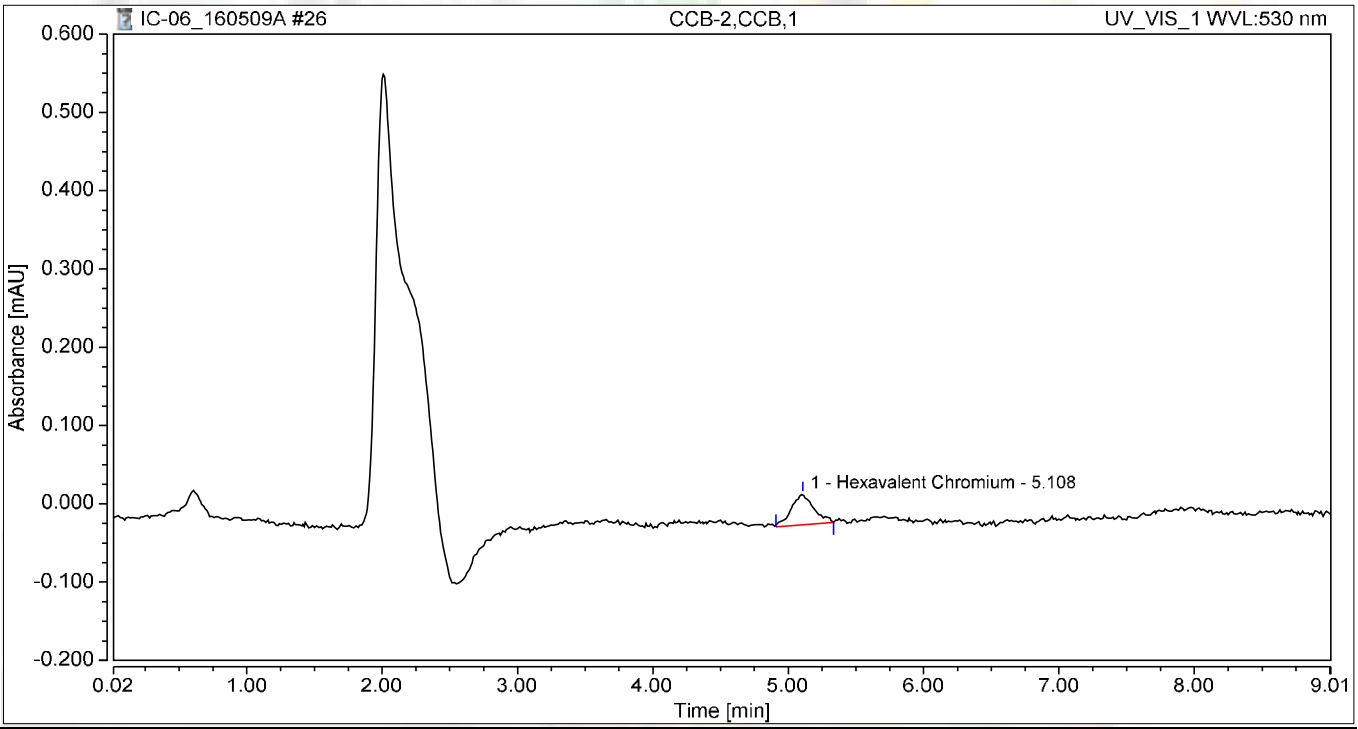
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.325	10.838	100.00	100.00	9.9348
Total:			**2.325**	**10.838**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

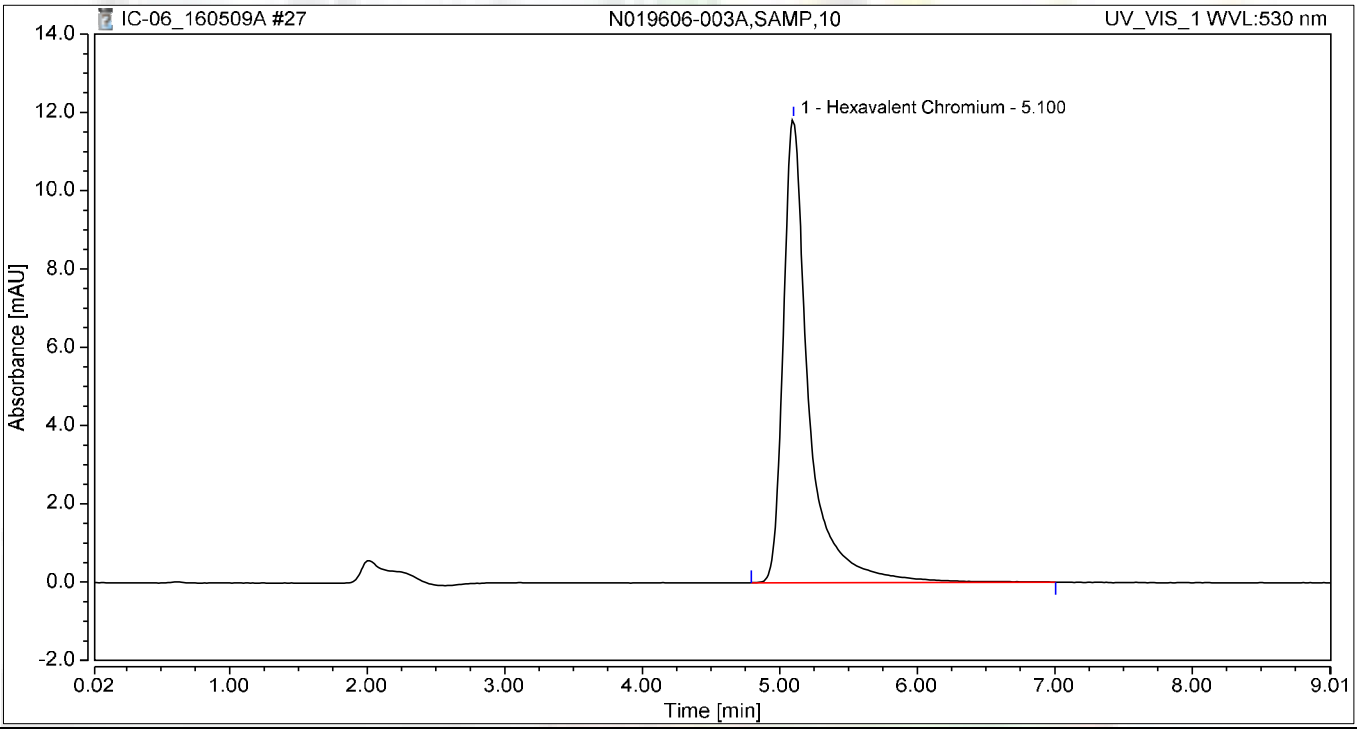
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.008	0.039	100.00	100.00	0.0146
Total:			**0.008**	**0.039**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-003A,SAMP,10**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

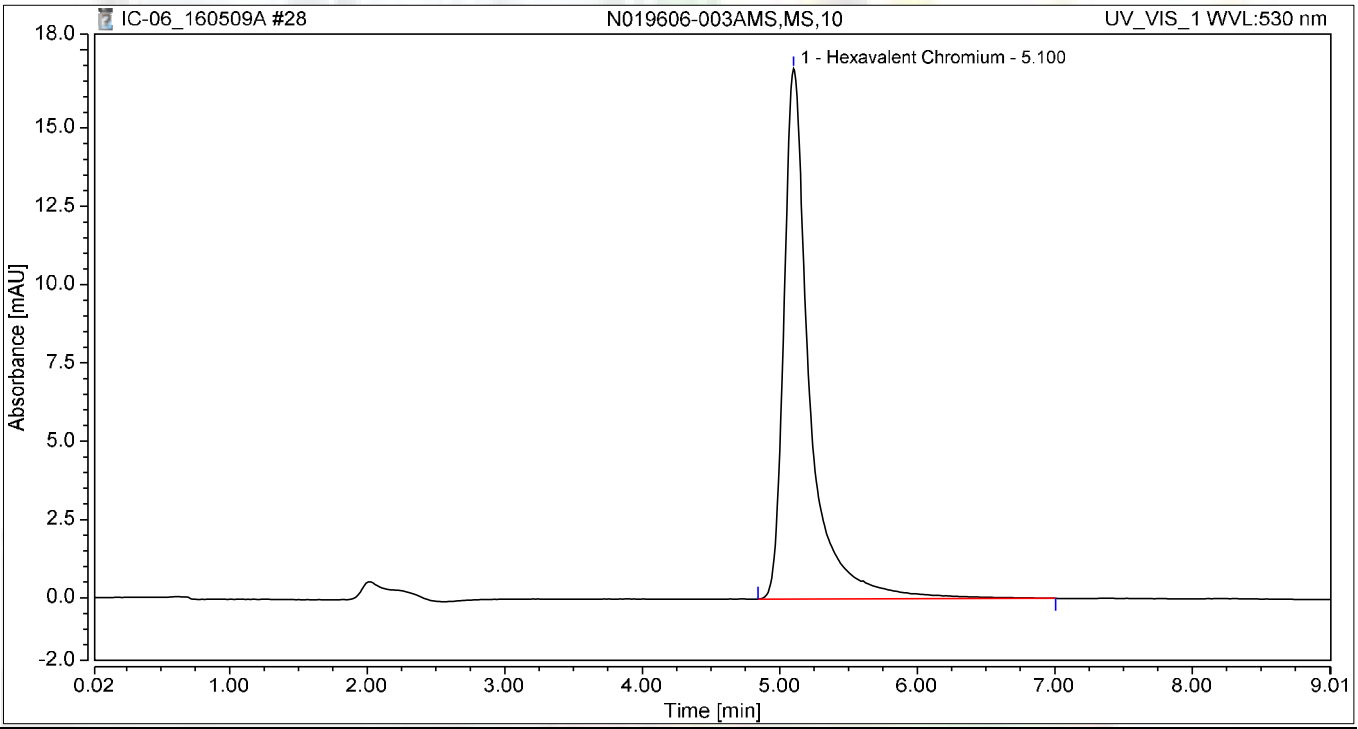
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.556	11.842	100.00	100.00	10.9262
Total:			**2.556**	**11.842**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-003AMS,MS,10**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 14:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

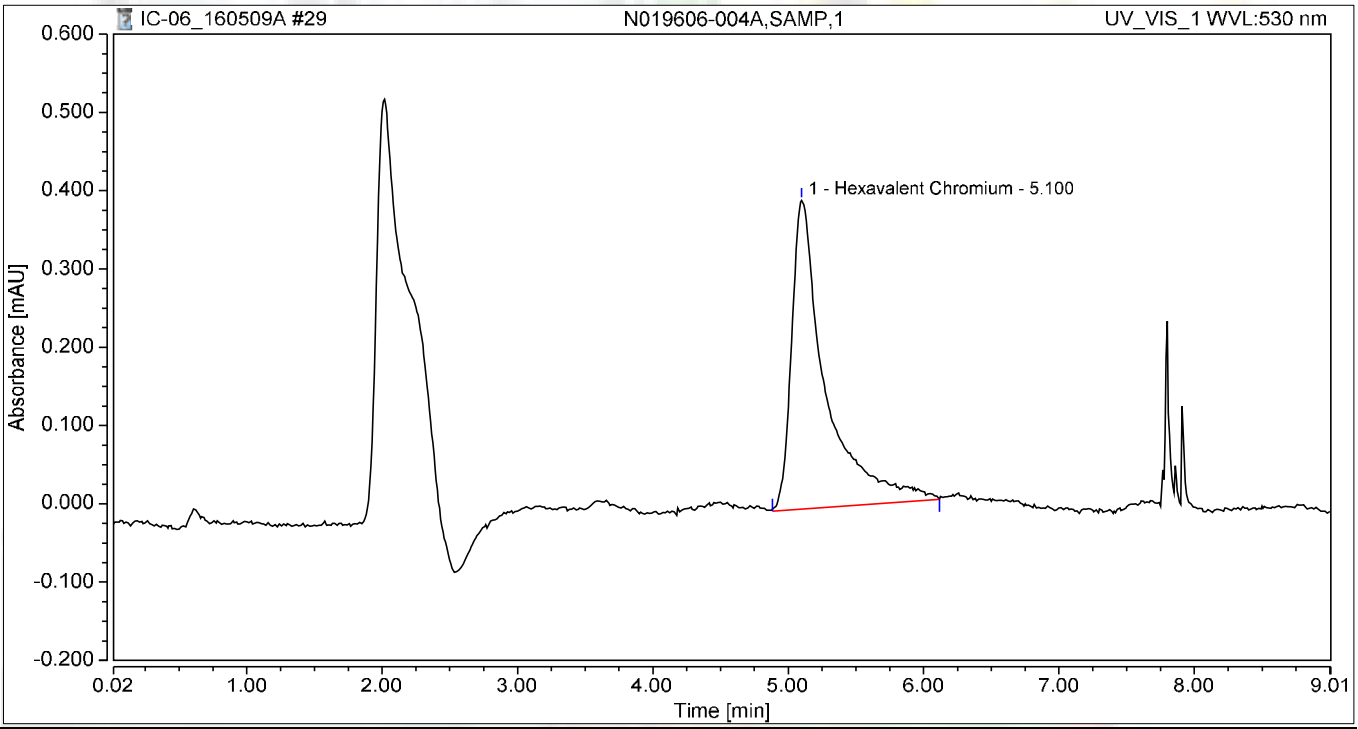
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	3.675	16.926	100.00	100.00	15.7173
Total:			**3.675**	**16.926**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-004A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 14:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

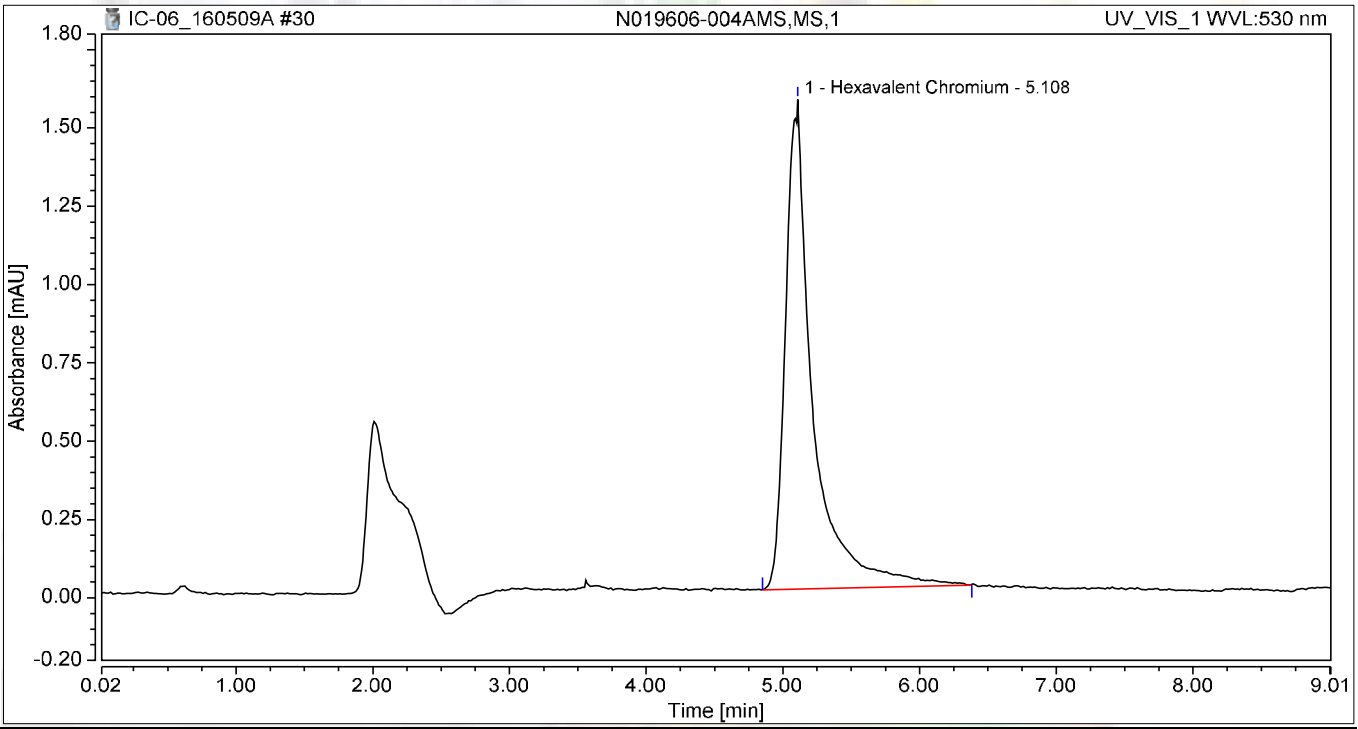
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.115	0.395	100.00	100.00	0.4744
Total:			**0.115**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-004AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 14:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

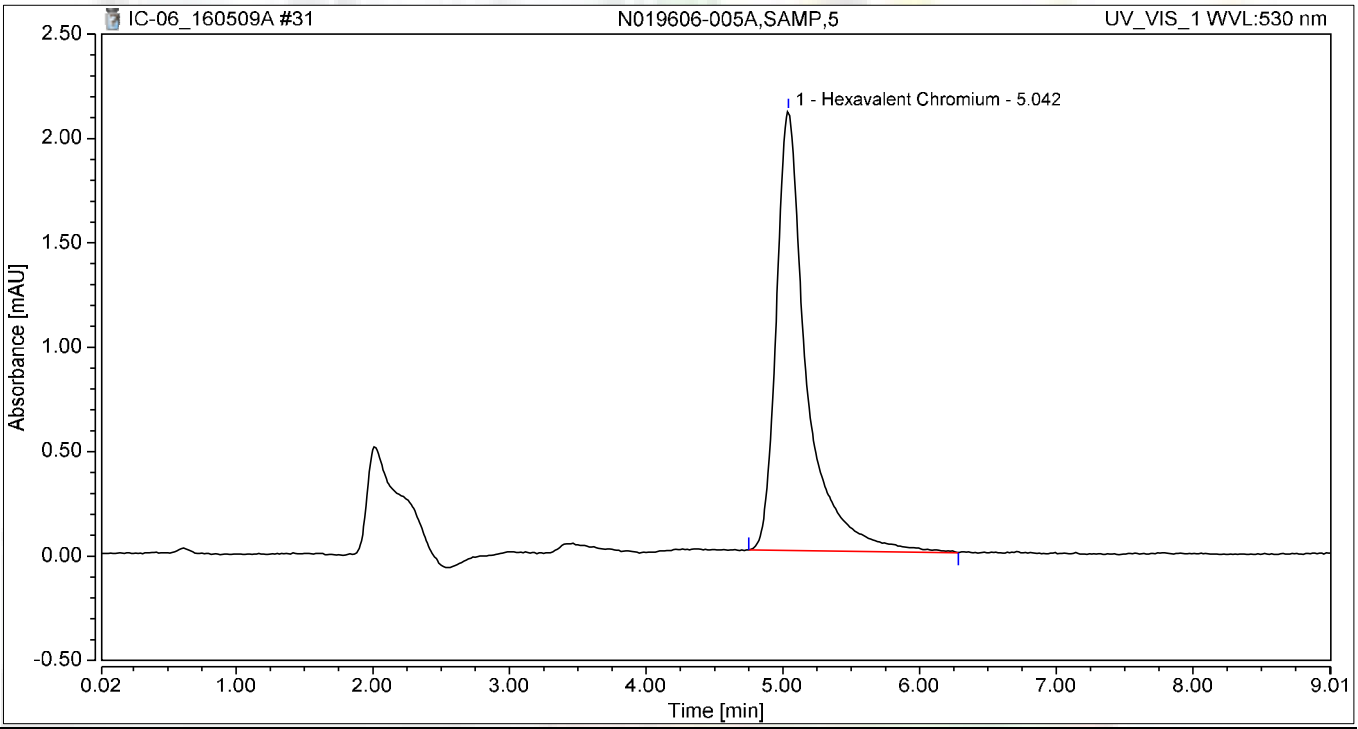
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.362	1.564	100.00	100.00	1.5303
Total:			**0.362**	**1.564**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-005A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

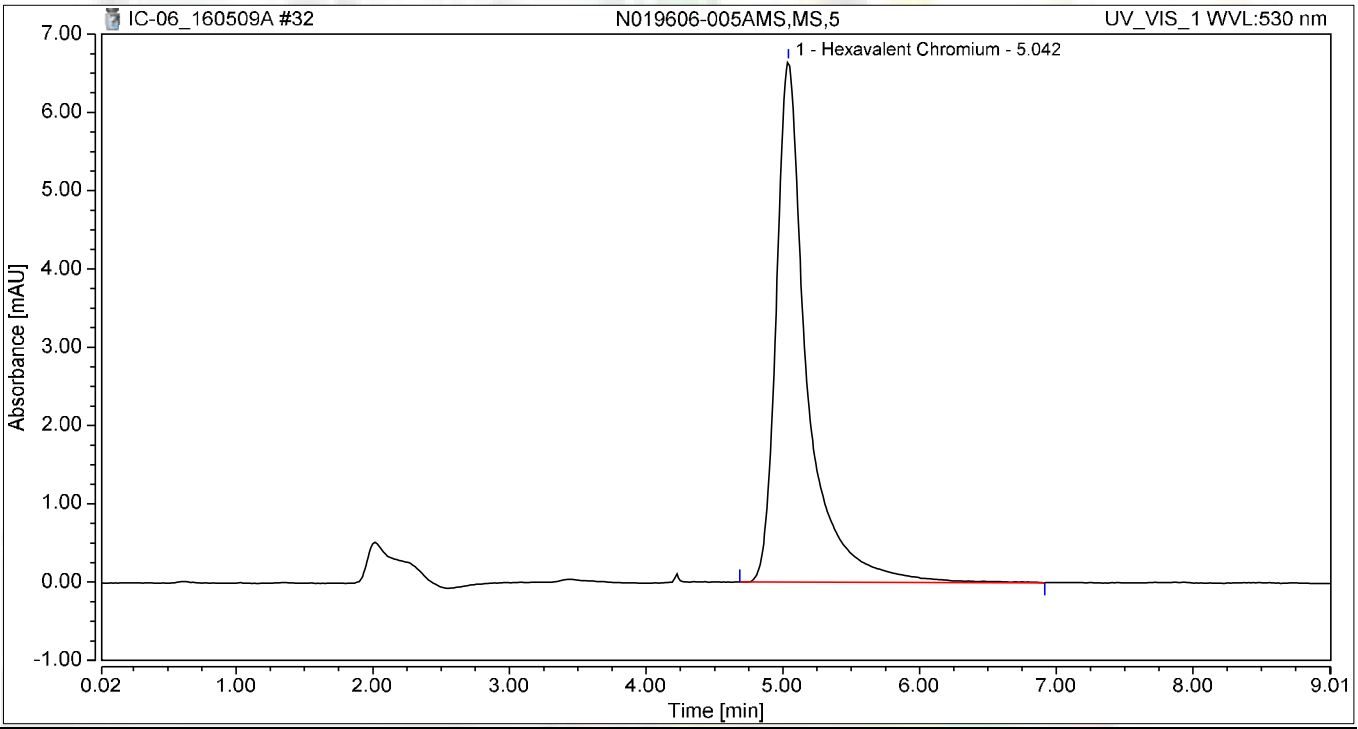
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.042	0.540	2.104	100.00	100.00	2.2940
Total:			**0.540**	**2.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-005AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

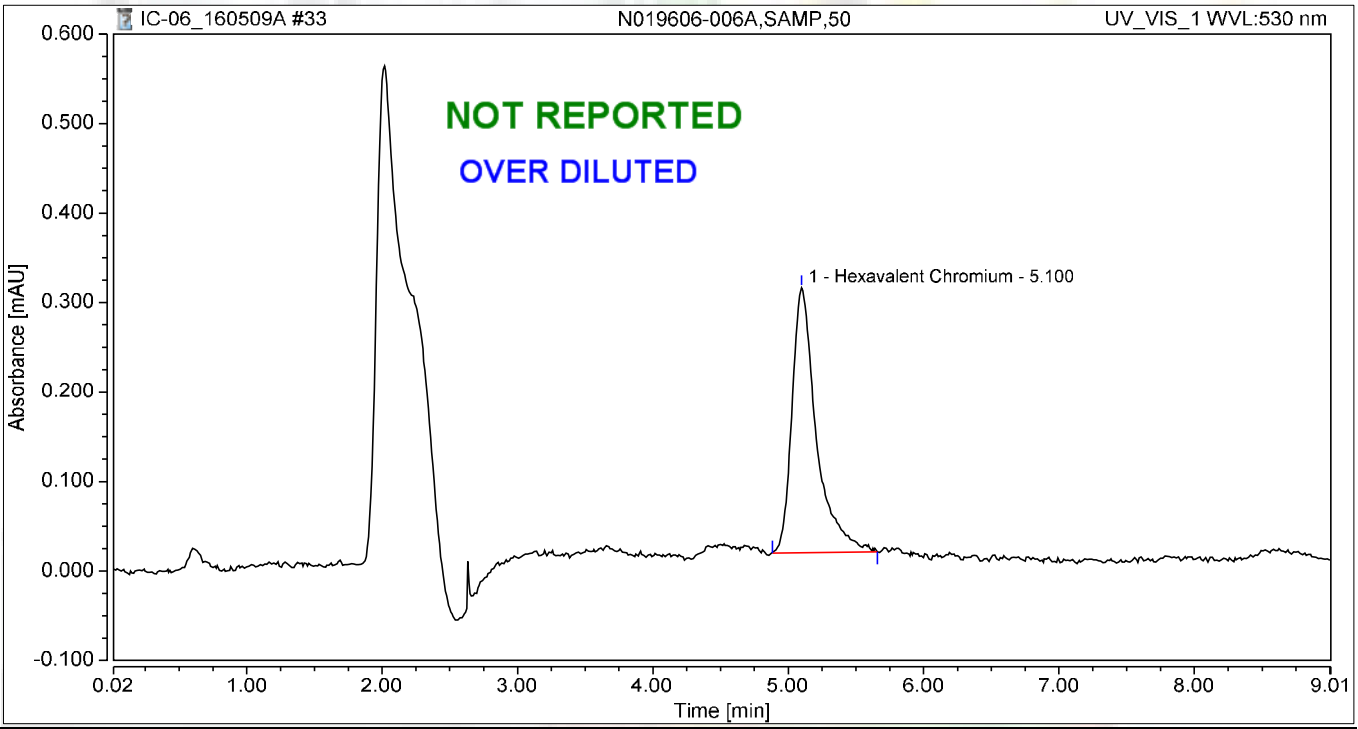
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.042	1.739	6.651	100.00	100.00	7.4279
Total:			**1.739**	**6.651**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006A,SAMP,50**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

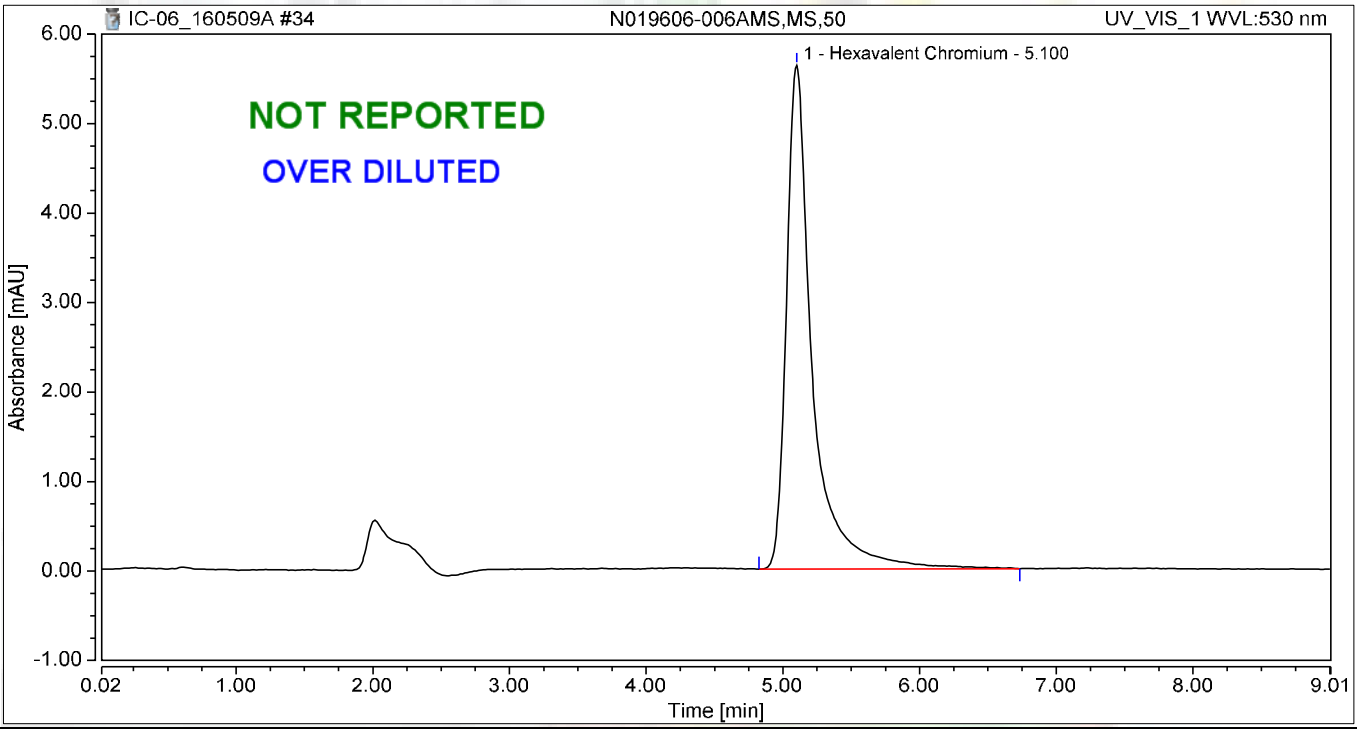
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.062	0.296	100.00	100.00	0.2464
Total:			**0.062**	**0.296**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006AMS,MS,50**	*Run Time (min):*	**8.99**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

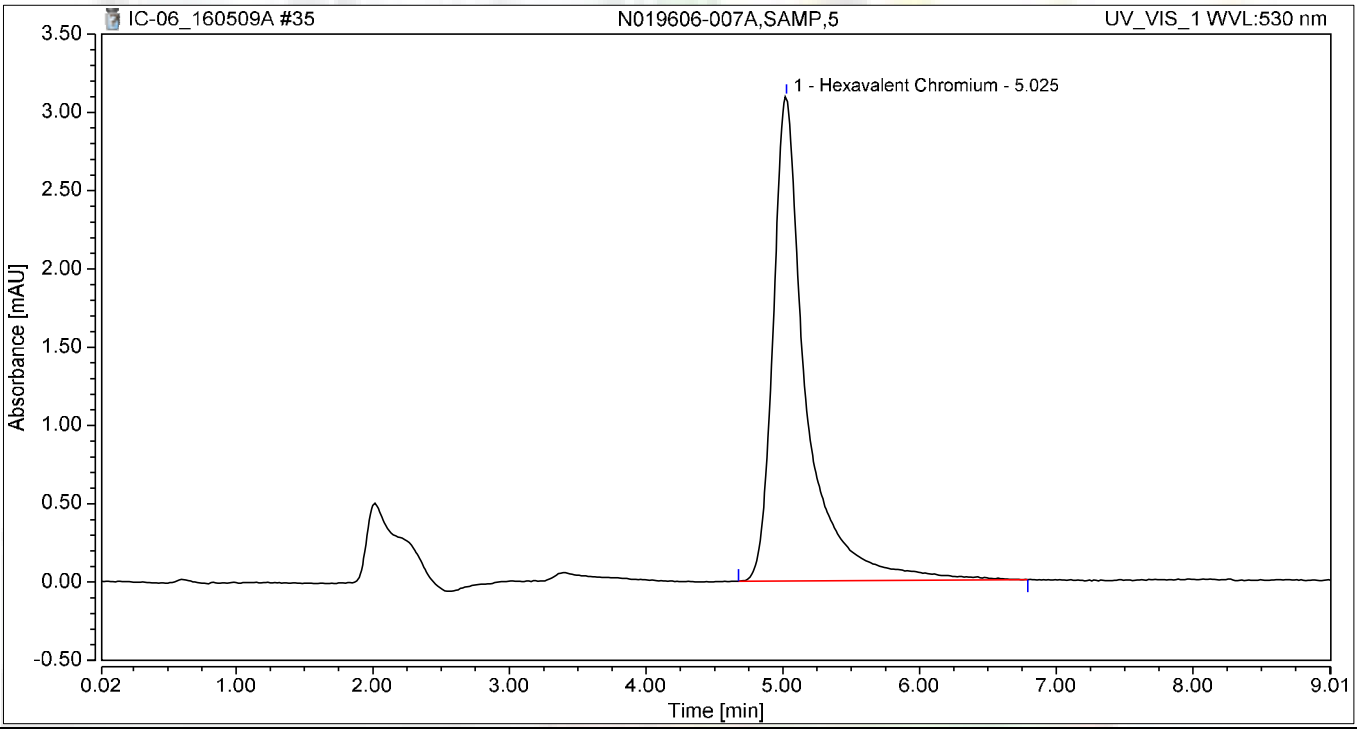
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.237	5.628	100.00	100.00	5.2793
Total:			**1.237**	**5.628**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-007A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 15:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

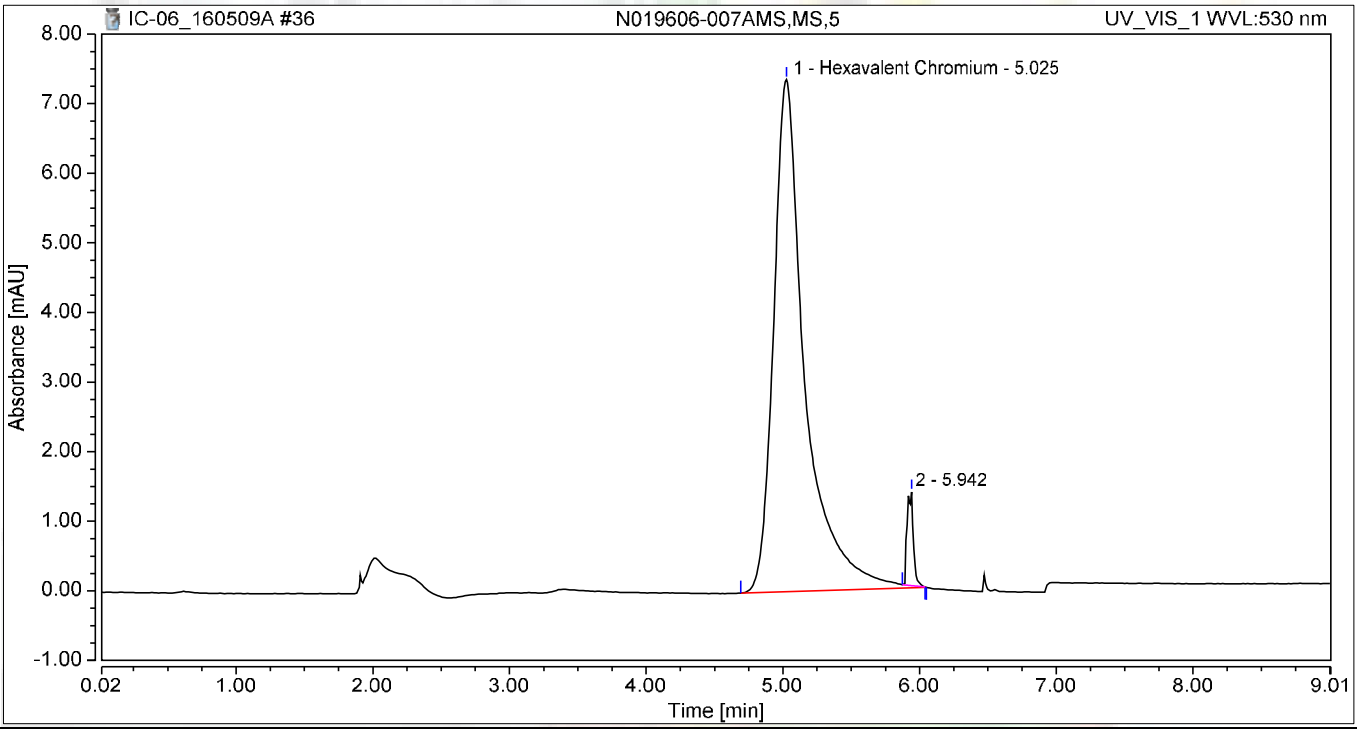
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.025	0.868	3.092	100.00	100.00	3.6969
Total:			**0.868**	**3.092**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-007AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 15:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

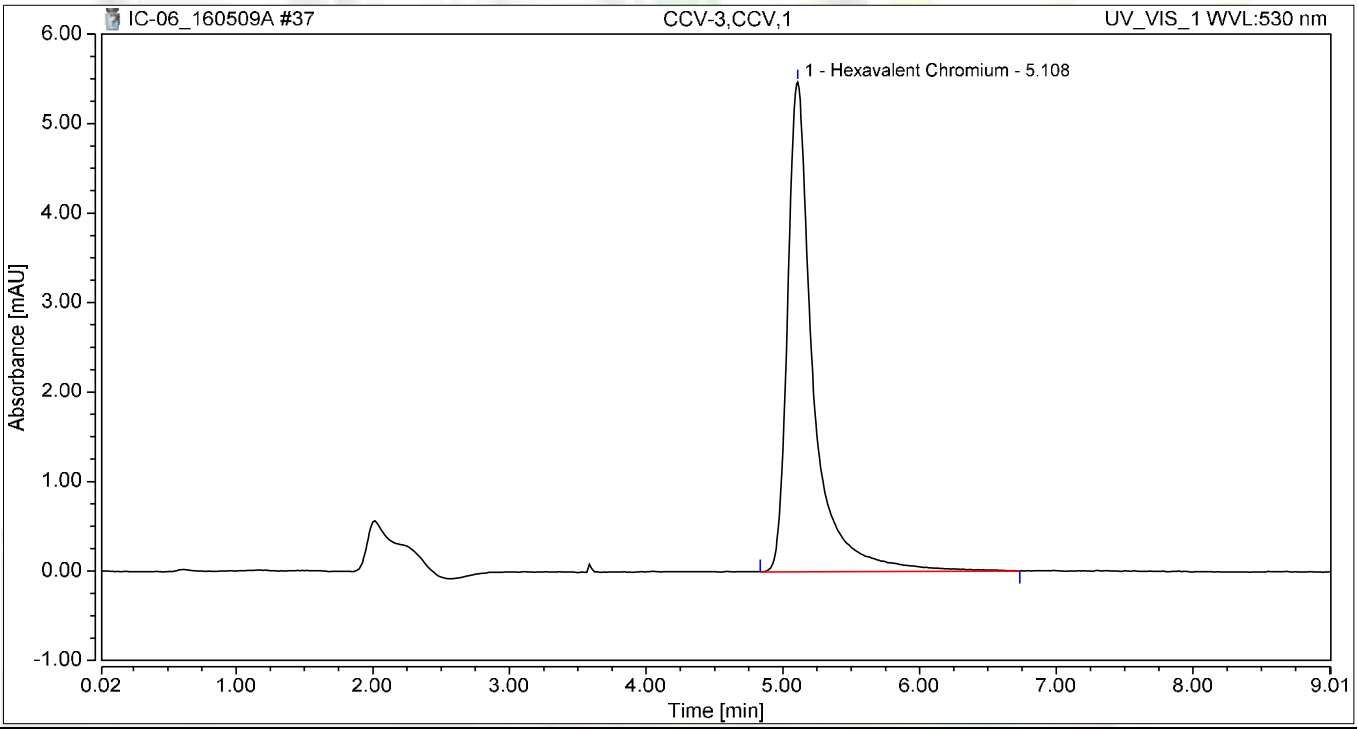
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.025	1.953	7.357	96.45	84.52	8.3449
2		5.942	0.072	1.348	3.55	15.48	n.a.
Total:			**2.025**	**8.705**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

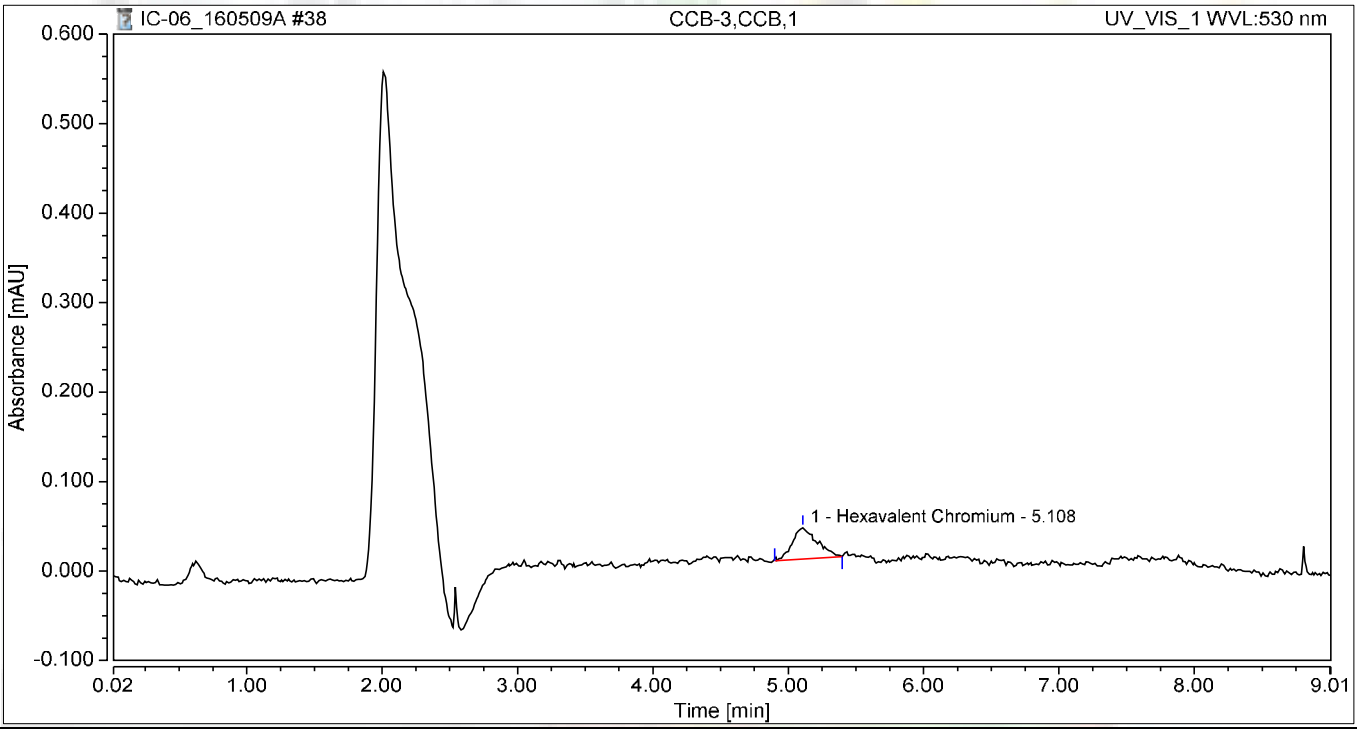
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.188	5.474	100.00	100.00	5.0682
Total:			**1.188**	**5.474**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 16:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

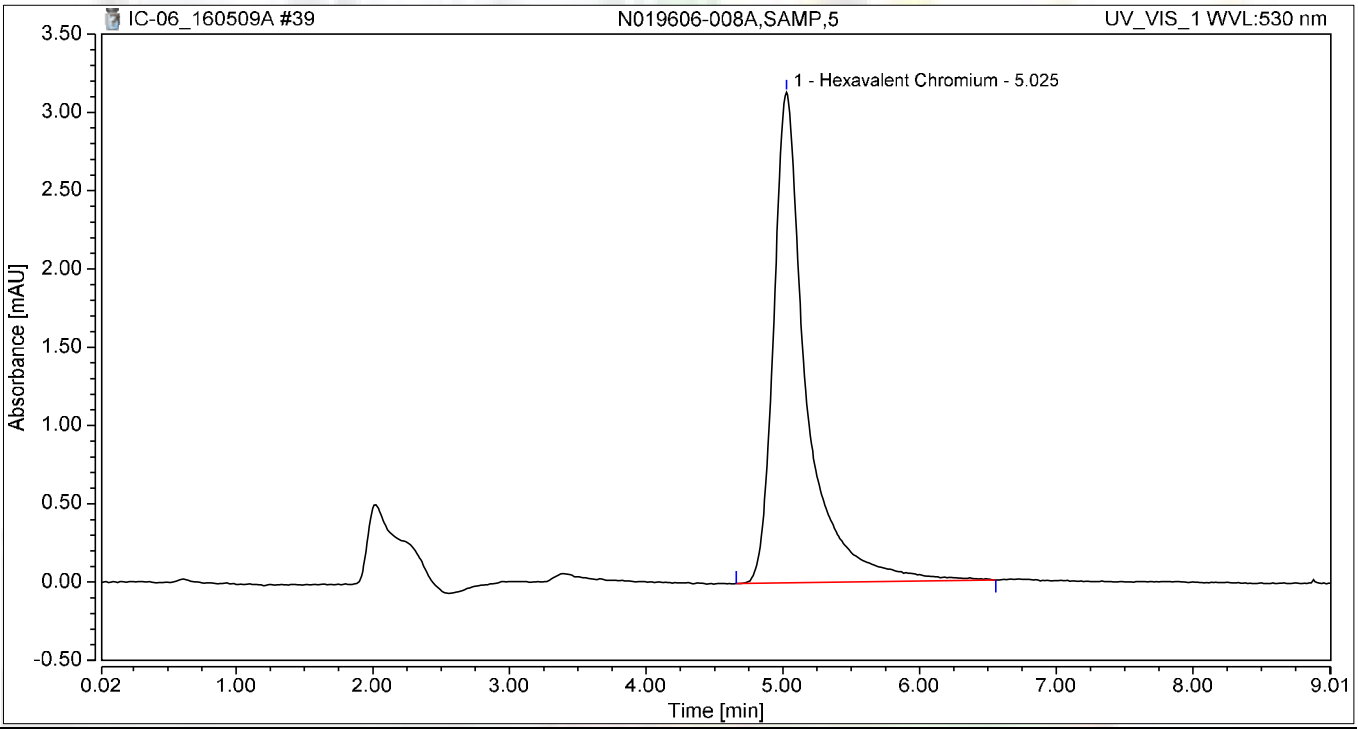
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.007	0.035	100.00	100.00	0.0134
Total:			**0.007**	**0.035**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-008A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

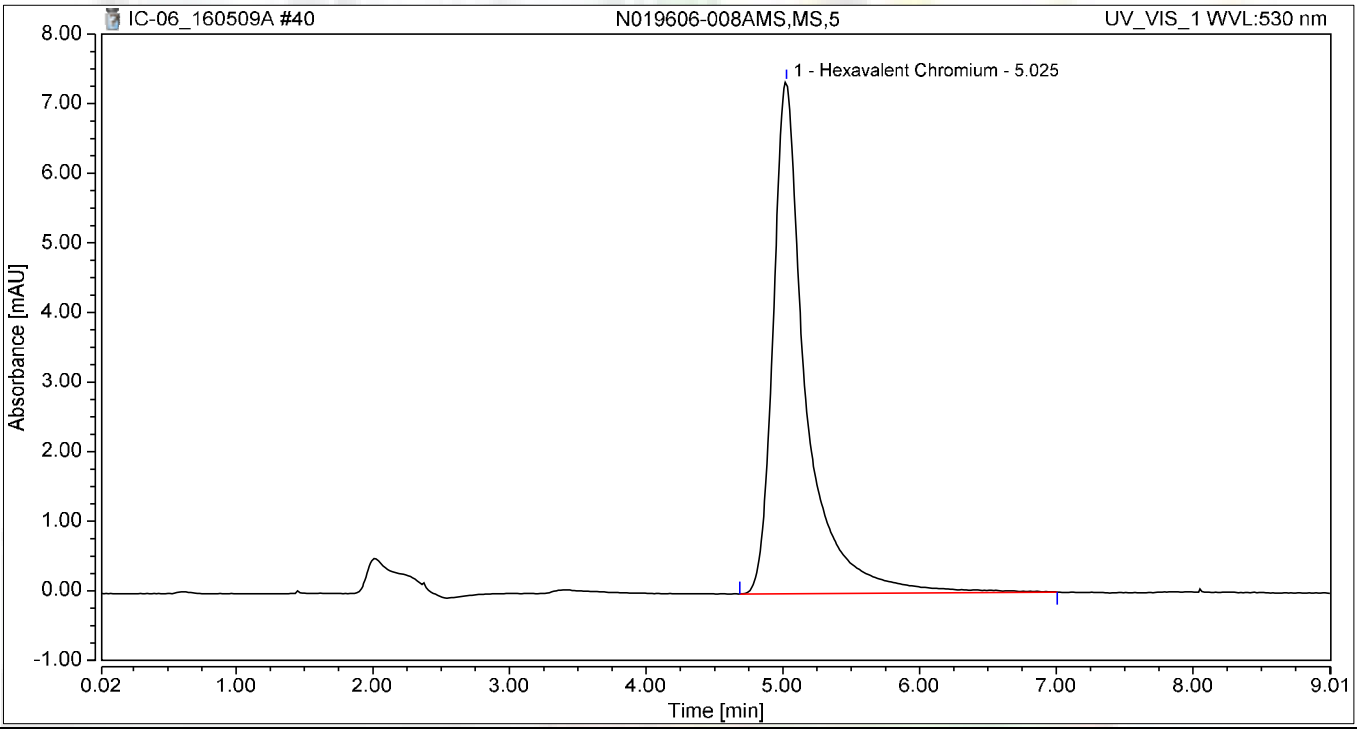
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.025	0.872	3.132	100.00	100.00	3.7145
Total:			**0.872**	**3.132**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-008AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 16:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

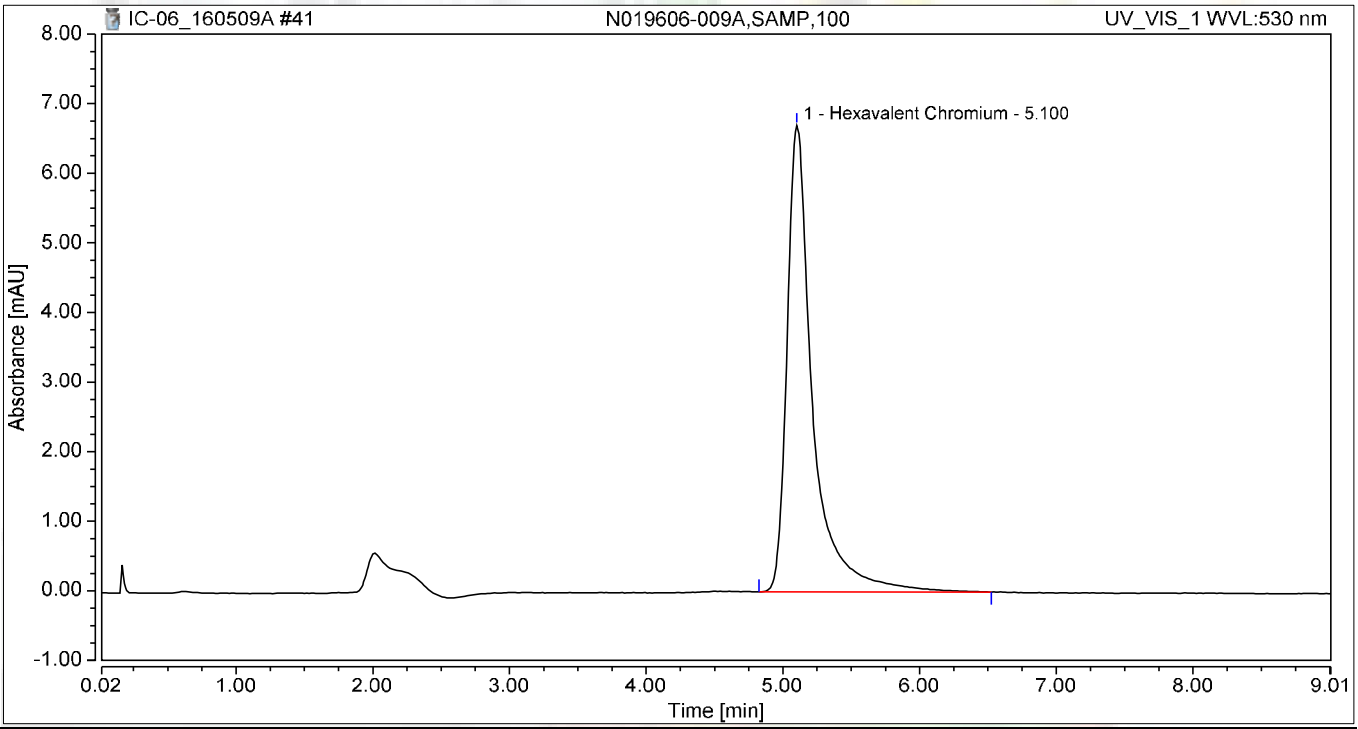
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.025	2.047	7.354	100.00	100.00	8.7464
Total:			**2.047**	**7.354**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-009A,SAMP,100**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

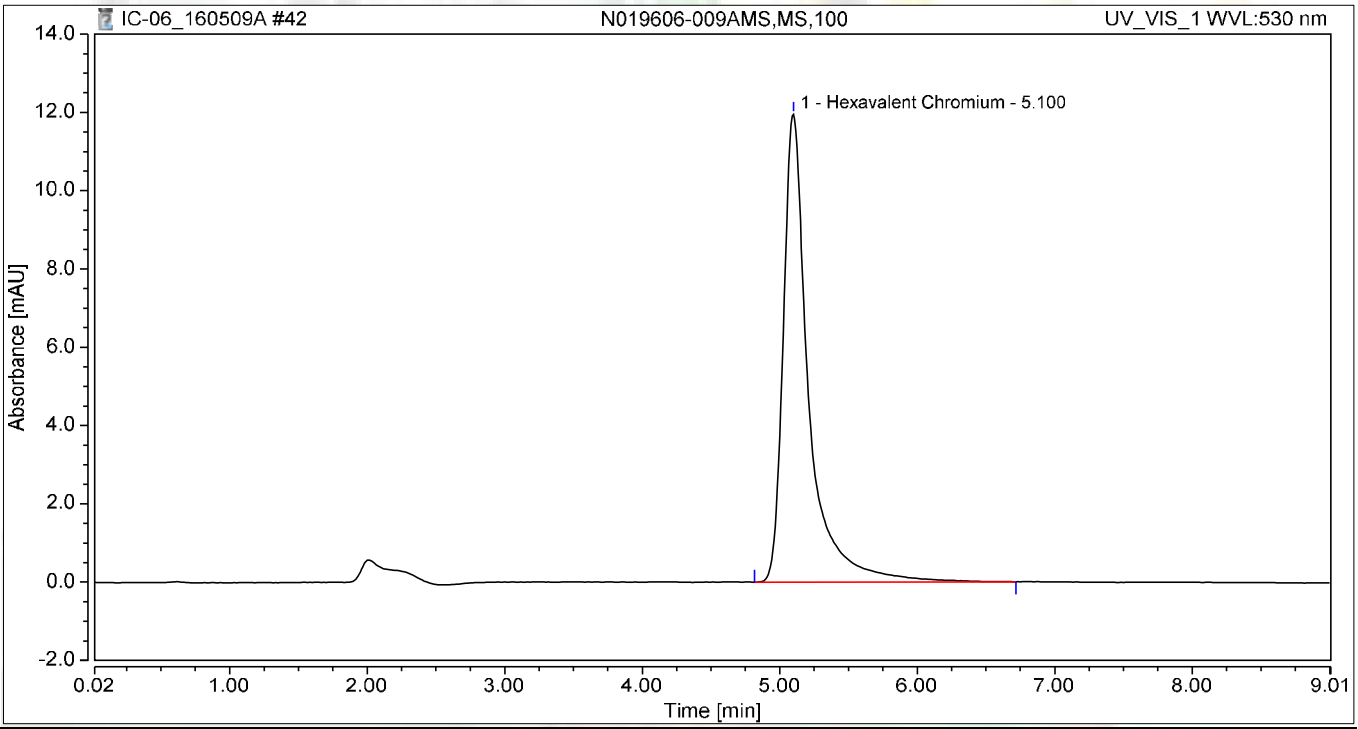
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.450	6.700	100.00	100.00	6.1904
Total:			**1.450**	**6.700**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-009AMS,MS,100**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

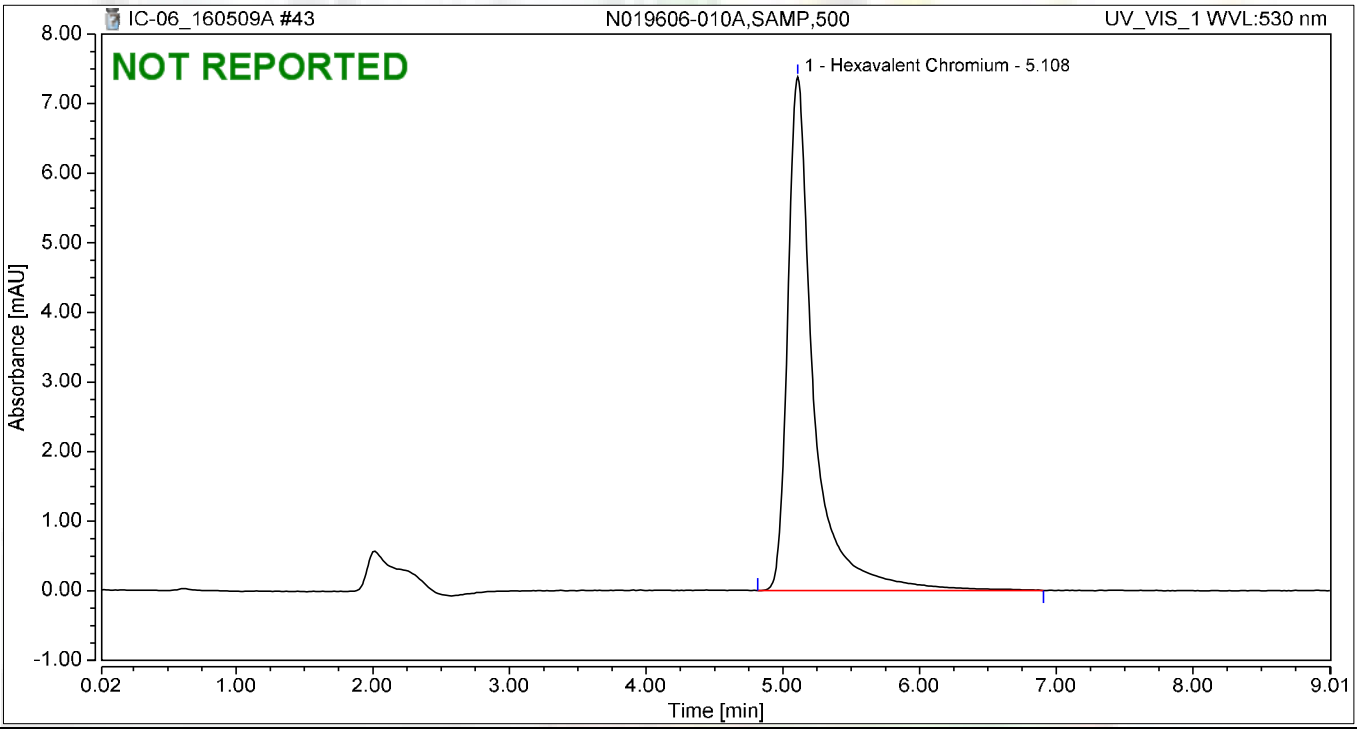
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.578	11.956	100.00	100.00	11.0201
Total:			**2.578**	**11.956**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-010A,SAMP,500**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

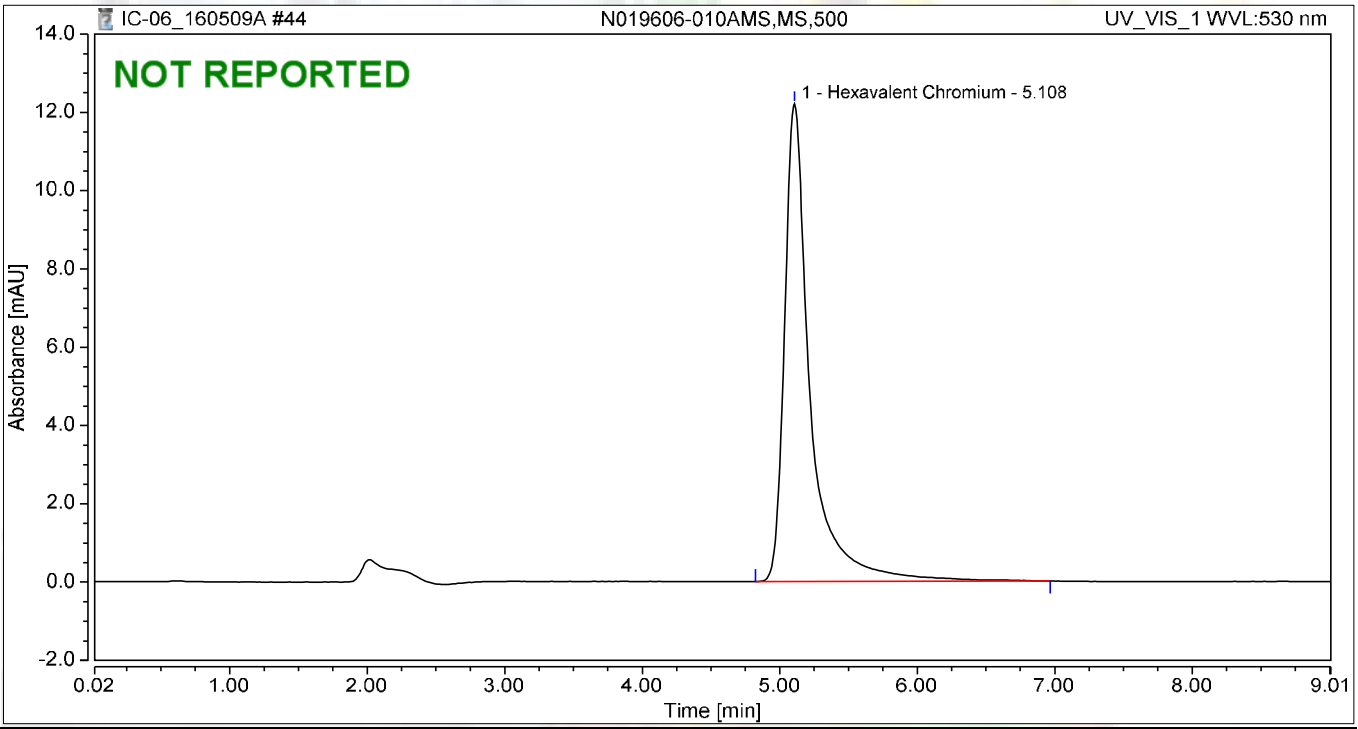
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.622	7.380	100.00	100.00	6.9242
Total:			**1.622**	**7.380**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-010AMS,MS,500**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 17:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

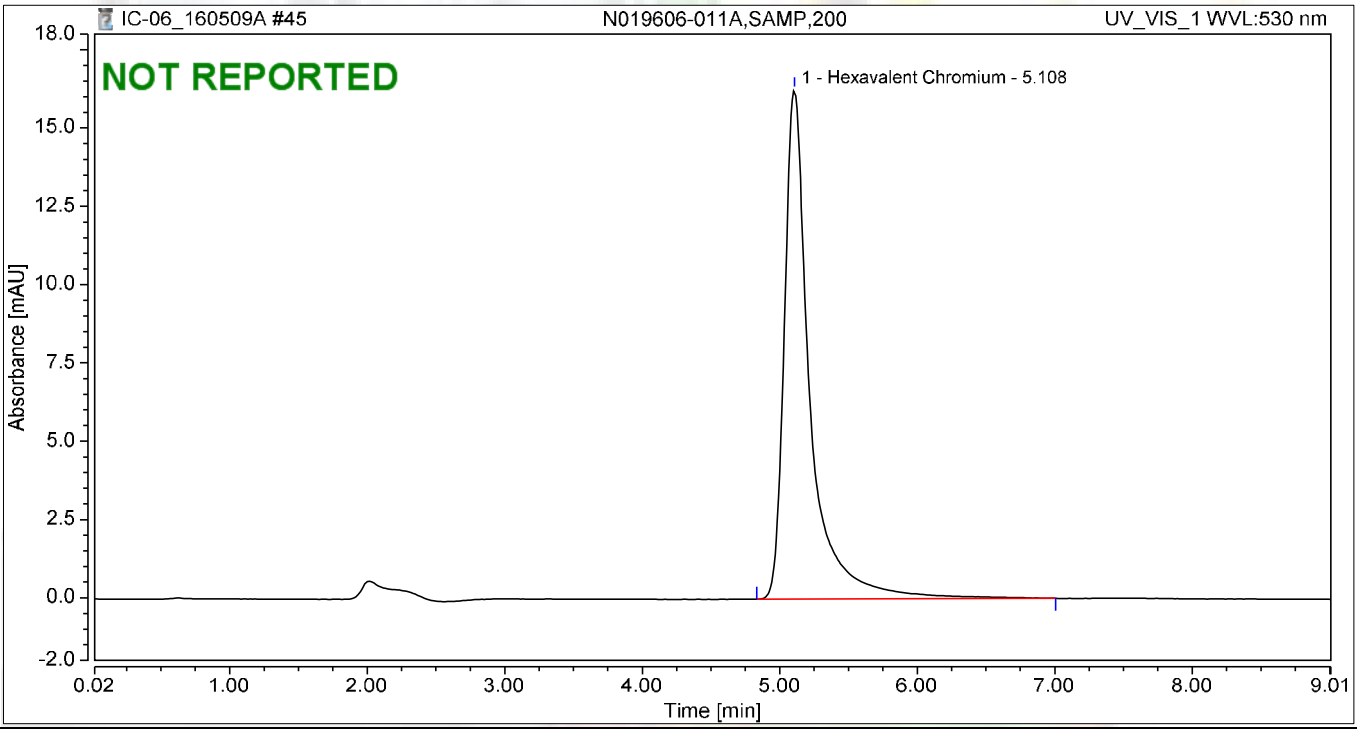
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.648	12.199	100.00	100.00	11.3182
Total:			**2.648**	**12.199**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-011A,SAMP,200**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 17:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

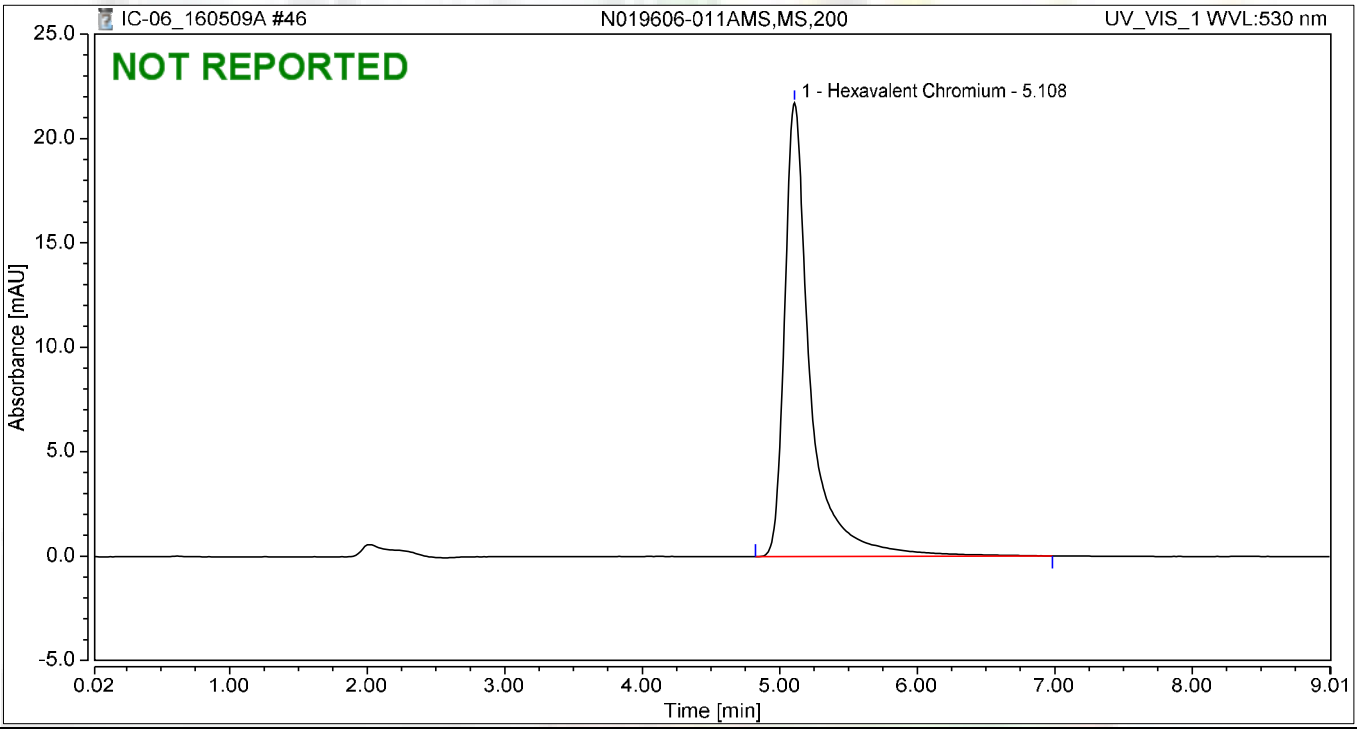
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	3.538	16.268	100.00	100.00	15.1291
Total:			**3.538**	**16.268**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-011AMS,MS,200**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

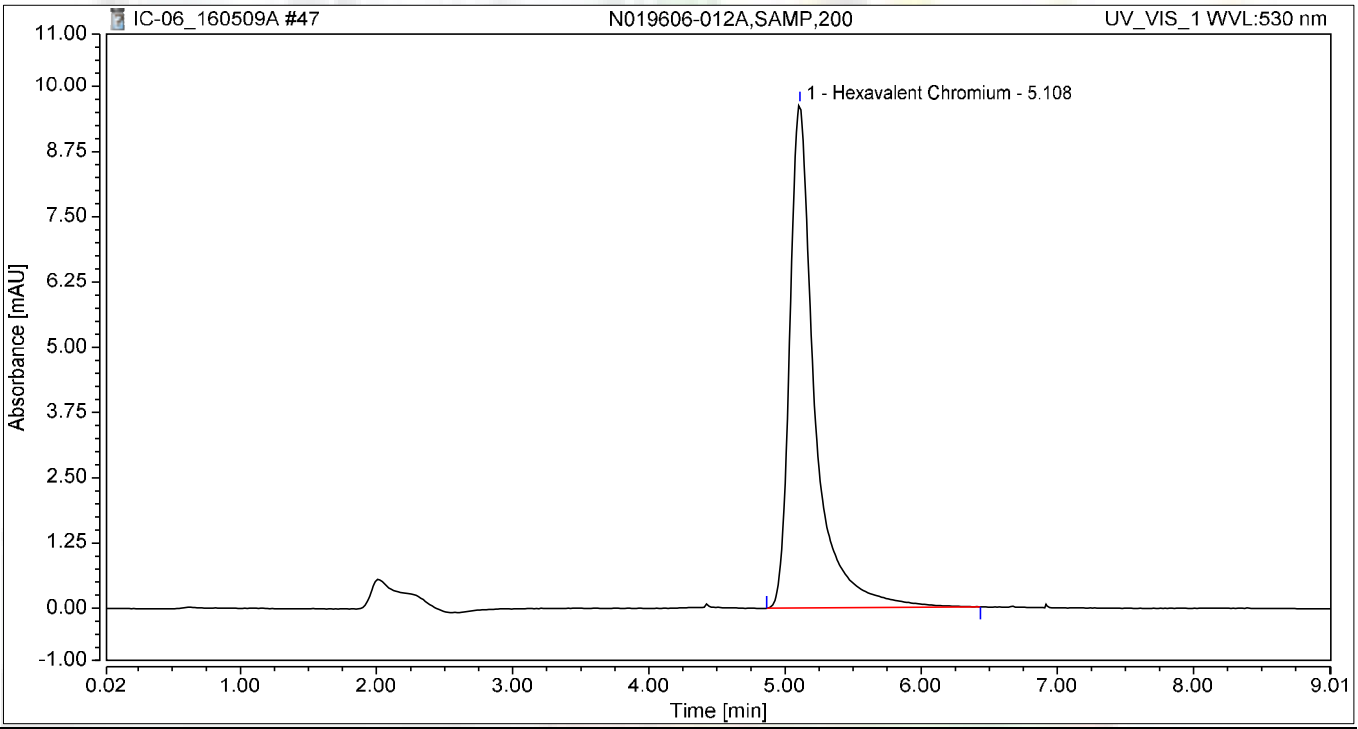
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	4.705	21.737	100.00	100.00	20.1242
Total:			**4.705**	**21.737**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-012A,SAMP,200**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 17:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

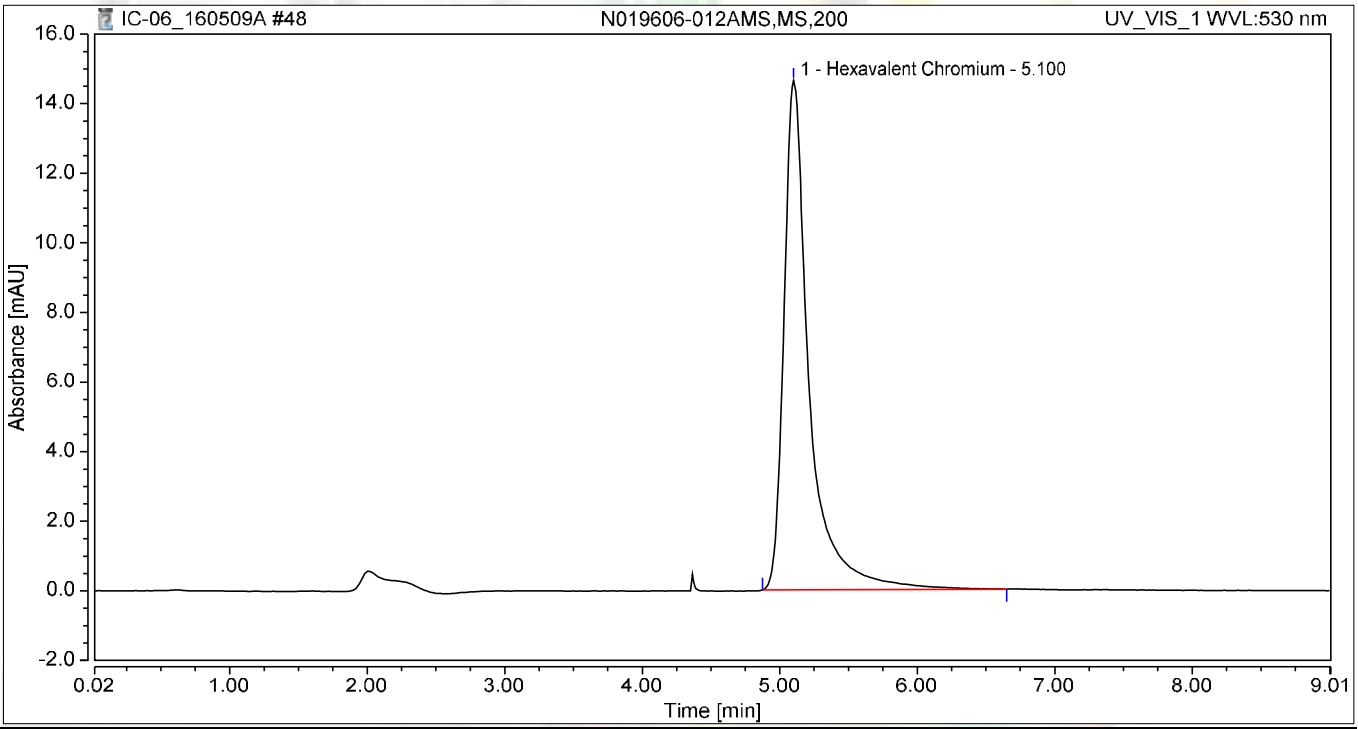
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.064	9.653	100.00	100.00	8.8199
Total:			**2.064**	**9.653**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-012AMS,MS,200**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 17:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

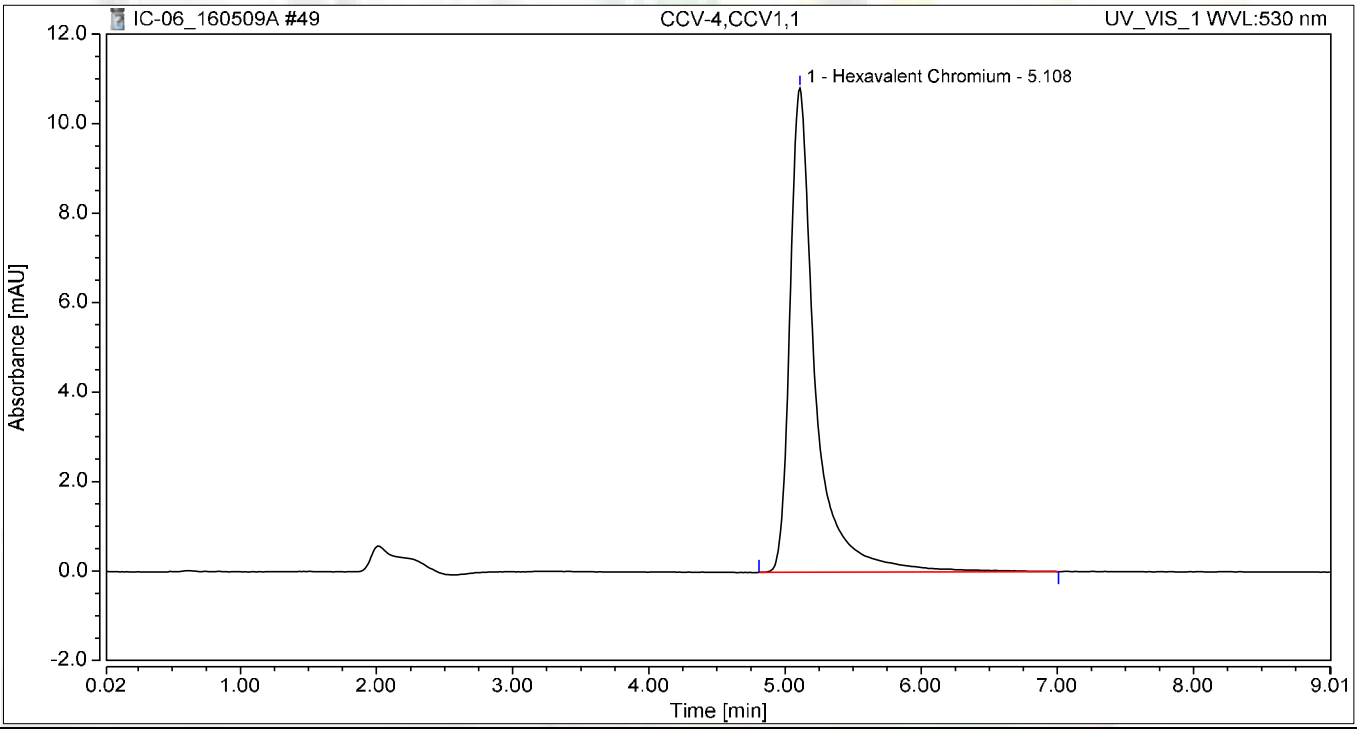
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	3.123	14.638	100.00	100.00	13.3527
Total:			**3.123**	**14.638**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

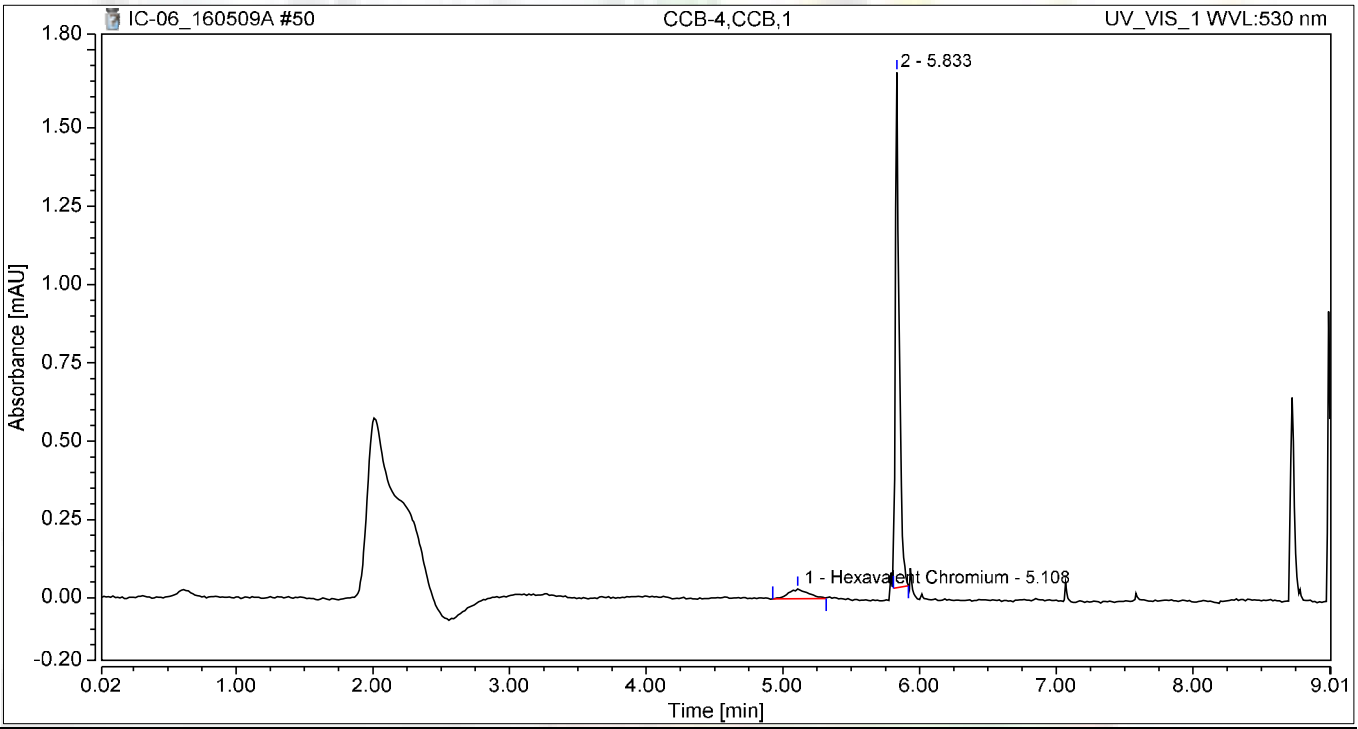
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.348	10.822	100.00	100.00	10.0356
Total:			**2.348**	**10.822**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

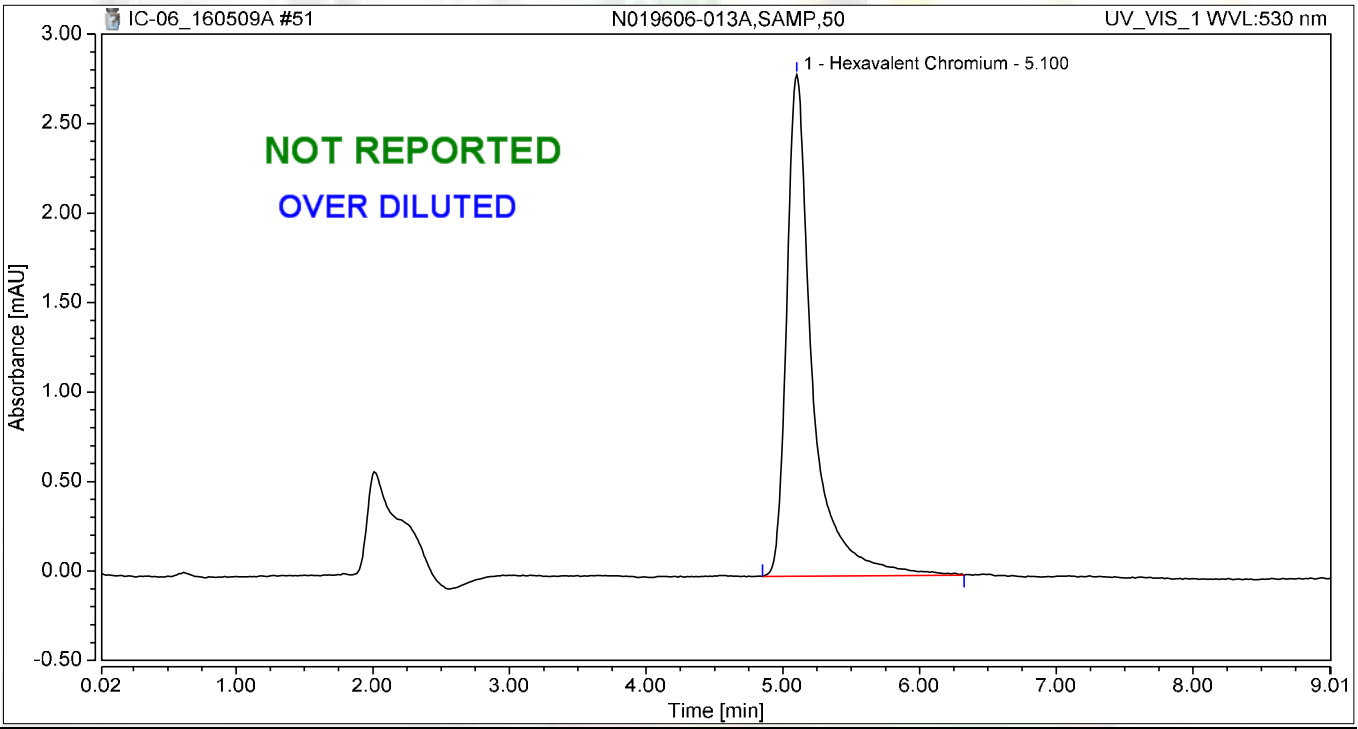
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.005	0.031	8.87	1.88	0.0048
2		5.833	0.055	1.645	91.13	98.12	n.a.
Total:			**0.060**	**1.676**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-013A,SAMP,50**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

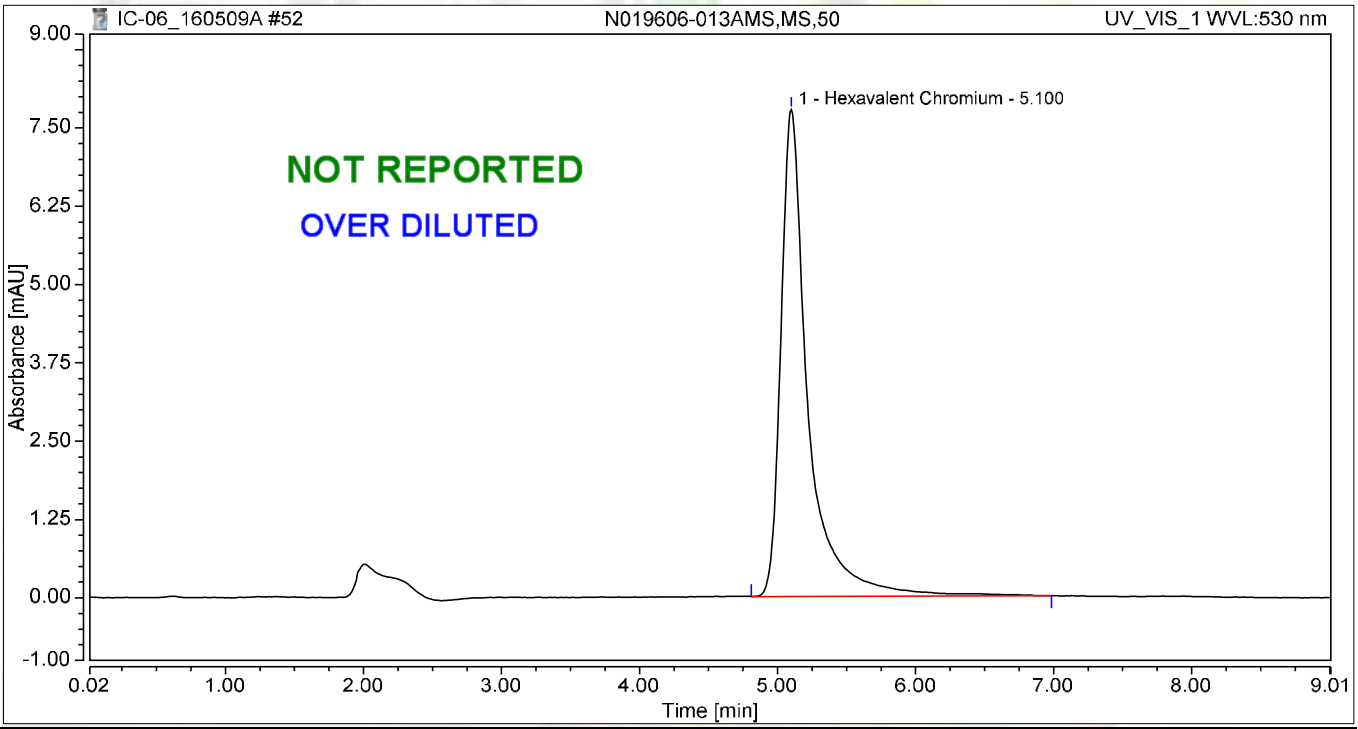
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.612	2.803	100.00	100.00	2.6021
Total:			**0.612**	**2.803**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-013AMS,MS,50**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 18:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

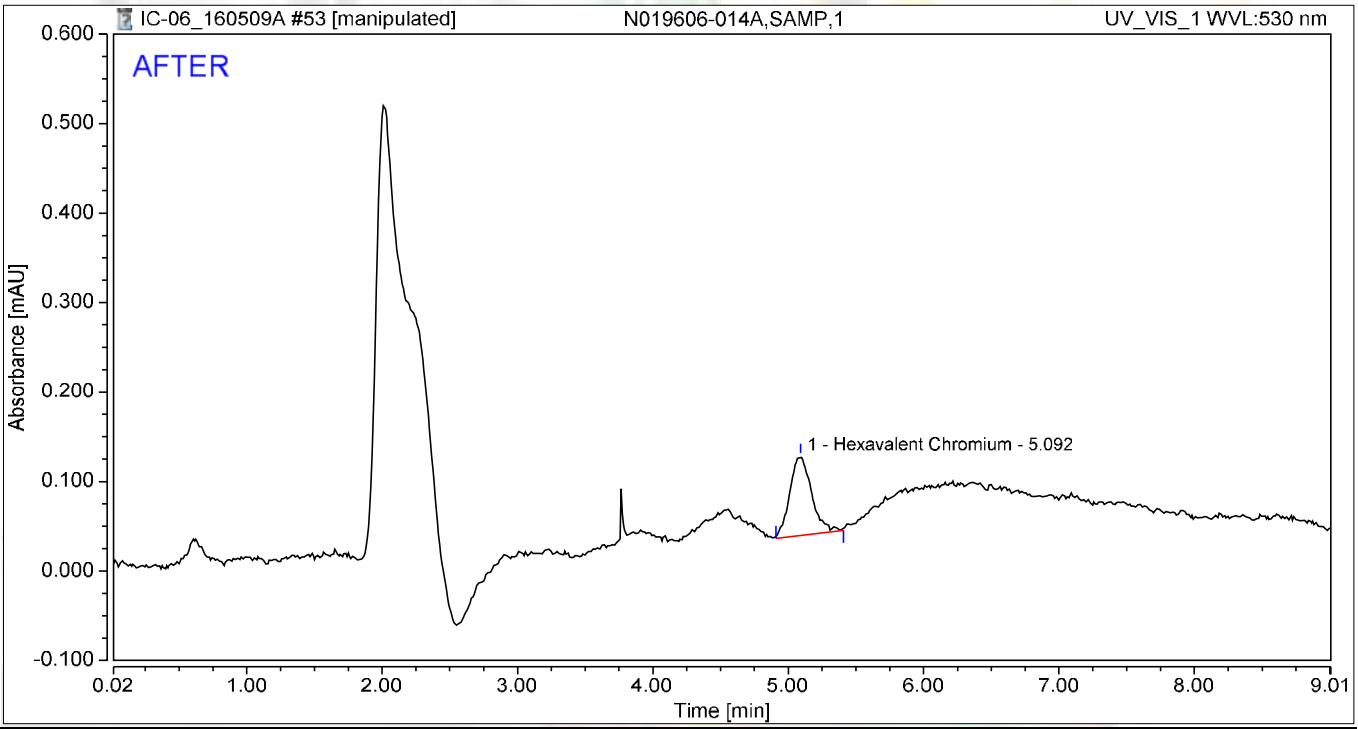
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.773	7.772	100.00	100.00	7.5742
Total:			**1.773**	**7.772**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-014A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 18:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.017	0.089	100.00	100.00	0.0527
Total:			**0.017**	**0.089**	**100.00**	**100.00**	

5/13/2016

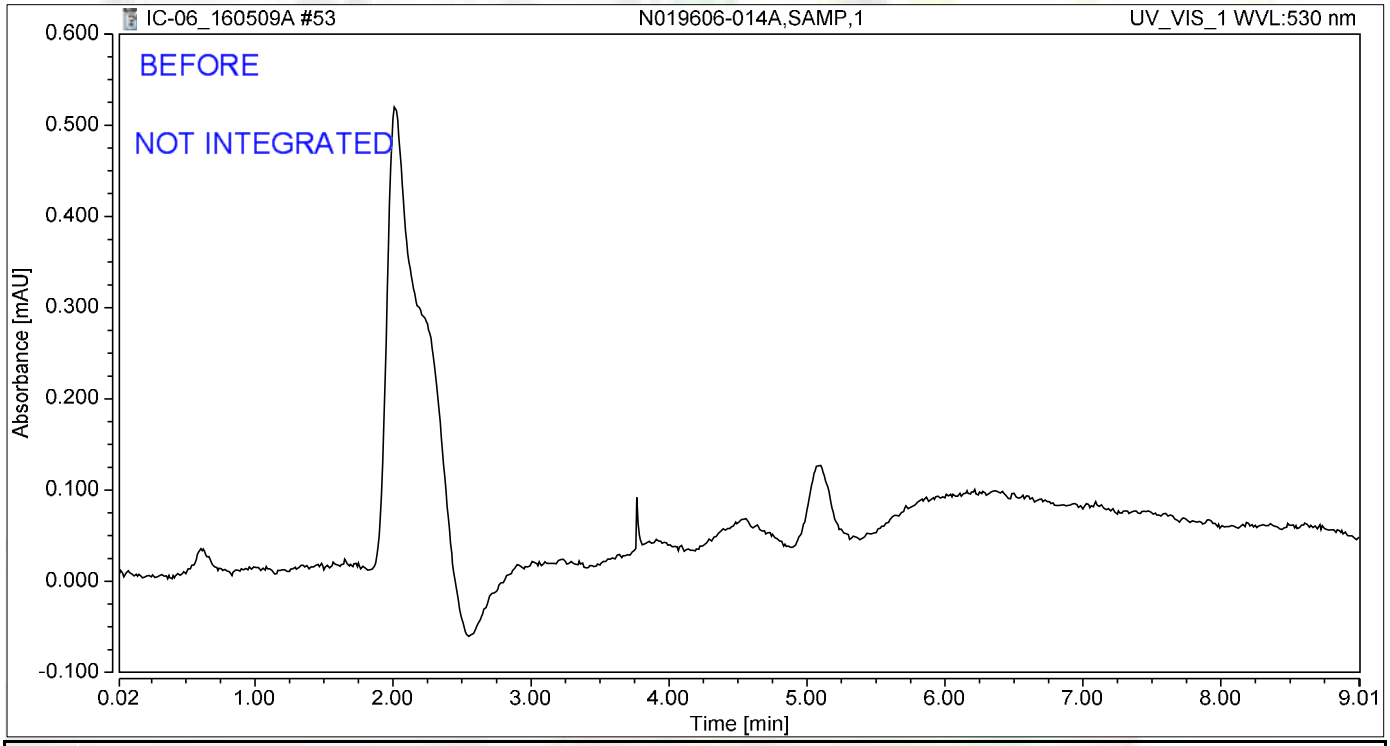
5/17/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019606-014A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 18:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

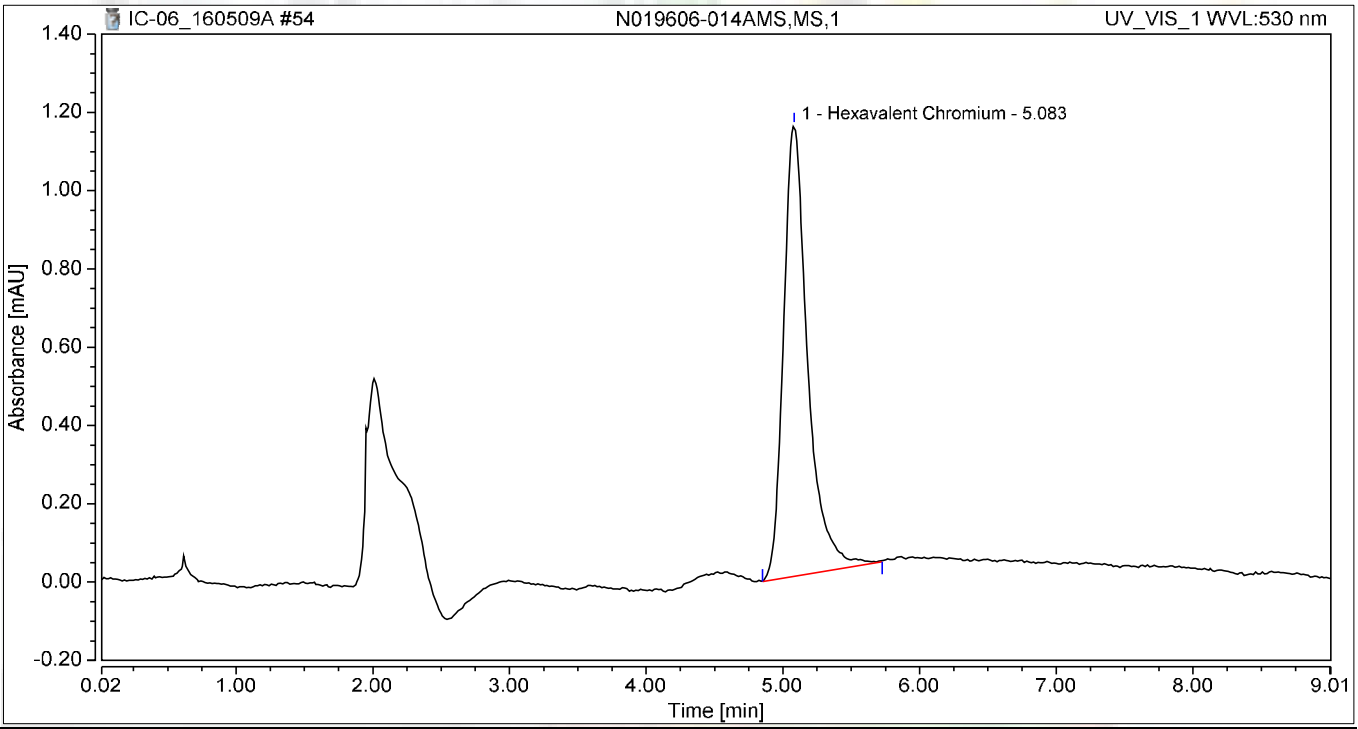
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019606-014AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 18:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

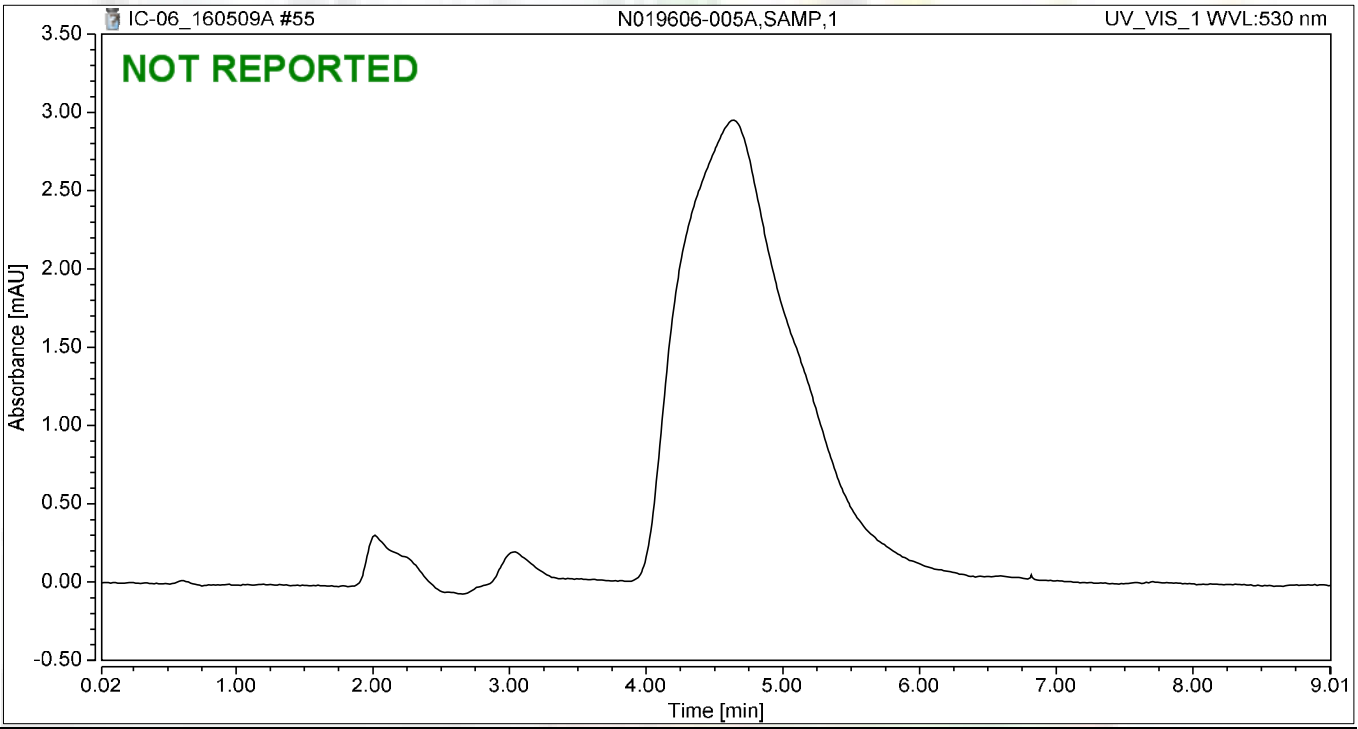
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	0.236	1.152	100.00	100.00	0.9941
Total:			**0.236**	**1.152**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-005A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 18:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

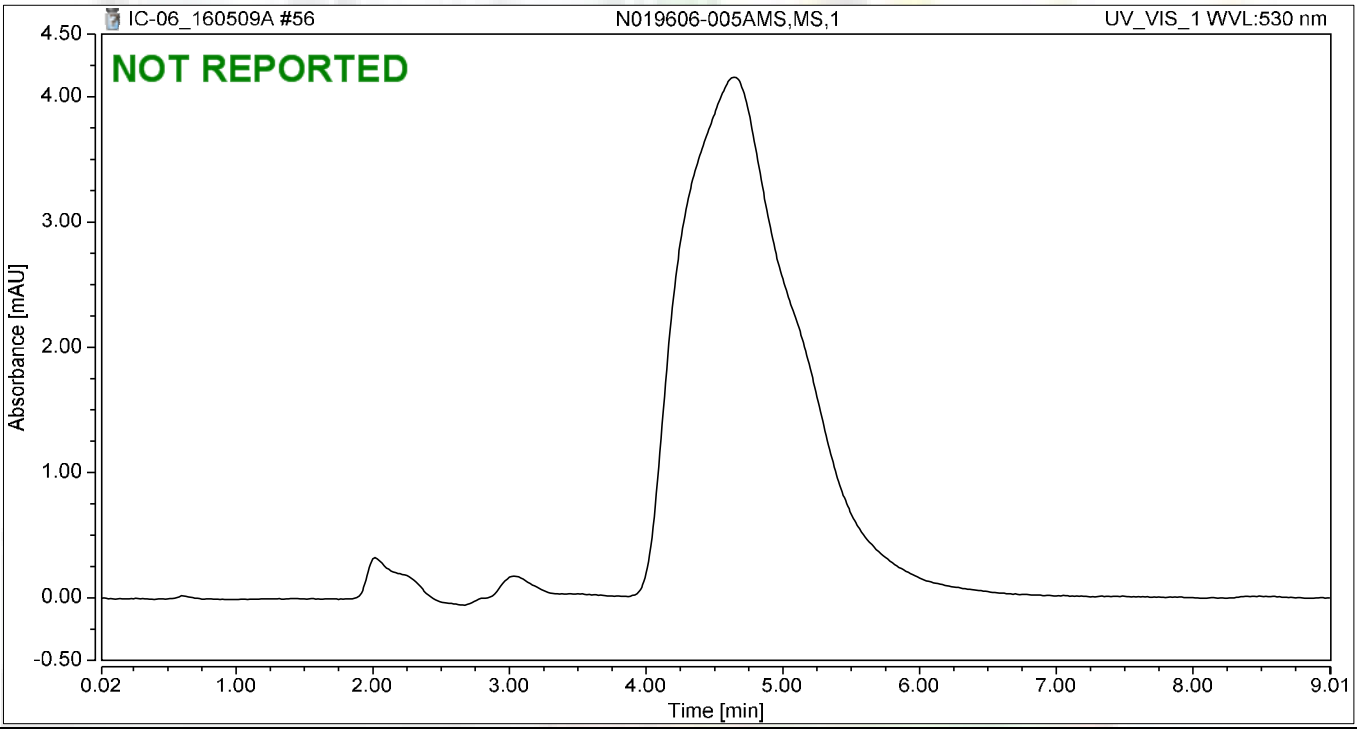
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-005AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 19:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

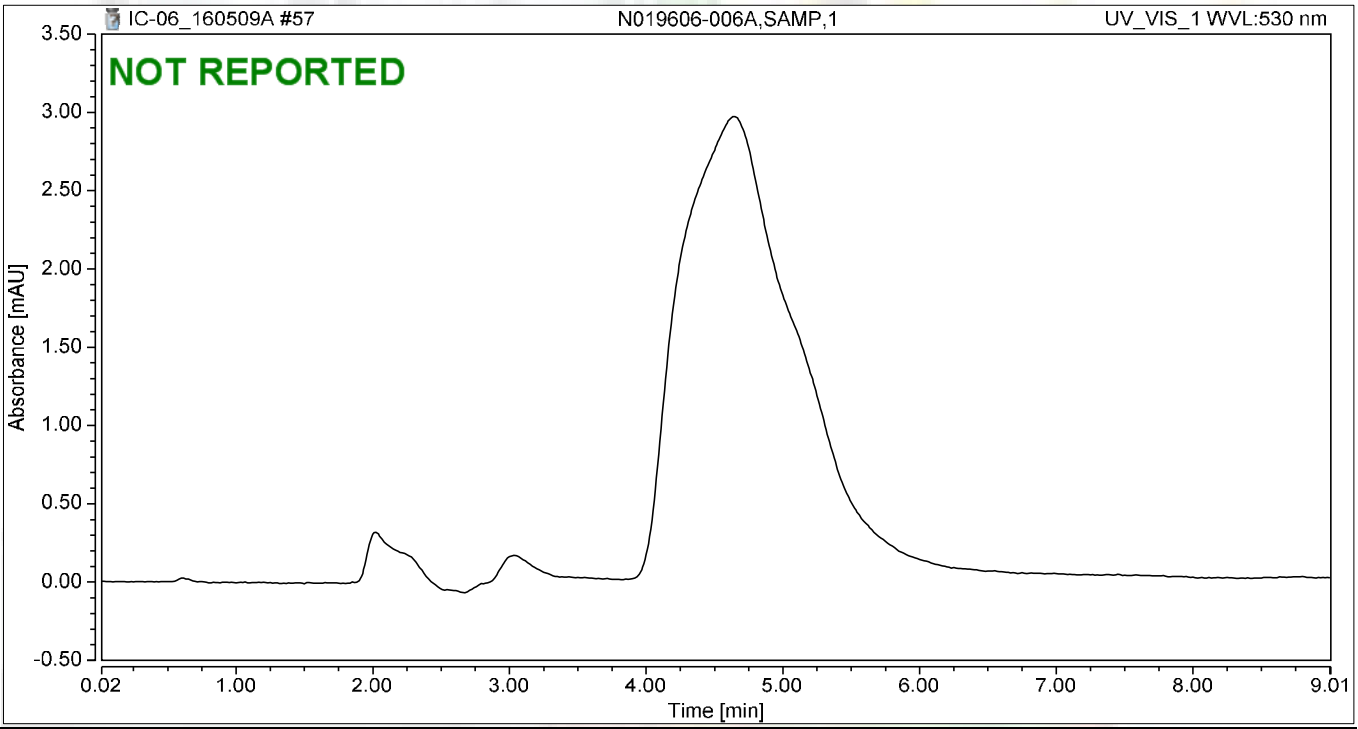
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 19:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

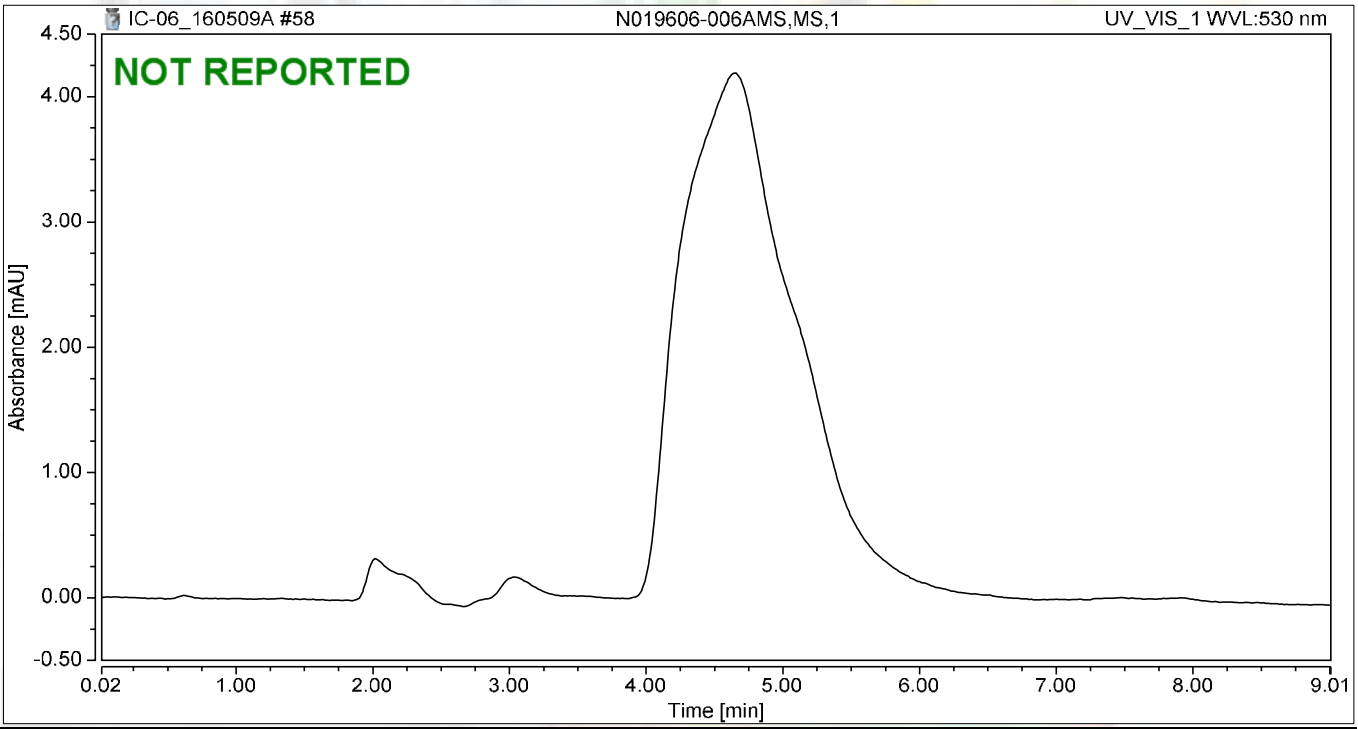
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 19:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

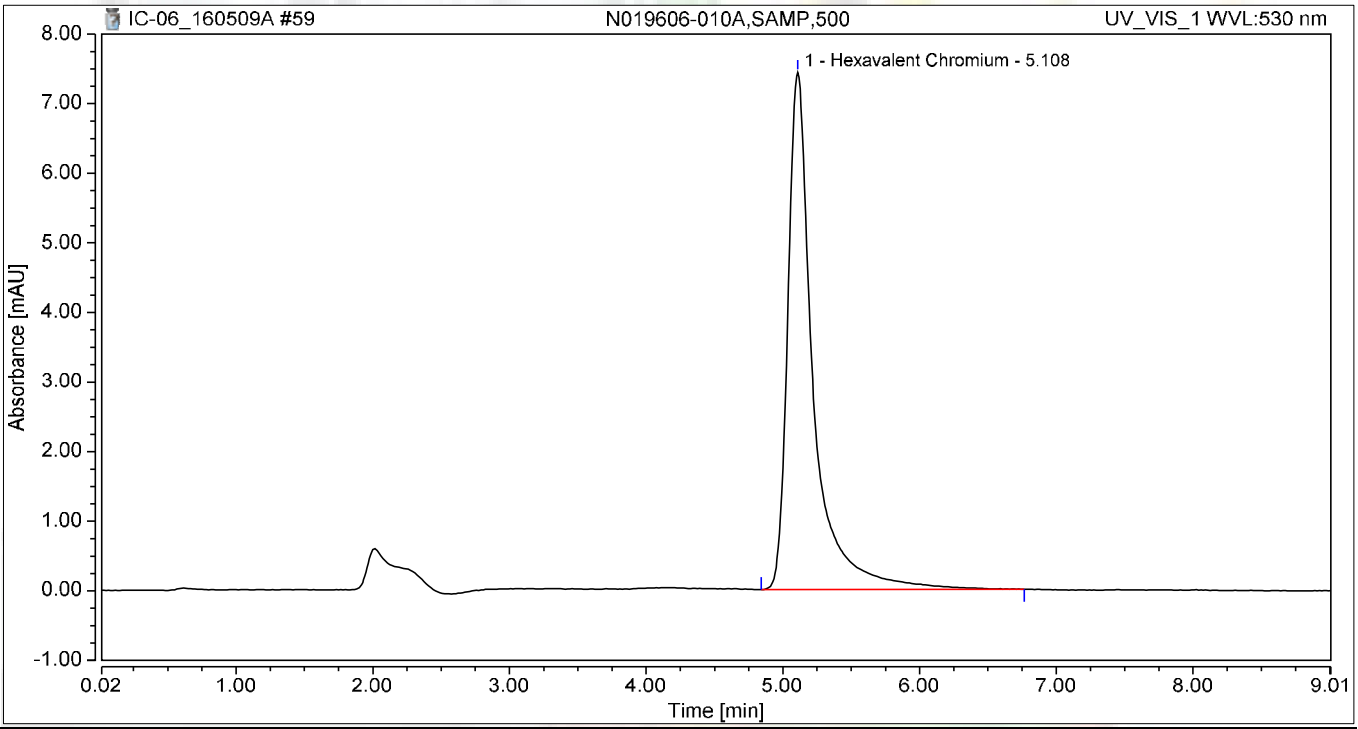
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-010A,SAMP,500**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

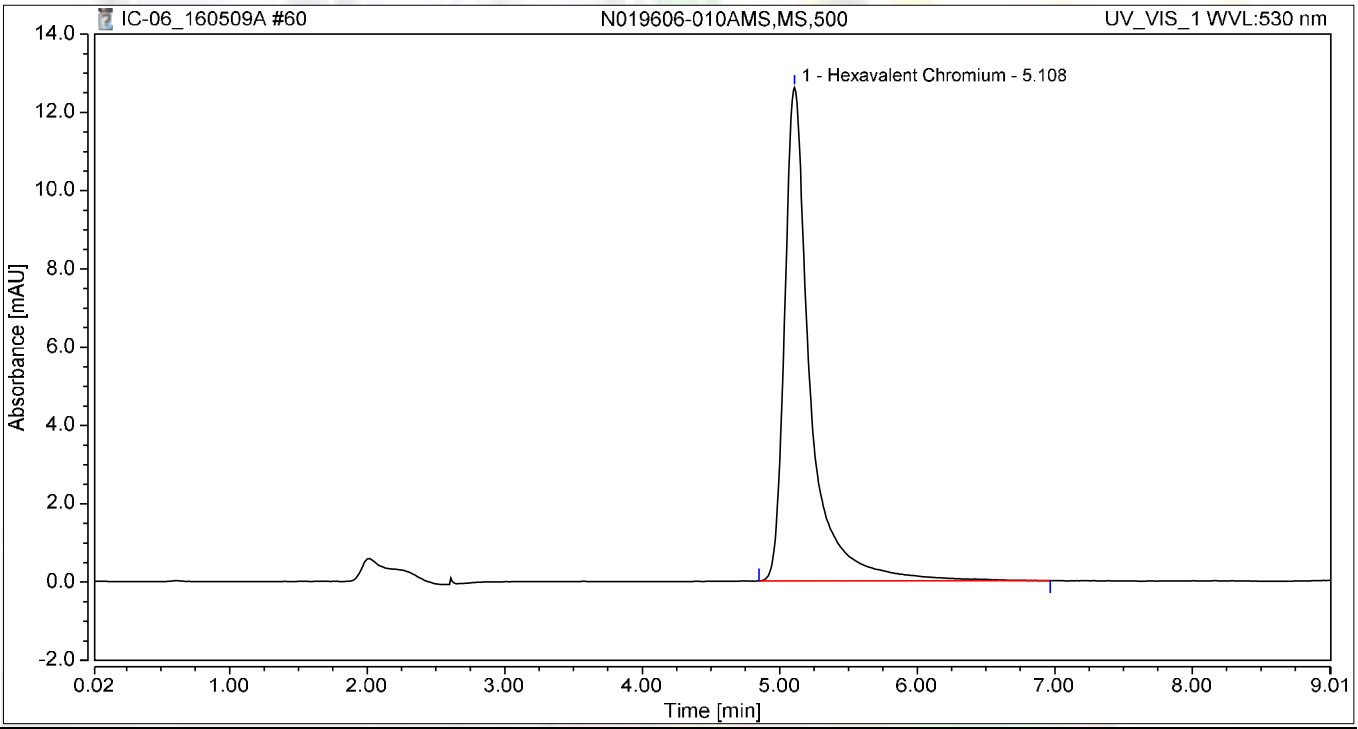
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.607	7.430	100.00	100.00	6.8626
Total:			**1.607**	**7.430**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-010AMS,MS,500**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 19:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

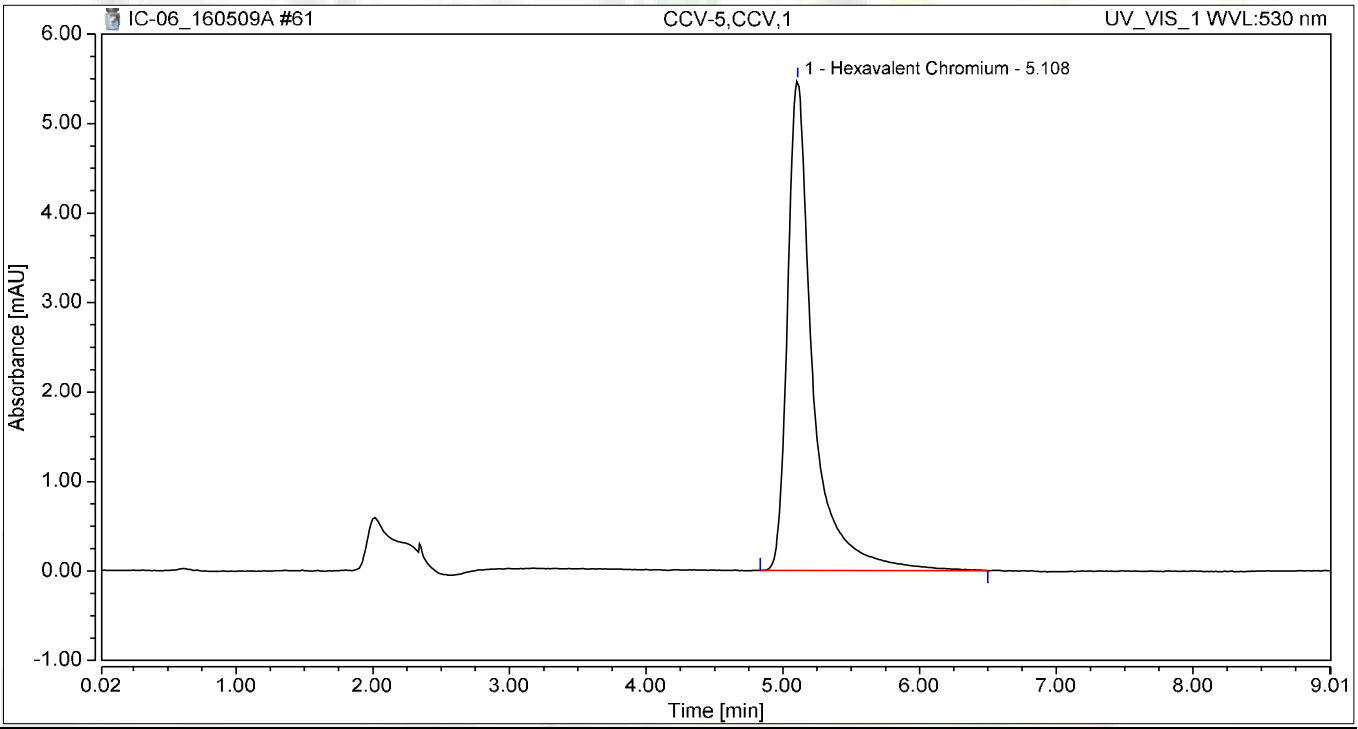
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.731	12.606	100.00	100.00	11.6749
Total:			**2.731**	**12.606**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 19:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

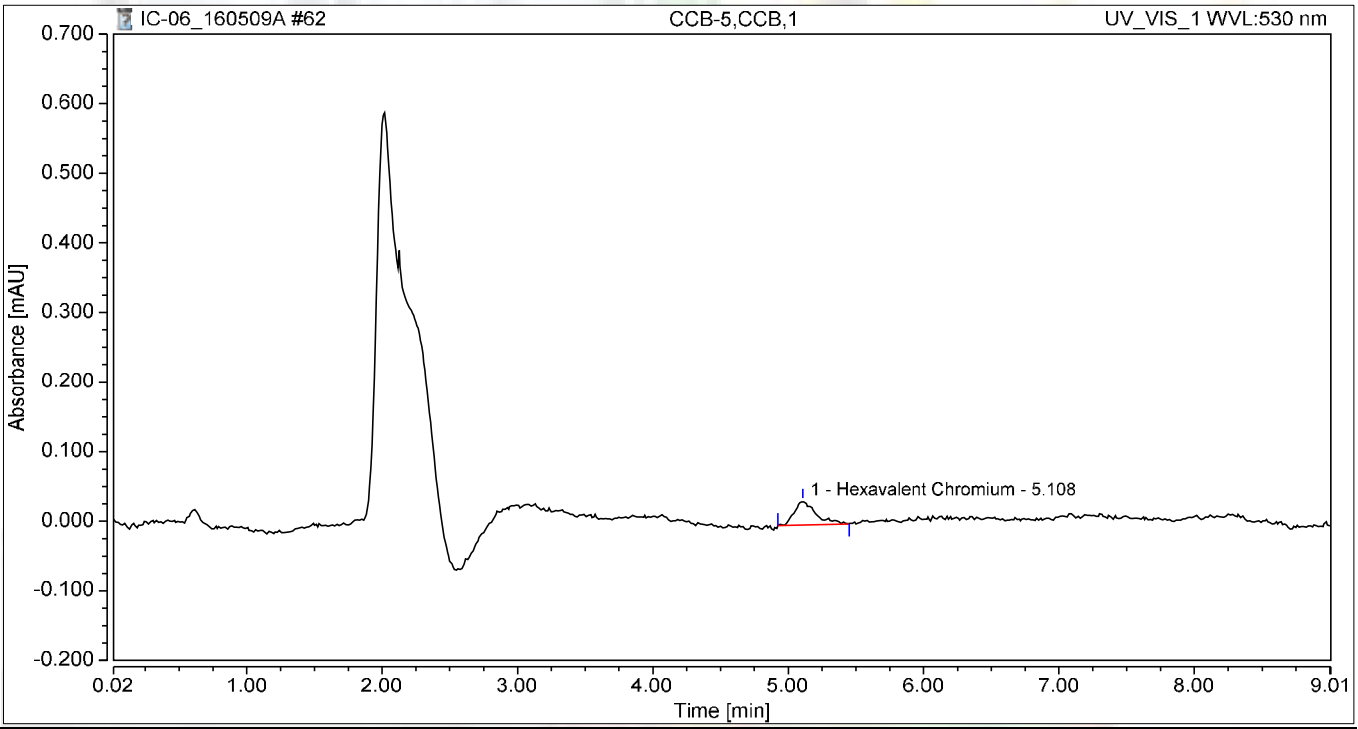
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.180	5.482	100.00	100.00	5.0338
Total:			**1.180**	**5.482**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 20:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

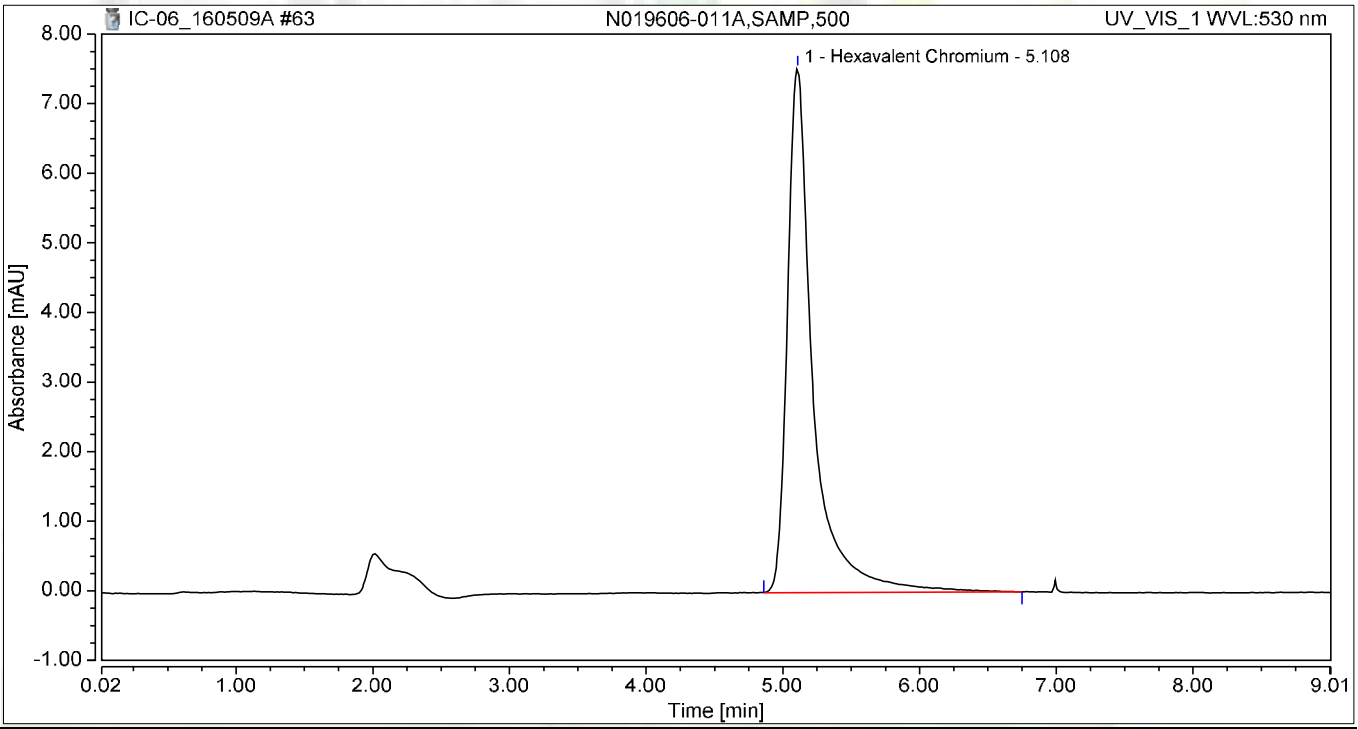
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.006	0.034	100.00	100.00	0.0095
Total:			**0.006**	**0.034**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-011A,SAMP,500**	*Run Time (min):*	**8.99**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 20:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

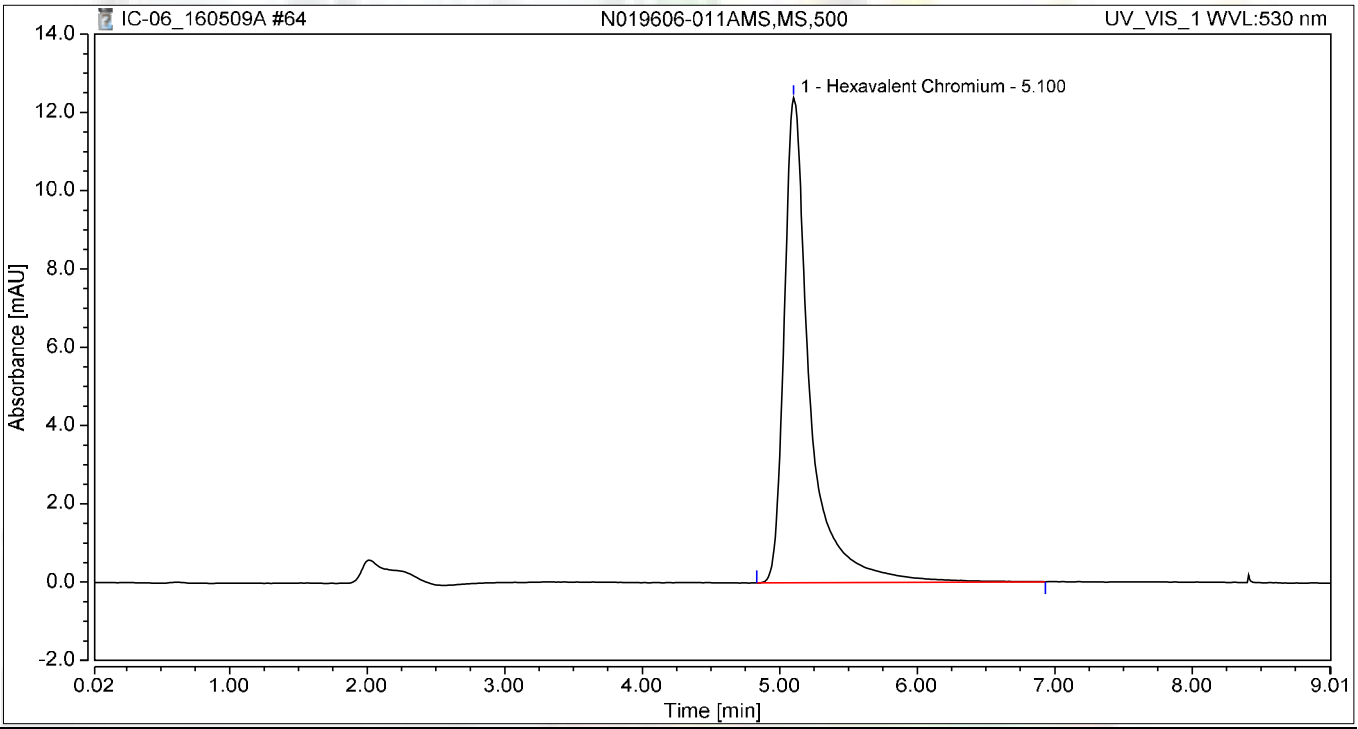
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.640	7.529	100.00	100.00	7.0024
Total:			**1.640**	**7.529**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-011AMS,MS,500**	*Run Time (min):*	**8.99**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 20:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

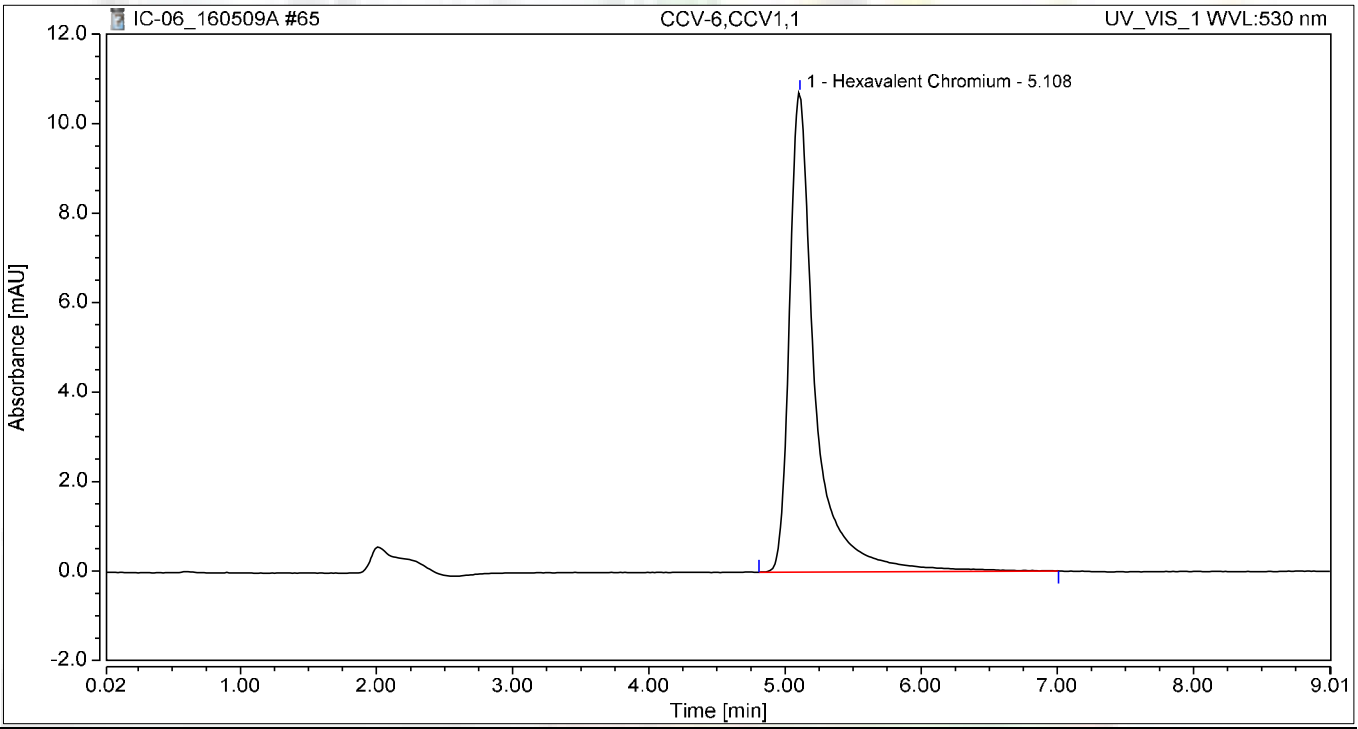
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.702	12.391	100.00	100.00	11.5488
Total:			**2.702**	**12.391**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 20:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

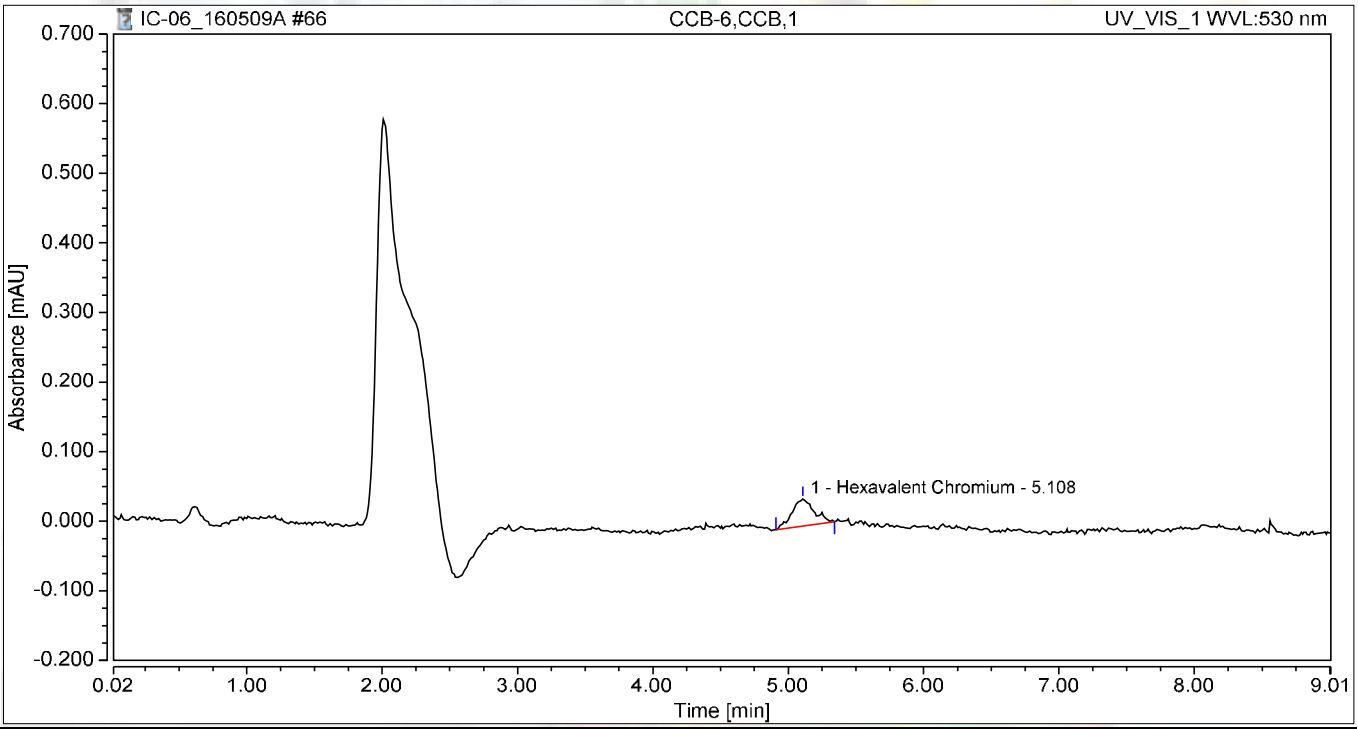
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.344	10.714	100.00	100.00	10.0153
Total:			**2.344**	**10.714**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/16 20:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.007	0.039	100.00	100.00	0.0137
Total:			**0.007**	**0.039**	**100.00**	**100.00**	

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160420B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	ICV	ICV	1	Hexavalent Chromium	04/20/16 3:44 PM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	04/20/16 5:23 PM	Not Reported
10	ICV	ICV	1	Hexavalent Chromium	04/20/16 5:34 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/20/16 5:43 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/20/16 5:53 PM	Reported
13	LCS-R107042	LCS	1	Hexavalent Chromium	04/20/16 6:03 PM	Reported
14	MB-R107042	MBLK	1	Hexavalent Chromium	04/20/16 6:17 PM	Reported
15	N019464-001A	SAMP	1	Hexavalent Chromium	04/20/16 6:28 PM	Reported
16	N019464-001ADUP	DUP	1	Hexavalent Chromium	04/20/16 6:37 PM	Reported
17	N019464-001AMS	MS	1	Hexavalent Chromium	04/20/16 6:47 PM	Reported
18	N019464-001AMSD	MSD	1	Hexavalent Chromium	04/20/16 6:56 PM	Reported
19	N019464-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:06 PM	Reported
20	N019433-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:15 PM	Reported
21	N019447-008A	SAMP	1	Hexavalent Chromium	04/20/16 7:25 PM	Not Reported
22	N019447-010A	SAMP	1	Hexavalent Chromium	04/20/16 7:34 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/20/16 7:44 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/20/16 7:53 PM	Reported
25	N019449-001A	SAMP	1	Hexavalent Chromium	04/20/16 8:04 PM	Reported
26	N019449-002A	SAMP	10	Hexavalent Chromium	04/20/16 8:15 PM	Not Reported
27	N019449-003A	SAMP	1	Hexavalent Chromium	04/20/16 8:24 PM	Reported
28	N019449-004A	SAMP	1	Hexavalent Chromium	04/20/16 8:34 PM	Reported
29	N019449-005A	SAMP	1	Hexavalent Chromium	04/20/16 8:43 PM	Reported
30	N019449-006A	SAMP	1	Hexavalent Chromium	04/20/16 8:53 PM	Reported
31	N019449-007A	SAMP	1	Hexavalent Chromium	04/20/16 9:02 PM	Reported
32	N019449-008A	SAMP	1	Hexavalent Chromium	04/20/16 9:12 PM	Reported
33	N019449-009A	SAMP	1	Hexavalent Chromium	04/20/16 9:21 PM	Reported
34	N019449-010A	SAMP	1	Hexavalent Chromium	04/20/16 9:31 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/20/16 9:40 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/20/16 9:49 PM	Reported
37	N019347-002A	SAMP	1	Hexavalent Chromium	04/20/16 9:59 PM	Not Reported
38	N019347-002AMS	MS	1	Hexavalent Chromium	04/20/16 10:08 PM	Not Reported
39	MB-R107053	MBLK	1	Hexavalent Chromium	04/20/16 10:18 PM	Reported
40	LCS-R107053	LCS	1	Hexavalent Chromium	04/20/16 10:27 PM	Reported
41	N019448-001A	SAMP	10	Hexavalent Chromium	04/20/16 10:37 PM	Reported
42	N019448-001ADUP	DUP	10	Hexavalent Chromium	04/20/16 10:46 PM	Reported
43	N019448-001AMS	MS	10	Hexavalent Chromium	04/20/16 10:56 PM	Reported
44	N019448-001AMSD	MSD	10	Hexavalent Chromium	04/20/16 11:05 PM	Reported
45	N019448-002A	SAMP	1	Hexavalent Chromium	04/20/16 11:15 PM	Not Reported
46	N019448-003A	SAMP	1	Hexavalent Chromium	04/20/16 11:24 PM	Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/20/16 11:34 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/20/16 11:43 PM	Reported
49	N019448-004A	SAMP	1	Hexavalent Chromium	04/20/16 11:53 PM	Reported

INJECTION LOG: 160420B

Instrument ID: IC-07

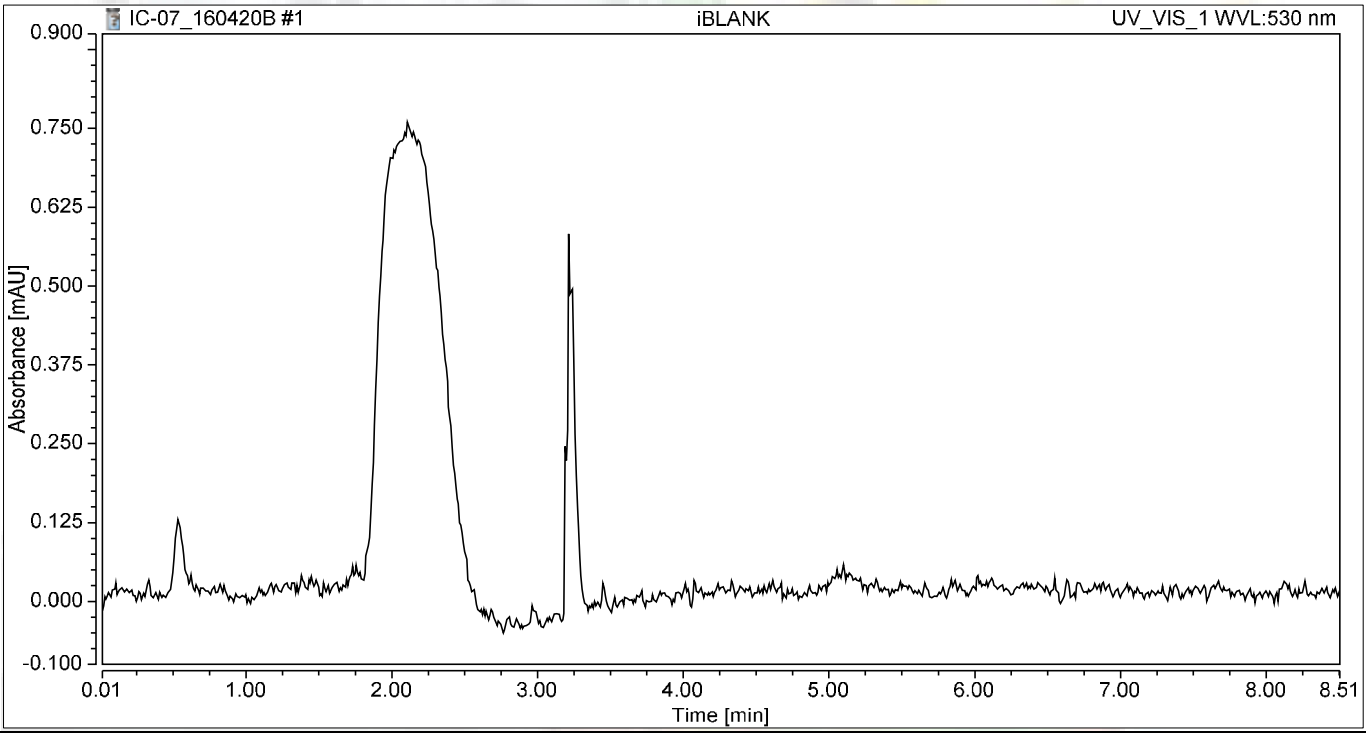
Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019448-005A	SAMP	1	Hexavalent Chromium	04/21/16 12:02 AM	Reported
51	N019448-006A	SAMP	1	Hexavalent Chromium	04/21/16 12:11 AM	Reported
52	N019448-007A	SAMP	1	Hexavalent Chromium	04/21/16 12:21 AM	Reported
53	N019458-001A	SAMP	1	Hexavalent Chromium	04/21/16 12:30 AM	Reported
54	N019458-002A	SAMP	1	Hexavalent Chromium	04/21/16 12:40 AM	Reported
55	N019458-003A	SAMP	1	Hexavalent Chromium	04/21/16 12:49 AM	Reported
56	N019458-004A	SAMP	1	Hexavalent Chromium	04/21/16 12:59 AM	Reported
57	N019458-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:08 AM	Reported
58	N019458-006A	SAMP	1	Hexavalent Chromium	04/21/16 1:18 AM	Not Reported
59	CCV-4	CCV	1	Hexavalent Chromium	04/21/16 1:27 AM	Reported
60	CCB-4	CCB	1	Hexavalent Chromium	04/21/16 1:37 AM	Reported
61	N019458-007A	SAMP	1	Hexavalent Chromium	04/21/16 1:46 AM	Reported
62	N019368-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:55 AM	Not Reported
63	N019368-005AMS	MS	1	Hexavalent Chromium	04/21/16 2:05 AM	Not Reported
64	N019368-006A	SAMP	1	Hexavalent Chromium	04/21/16 2:14 AM	Not Reported
65	N019368-006AMS	MS	1	Hexavalent Chromium	04/21/16 2:24 AM	Not Reported
66	N019368-008A	SAMP	1	Hexavalent Chromium	04/21/16 2:33 AM	Not Reported
67	N019368-008AMS	MS	1	Hexavalent Chromium	04/21/16 2:43 AM	Not Reported
68	N019368-013A	SAMP	1	Hexavalent Chromium	04/21/16 2:52 AM	Not Reported
69	N019368-013AMS	MS	1	Hexavalent Chromium	04/21/16 3:02 AM	Not Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	04/21/16 3:11 AM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	04/21/16 3:21 AM	Reported

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

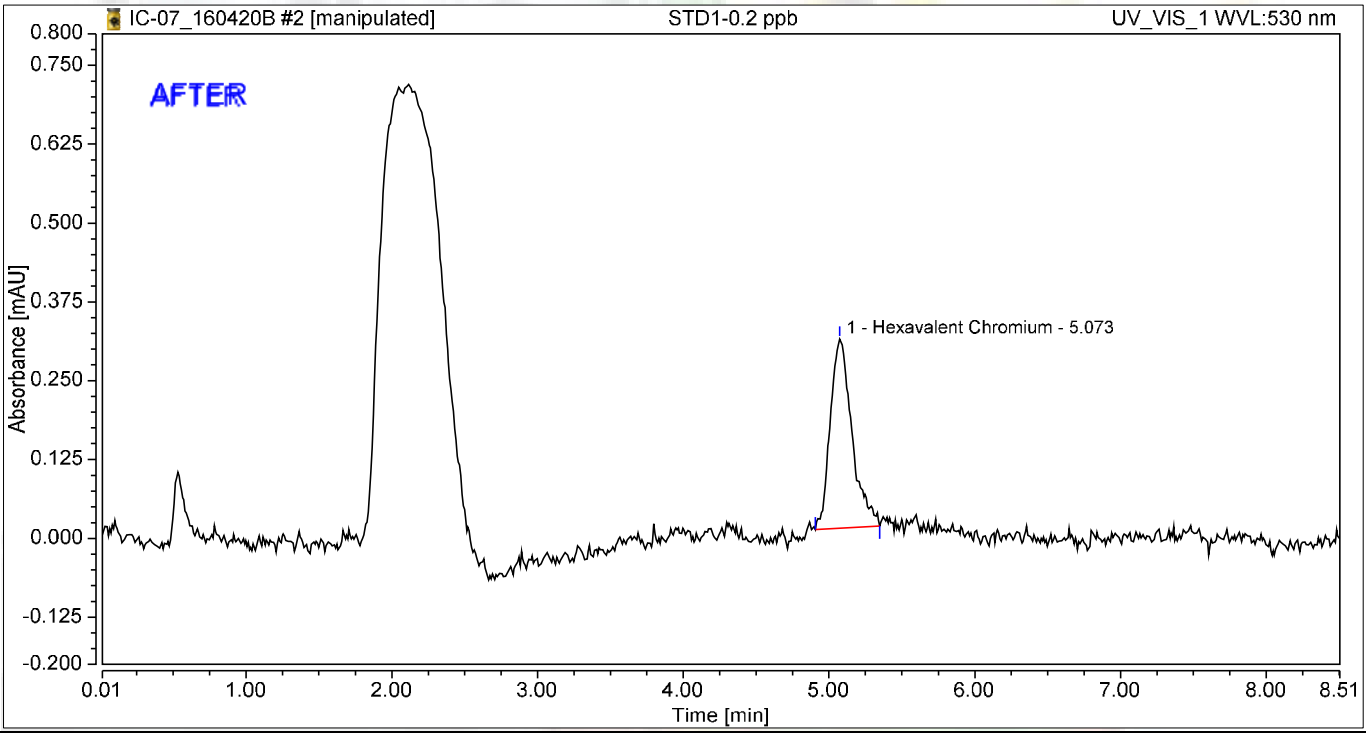
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.052	0.300	100.00	100.00	0.2206
Total:			**0.052**	**0.300**	**100.00**	**100.00**	

4/25/2016

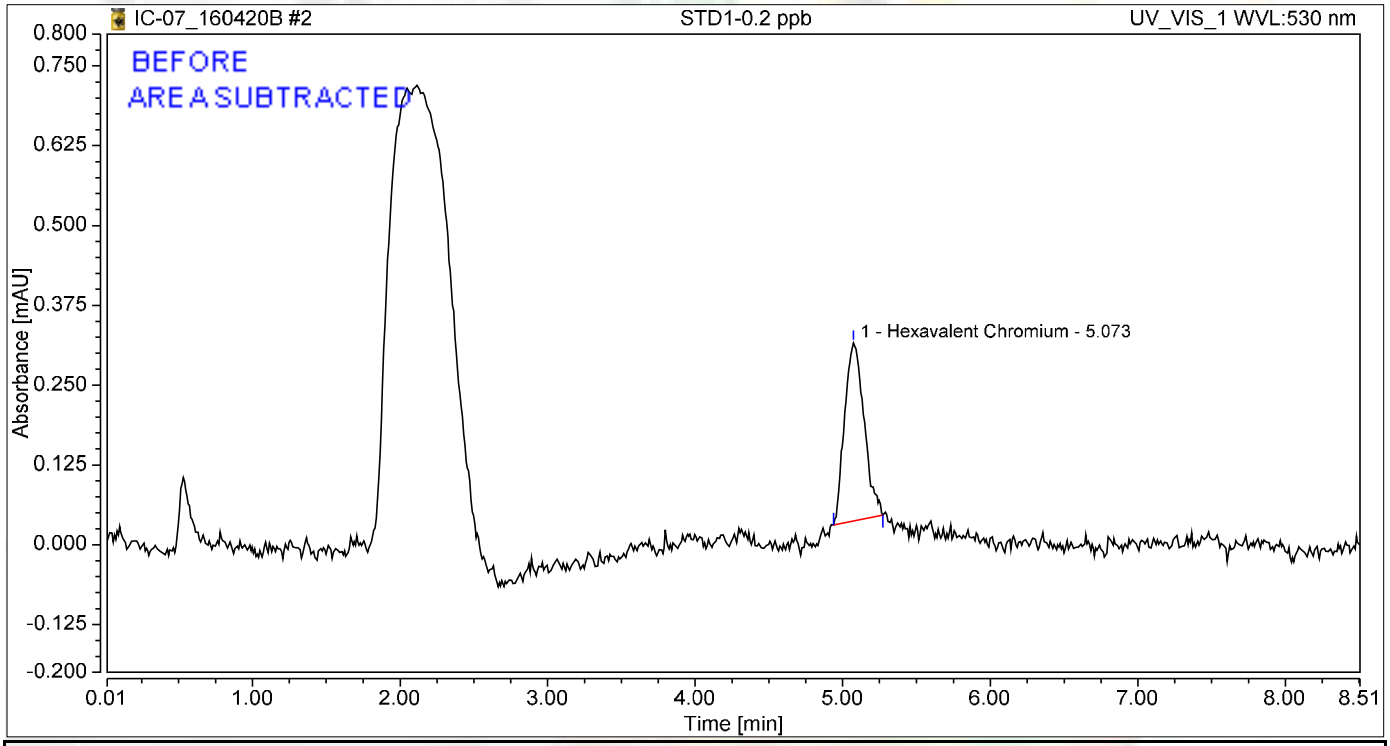
4/27/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.043	0.279	100.00	100.00	0.1807
Total:			**0.043**	**0.279**	**100.00**	**100.00**	

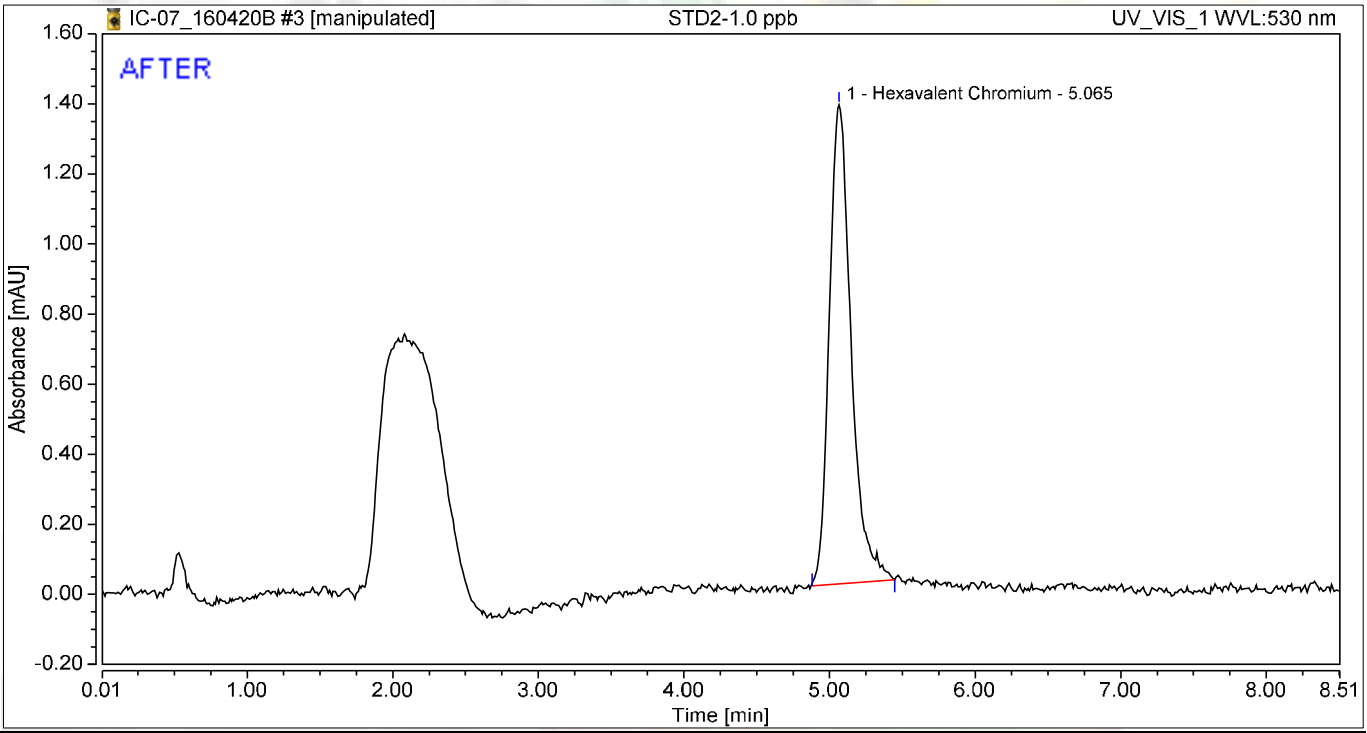
jas 4/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.238	1.368	100.00	100.00	1.0102
Total:			**0.238**	**1.368**	**100.00**	**100.00**	

jas 4/25/2016

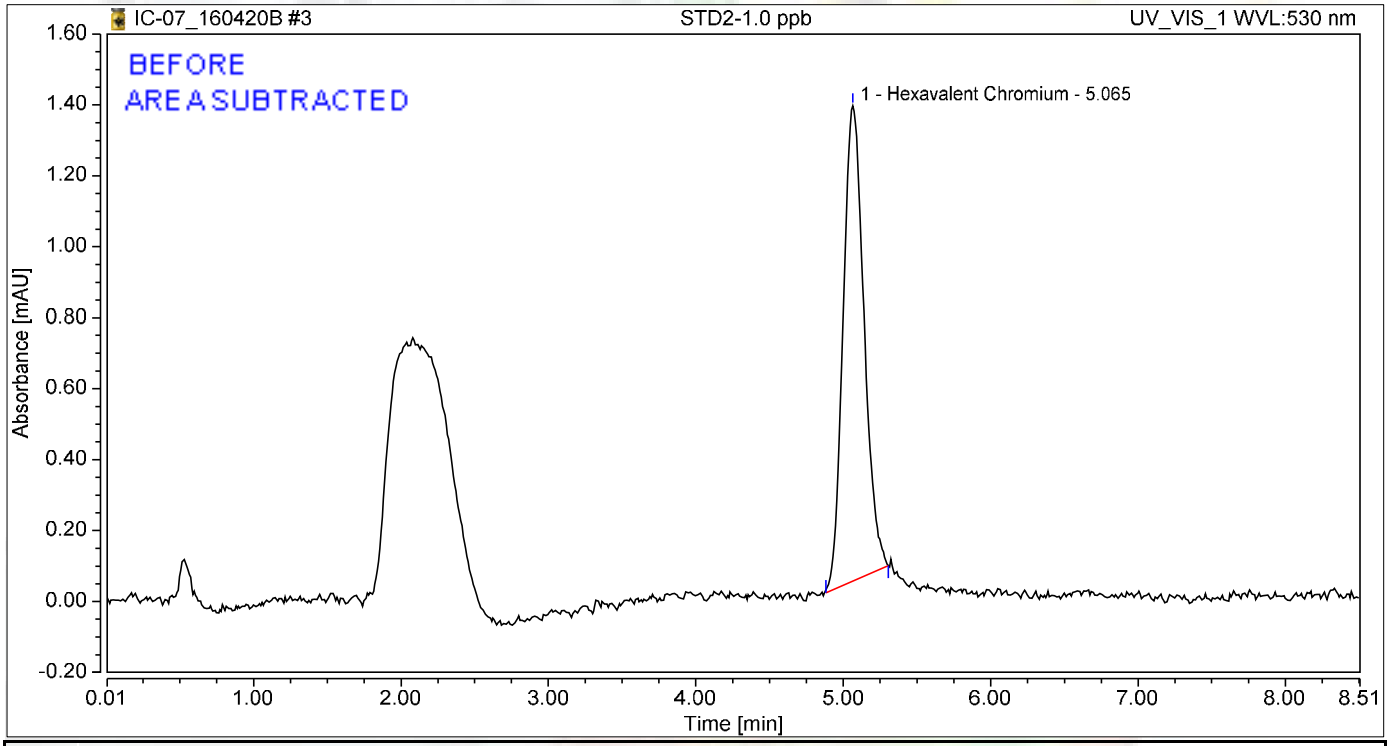
Nancy 4/27/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.219	1.340	100.00	100.00	0.9309
Total:			**0.219**	**1.340**	**100.00**	**100.00**	

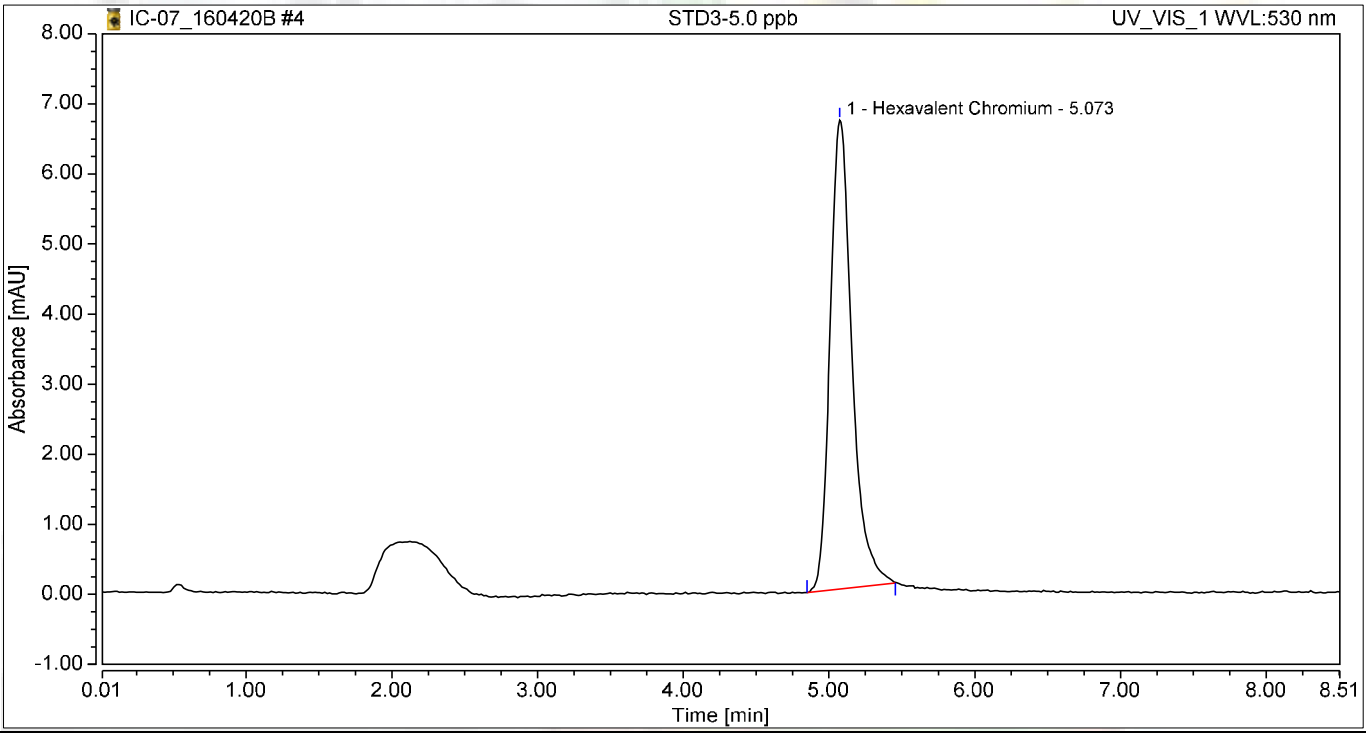
jas 4/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

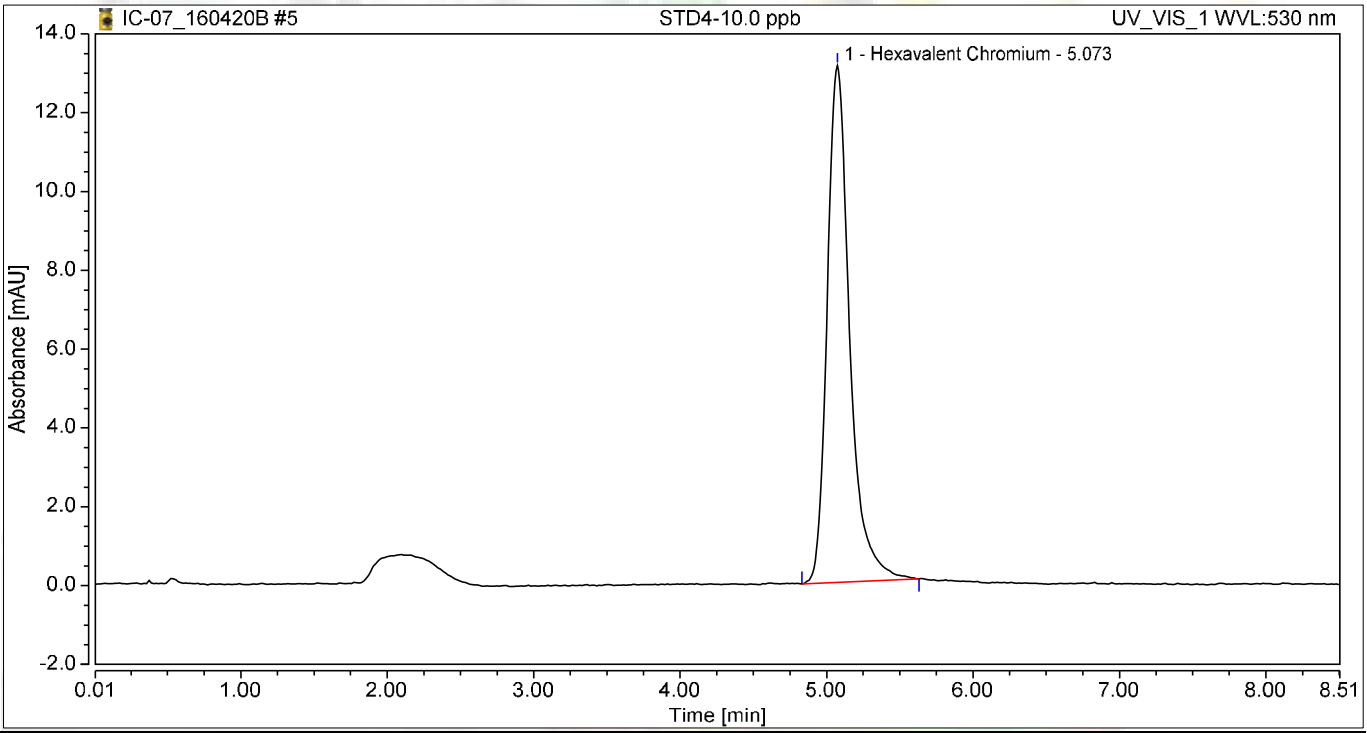
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.167	6.694	100.00	100.00	4.9574
Total:			**1.167**	**6.694**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

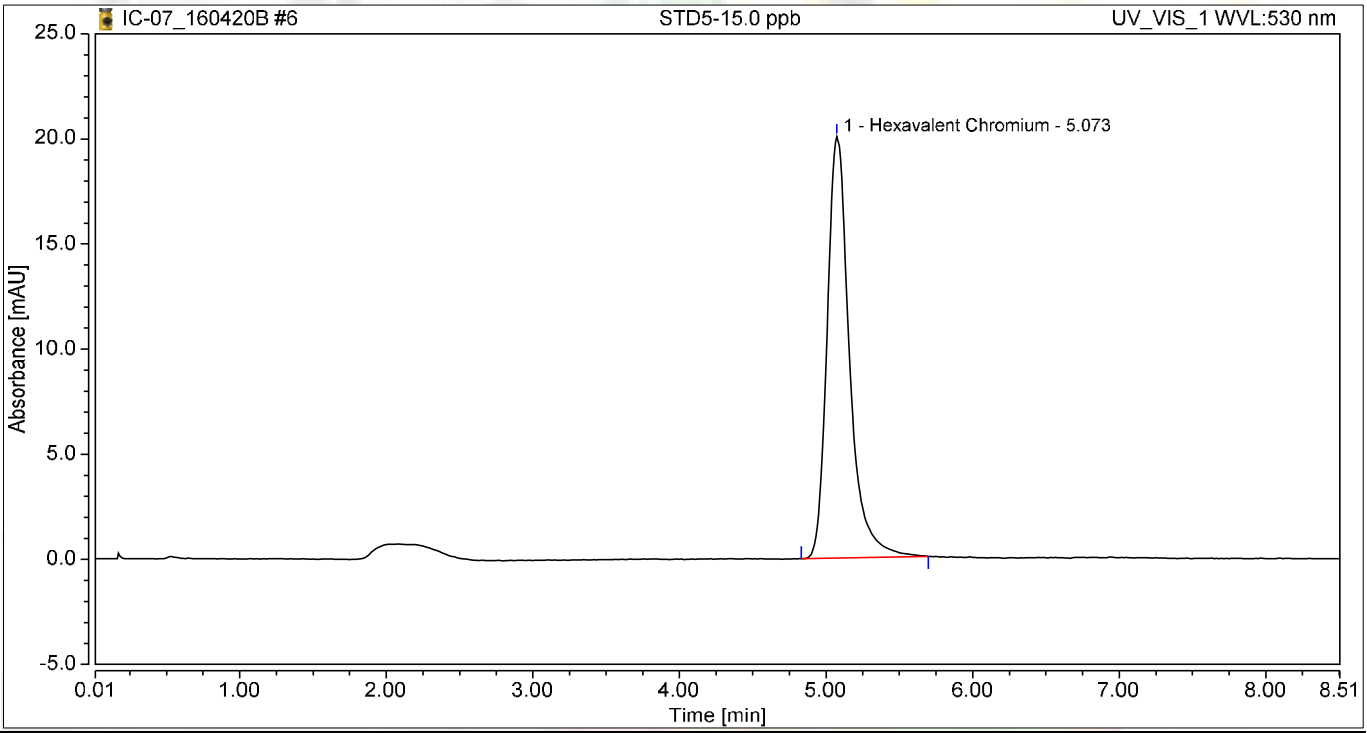
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	2.336	13.113	100.00	100.00	9.9223
Total:			**2.336**	**13.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

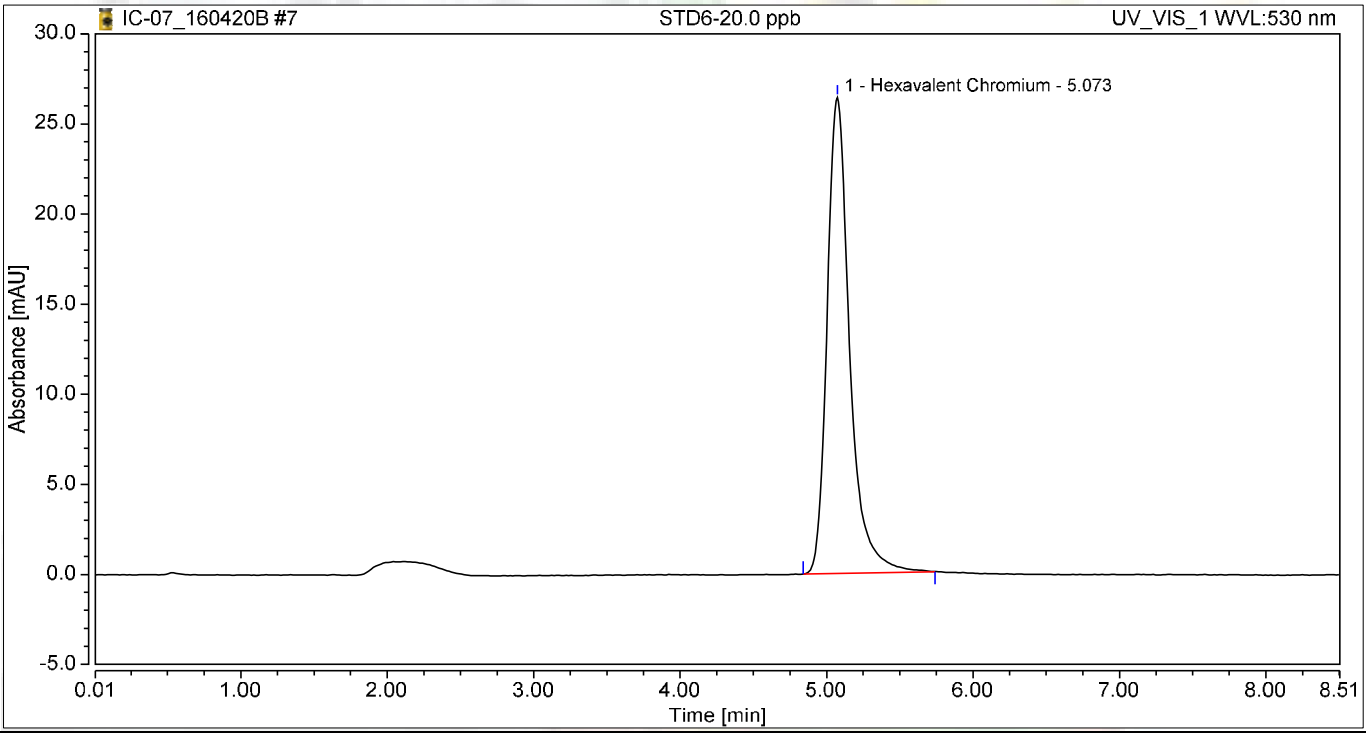
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	3.544	20.049	100.00	100.00	15.0511
Total:			**3.544**	**20.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



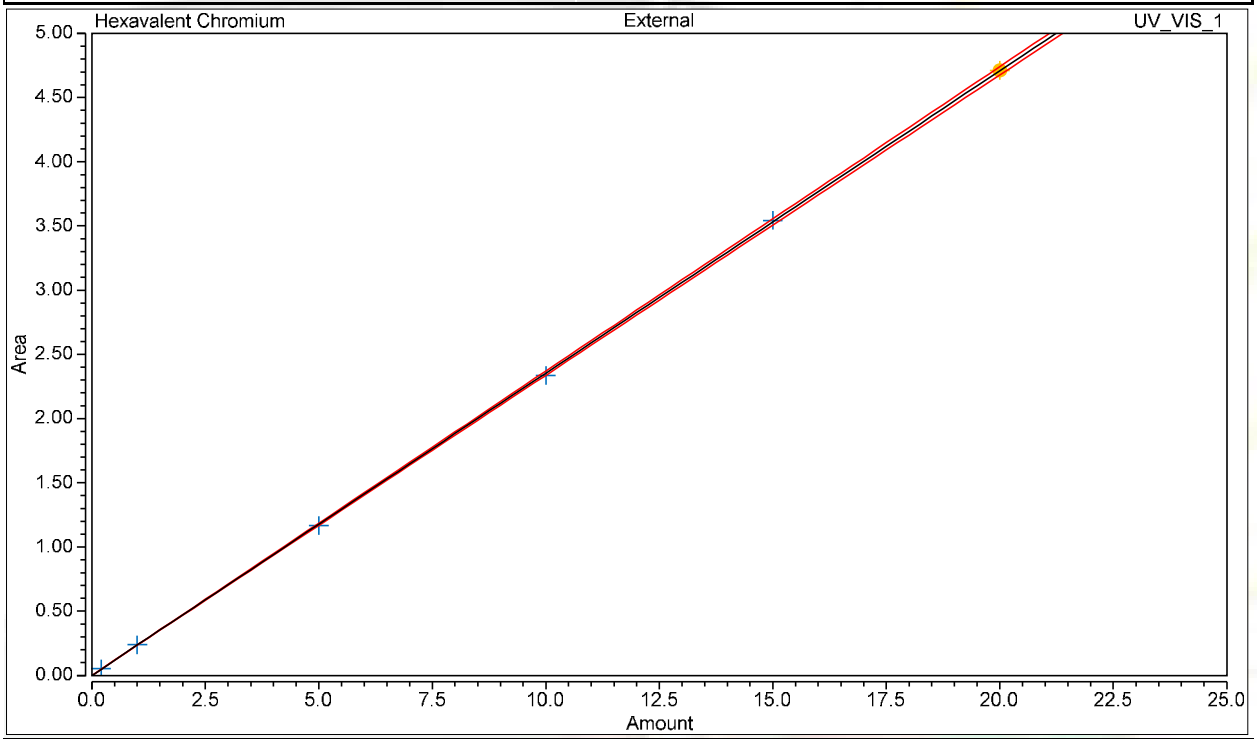
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	4.711	26.416	100.00	100.00	20.0105
Total:			**4.711**	**26.416**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2354
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

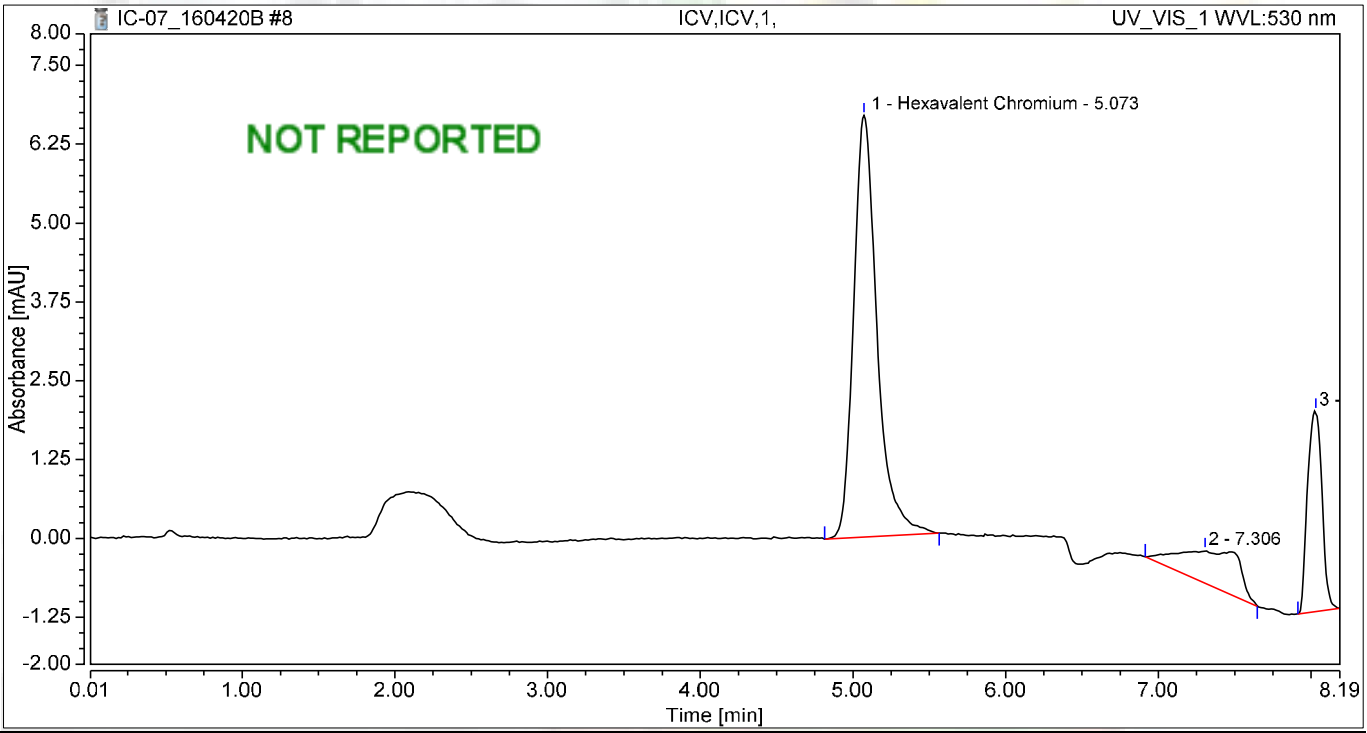
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
2	STD1-0.2 ppb	01	0.2000	0.0519	0.052	0.300
3	STD2-1.0 ppb	02	1.0000	0.2378	0.238	1.368
4	STD3-5.0 ppb	03	5.0000	1.1671	1.167	6.694
5	STD4-10.0 ppb	04	10.0000	2.3360	2.336	13.113
6	STD5-15.0 ppb	05	15.0000	3.5435	3.544	20.049
7	STD6-20.0 ppb	06	20.0000	4.7112	4.711	26.416

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.18**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

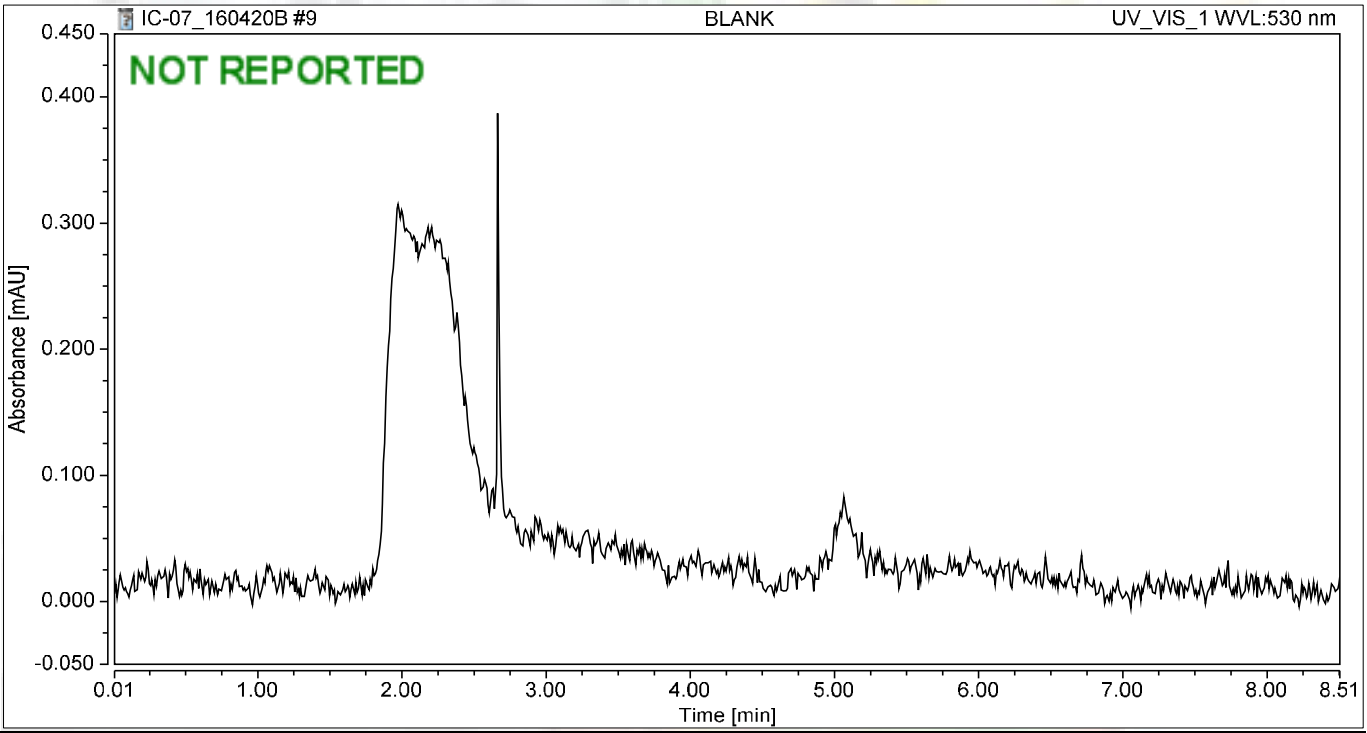
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.188	6.683	66.14	64.35	5.0459
2		7.306	0.258	0.519	14.37	5.00	n.a.
3		8.031	0.350	3.183	19.49	30.65	n.a.
Total:			**1.796**	**10.385**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

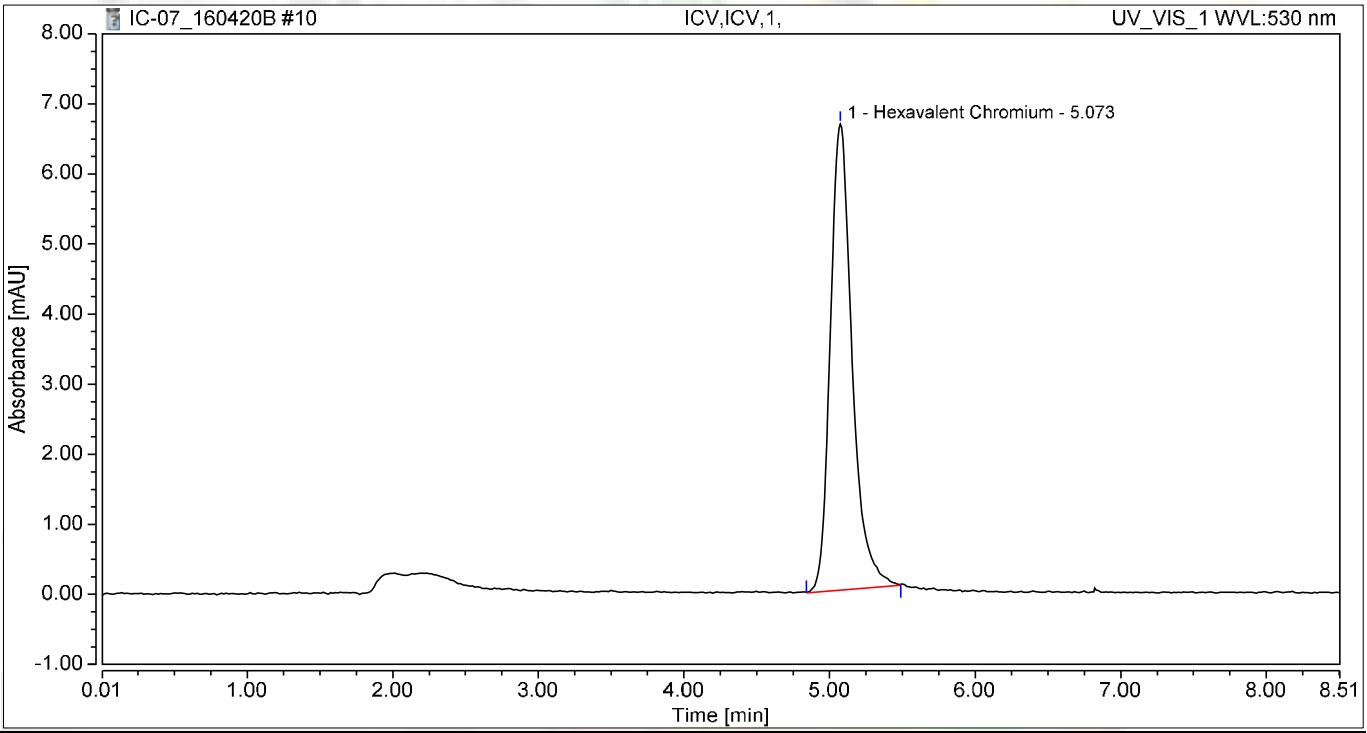
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

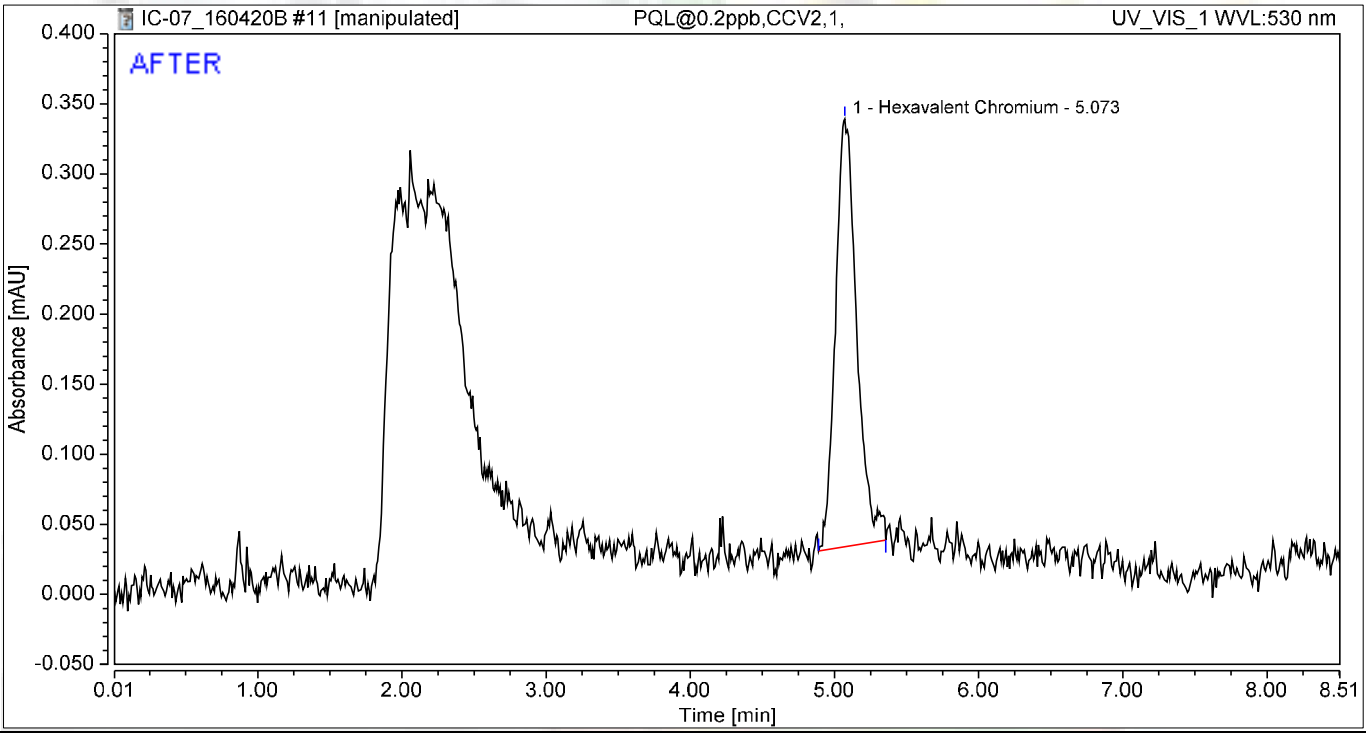
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.157	6.654	100.00	100.00	4.9132
Total:			**1.157**	**6.654**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.052	0.305	100.00	100.00	0.2212
Total:			**0.052**	**0.305**	**100.00**	**100.00**	

4/25/2016

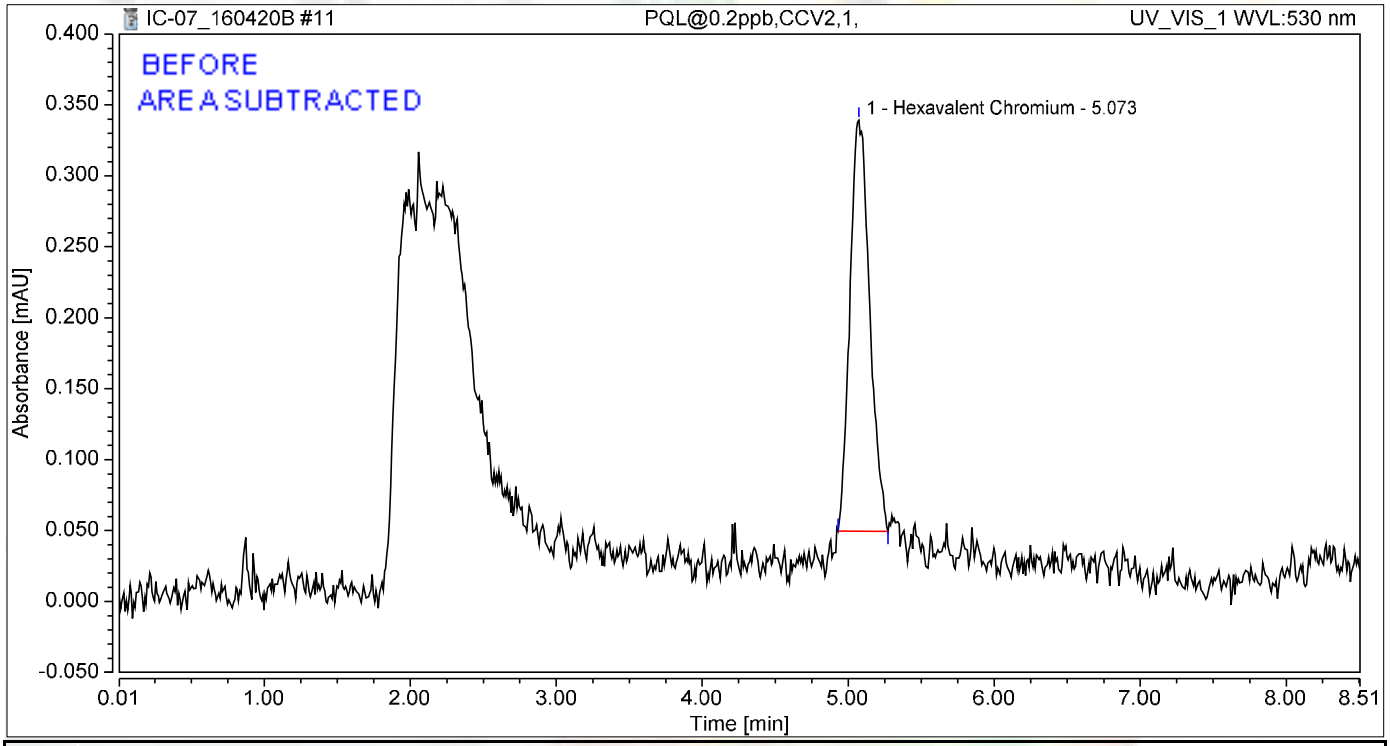
4/27/2016

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.045	0.290	100.00	100.00	0.1921
Total:			**0.045**	**0.290**	**100.00**	**100.00**	

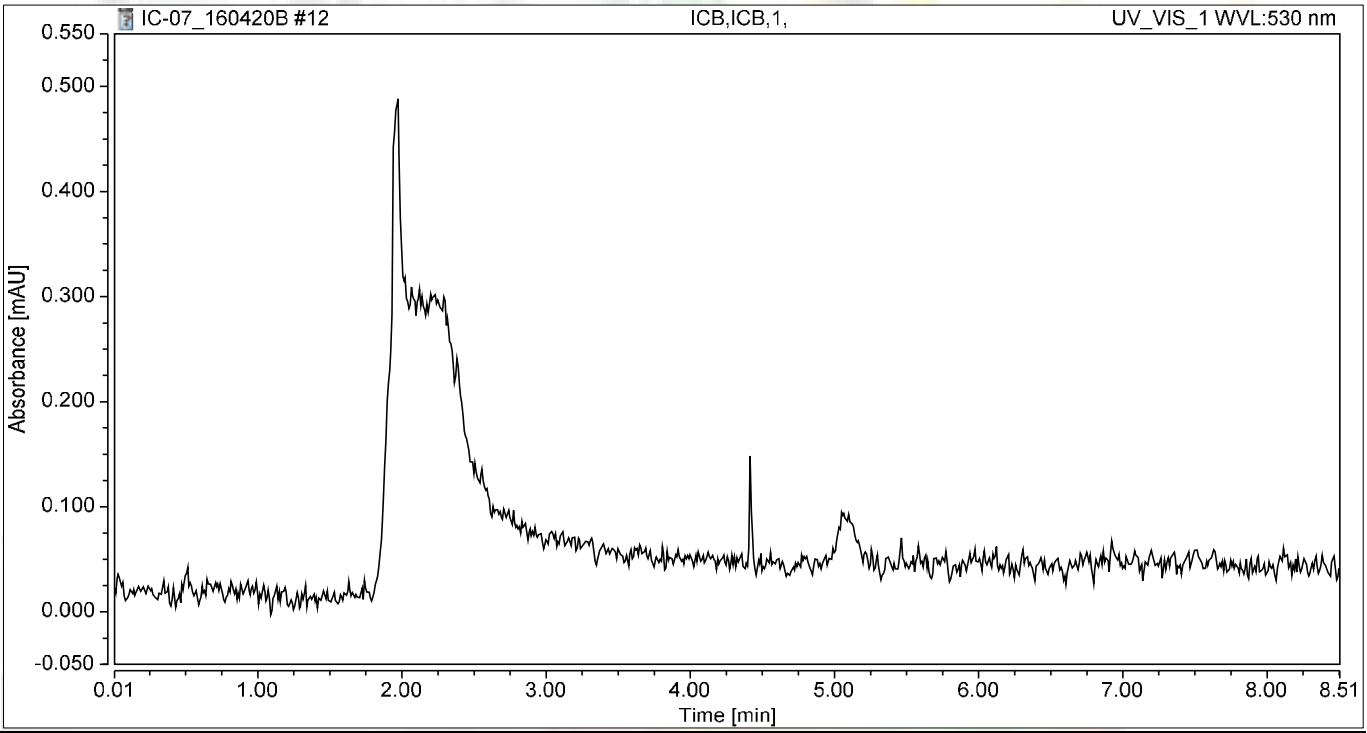
4/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160510A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	BLANK	BLANK	1	Hexavalent Chromium	05/10/16 10:40 AM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	05/10/16 10:51 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	05/10/16 11:01 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/10/16 11:10 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	05/10/16 11:20 AM	Reported
13	MB-R108366	MBLK	1	Hexavalent Chromium	05/10/16 11:29 AM	Reported
14	LCS-R108366	LCS	1	Hexavalent Chromium	05/10/16 11:39 AM	Reported
15	N019716-001A	SAMP	5	Hexavalent Chromium	05/10/16 11:51 AM	Reported
16	N019716-002A	SAMP	1	Hexavalent Chromium	05/10/16 12:02 PM	Reported
17	N019716-003A	SAMP	5	Hexavalent Chromium	05/10/16 12:11 PM	Reported
18	N019716-001AREP	DUP	5	Hexavalent Chromium	05/10/16 12:22 PM	Reported
19	N019716-002AREP	DUP	1	Hexavalent Chromium	05/10/16 12:33 PM	Reported
20	N019716-003AREP	DUP	5	Hexavalent Chromium	05/10/16 12:42 PM	Reported
21	N019611-001A	SAMP	50	Hexavalent Chromium	05/10/16 12:51 PM	Not Reported
22	N019611-001ADUP	DUP	50	Hexavalent Chromium	05/10/16 1:01 PM	Not Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	05/10/16 1:10 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	05/10/16 1:20 PM	Reported
25	N019611-001A	SAMP	20	Hexavalent Chromium	05/10/16 1:29 PM	Reported
26	N019611-001ADUP	DUP	20	Hexavalent Chromium	05/10/16 1:39 PM	Reported
27	N019611-001AMS	MS	20	Hexavalent Chromium	05/10/16 1:48 PM	Reported
28	N019611-001AMSD	MSD	20	Hexavalent Chromium	05/10/16 1:58 PM	Reported
29	N019611-002A	SAMP	50	Hexavalent Chromium	05/10/16 2:07 PM	Reported
30	N019611-003A	SAMP	10	Hexavalent Chromium	05/10/16 2:17 PM	Not Reported
31	N019611-004A	SAMP	1	Hexavalent Chromium	05/10/16 2:26 PM	Reported
32	N019611-005A	SAMP	50	Hexavalent Chromium	05/10/16 2:36 PM	Reported
33	N019611-006A	SAMP	1	Hexavalent Chromium	05/10/16 2:45 PM	Reported
34	N019611-007A	SAMP	50	Hexavalent Chromium	05/10/16 2:54 PM	Reported
35	CCV-3	CCV	1	Hexavalent Chromium	05/10/16 3:04 PM	Reported
36	CCB-3	CCB	1	Hexavalent Chromium	05/10/16 3:13 PM	Reported
37	N019611-008A	SAMP	20	Hexavalent Chromium	05/10/16 3:23 PM	Reported
38	N019611-009A	SAMP	1	Hexavalent Chromium	05/10/16 3:32 PM	Reported
39	N019611-010A	SAMP	10	Hexavalent Chromium	05/10/16 3:42 PM	Reported
40	N019611-011A	SAMP	1	Hexavalent Chromium	05/10/16 3:51 PM	Not Reported
41	N019611-012A	SAMP	1	Hexavalent Chromium	05/10/16 4:01 PM	Reported
42	N019611-013A	SAMP	1	Hexavalent Chromium	05/10/16 4:10 PM	Not Reported
43	N019611-014A	SAMP	1	Hexavalent Chromium	05/10/16 4:20 PM	Reported
44	N019611-015A	SAMP	50	Hexavalent Chromium	05/10/16 4:29 PM	Not Reported
45	N019699-001A	SAMP	1	Hexavalent Chromium	05/10/16 4:39 PM	Reported
46	N019611-003A	SAMP	25	Hexavalent Chromium	05/10/16 4:48 PM	Reported
47	CCV-4	CCV1	1	Hexavalent Chromium	05/10/16 4:57 PM	Reported
48	CCB-4	CCB	1	Hexavalent Chromium	05/10/16 5:07 PM	Reported
49	N019611-011A	SAMP	10	Hexavalent Chromium	05/10/16 5:17 PM	Reported

Nancy 5/18/2016

INJECTION LOG: 160510A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019611-013A	SAMP	5	Hexavalent Chromium	05/10/16 5:28 PM	Reported
51	N019611-015A	SAMP	1	Hexavalent Chromium	05/10/16 5:38 PM	Reported
52	MB-R108381	MBLK	1	Hexavalent Chromium	05/10/16 5:47 PM	Reported
53	LCS-R108381	LCS	1	Hexavalent Chromium	05/10/16 5:57 PM	Reported
54	N019607-001A	SAMP	1	Hexavalent Chromium	05/10/16 6:06 PM	Reported
55	N019607-001ADUP	DUP	1	Hexavalent Chromium	05/10/16 6:16 PM	Reported
56	N019607-001AMS	MS	1	Hexavalent Chromium	05/10/16 6:25 PM	Reported
57	N019607-001AMSD	MSD	1	Hexavalent Chromium	05/10/16 6:35 PM	Reported
58	N019606-006A	SAMP	5	Hexavalent Chromium	05/10/16 6:44 PM	Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/10/16 6:58 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/10/16 7:10 PM	Reported
61	N019606-006AMS	MS	5	Hexavalent Chromium	05/10/16 7:19 PM	Reported
62	N019606-013A	SAMP	20	Hexavalent Chromium	05/10/16 7:29 PM	Reported
63	N019606-013AMS	MS	20	Hexavalent Chromium	05/10/16 7:38 PM	Reported
64	N019607-002A	SAMP	200	Hexavalent Chromium	05/10/16 7:47 PM	Reported
65	N019607-002AMS	MS	200	Hexavalent Chromium	05/10/16 7:57 PM	Reported
66	N019607-003A	SAMP	20	Hexavalent Chromium	05/10/16 8:06 PM	Reported
67	N019607-003AMS	MS	20	Hexavalent Chromium	05/10/16 8:16 PM	Reported
68	N019607-004A	SAMP	1	Hexavalent Chromium	05/10/16 8:25 PM	Reported
69	N019607-004AMS	MS	1	Hexavalent Chromium	05/10/16 8:35 PM	Reported
70	N019607-005A	SAMP	1	Hexavalent Chromium	05/10/16 8:44 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/10/16 8:54 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/10/16 9:03 PM	Reported
73	N019607-005AMS	MS	1	Hexavalent Chromium	05/10/16 9:13 PM	Not Reported
74	N019607-006A	SAMP	1	Hexavalent Chromium	05/10/16 9:22 PM	Not Reported
75	N019607-006AMS	MS	1	Hexavalent Chromium	05/10/16 9:32 PM	Not Reported
76	N019607-007A	SAMP	10	Hexavalent Chromium	05/10/16 9:41 PM	Not Reported
77	N019607-007AMS	MS	10	Hexavalent Chromium	05/10/16 9:50 PM	Not Reported
78	N019607-008A	SAMP	1	Hexavalent Chromium	05/10/16 10:00 PM	Not Reported
79	N019607-008AMS	MS	1	Hexavalent Chromium	05/10/16 10:09 PM	Not Reported
80	N019607-009A	SAMP	1	Hexavalent Chromium	05/10/16 10:19 PM	Not Reported
81	N019607-009AMS	MS	1	Hexavalent Chromium	05/10/16 10:28 PM	Not Reported
82	N019607-010A	SAMP	1	Hexavalent Chromium	05/10/16 10:38 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/10/16 10:47 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/10/16 10:57 PM	Reported
85	N019607-010AMS	MS	1	Hexavalent Chromium	05/10/16 11:06 PM	Not Reported
86	N019607-011A	SAMP	1	Hexavalent Chromium	05/10/16 11:16 PM	Reported
87	N019607-011AMS	MS	1	Hexavalent Chromium	05/10/16 11:25 PM	Reported
88	N019607-005A	SAMP	5	Hexavalent Chromium	05/10/16 11:34 PM	Reported
89	N019607-005AMS	MS	5	Hexavalent Chromium	05/10/16 11:44 PM	Reported
90	N019607-009A	SAMP	5	Hexavalent Chromium	05/10/16 11:53 PM	Reported
91	N019607-009AMS	MS	5	Hexavalent Chromium	05/11/16 12:03 AM	Reported
92	N019612-001A	SAMP	10	Hexavalent Chromium	05/11/16 12:12 AM	Reported
93	N019612-002A	SAMP	10	Hexavalent Chromium	05/11/16 12:22 AM	Reported
94	N019612-003A	SAMP	1	Hexavalent Chromium	05/11/16 12:31 AM	Reported
95	CCV-8	CCV1	1	Hexavalent Chromium	05/11/16 12:41 AM	Reported
96	CCB-8	CCB	1	Hexavalent Chromium	05/11/16 12:50 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160510A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/May/16 07:11:02**
No. of Injections:	**99**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	BLANK	1	1000	Unknown		05/10/2016 10:40	Finished	
9	BLANK	2	1000	Unknown		05/10/2016 10:51	Finished	
10	CCV-1,CCV,1,	3	1000	Unknown		05/10/2016 11:01	Finished	CCV @5ppb, IWST-160401A
11	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/10/2016 11:10	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	5	1000	Unknown		05/10/2016 11:20	Finished	CCB R160502C
13	MB-H2O,MBLK,1	6	1000	Unknown		05/10/2016 11:29	Finished	MB R160407B
14	LCS-H2O,LCS,1	7	1000	Unknown		05/10/2016 11:39	Finished	LCS, IWST-160401B
15	N019716-001A,SAMP	8	1000	Unknown		05/10/2016 11:51	Finished	SAMP, 2.0>10mL
16	N019716-002A,SAMP	9	1000	Unknown		05/10/2016 12:02	Finished	SAMP, 10mL
17	N019716-003A,SAMP	10	1000	Unknown		05/10/2016 12:11	Finished	SAMP, 2.0>10mL
18	N019716-001AREP,D	11	1000	Unknown		05/10/2016 12:22	Finished	DUP, 2.0>10mL
19	N019716-002AREP,D	12	1000	Unknown		05/10/2016 12:33	Finished	DUP, 10mL
20	N019716-003AREP,D	13	1000	Unknown		05/10/2016 12:42	Finished	DUP, 2.0>10mL
21	N019611-001A,SAMP	14	1000	Unknown		05/10/2016 12:51	Finished	SAMP, 0.2>10mL
22	N019611-001ADUP,D	15	1000	Unknown		05/10/2016 13:01	Finished	DUP, 0.2>10mL
23	CCV-2,CCV1,1,	16	1000	Unknown		05/10/2016 13:10	Finished	CCV @10ppb, IWST-160401A
24	CCB-2,CCB,1,	17	1000	Unknown		05/10/2016 13:20	Finished	CCB R160426G
25	N019611-001A,SAMP	18	1000	Unknown		05/10/2016 13:29	Finished	SAMP, 0.5>10mL
26	N019611-001ADUP,D	19	1000	Unknown		05/10/2016 13:39	Finished	DUP, 0.5>10mL
27	N019611-001AMS,MS	20	1000	Unknown		05/10/2016 13:48	Finished	MS (5ppb) , IWST-160401B, 0.
28	N019611-001AMSD,M	21	1000	Unknown		05/10/2016 13:58	Finished	MSD (5ppb) , IWST-160401B, (
29	N019611-002A,SAMP	22	1000	Unknown		05/10/2016 14:07	Finished	SAMP, 0.2>10mL
30	N019611-003A,SAMP	23	1000	Unknown		05/10/2016 14:17	Finished	SAMP, 1.0>10mL
31	N019611-004A,SAMP	24	1000	Unknown		05/10/2016 14:26	Finished	SAMP, 10mL
32	N019611-005A,SAMP	25	1000	Unknown		05/10/2016 14:36	Finished	SAMP, 0.2>10mL
33	N019611-006A,SAMP	26	1000	Unknown		05/10/2016 14:45	Finished	SAMP, 10mL
34	N019611-007A,SAMP	27	1000	Unknown		05/10/2016 14:54	Finished	SAMP, 0.2>10mL
35	CCV-3,CCV,1,	28	1000	Unknown		05/10/2016 15:04	Finished	CCV @5pb, IWST-160401A
36	CCB-3,CCB,1,	29	1000	Unknown		05/10/2016 15:13	Finished	CCB
37	N019611-008A,SAMP	30	1000	Unknown		05/10/2016 15:23	Finished	SAMP, 0.5>10mL
38	N019611-009A,SAMP	31	1000	Unknown		05/10/2016 15:32	Finished	SAMP, 10mL
39	N019611-010A,SAMP	32	1000	Unknown		05/10/2016 15:42	Finished	SAMP, 1.0>10mL
40	N019611-011A,SAMP	33	1000	Unknown		05/10/2016 15:51	Finished	SAMP, 10mL
41	N019611-012A,SAMP	34	1000	Unknown		05/10/2016 16:01	Finished	SAMP, 10mL
42	N019611-013A,SAMP	35	1000	Unknown		05/10/2016 16:10	Finished	SAMP, 10mL
43	N019611-014A,SAMP	36	1000	Unknown		05/10/2016 16:20	Finished	SAMP, 10mL
44	N019611-015A,SAMP	37	1000	Unknown		05/10/2016 16:29	Finished	SAMP, 0.2>10mL
45	N019699-001A,SAMP	38	1000	Unknown		05/10/2016 16:39	Finished	SAMP, 10mL
46	N019611-003A,SAMP	39	1000	Unknown		05/10/2016 16:48	Finished	SAMP, 0.4>10mL
47	CCV-4,CCV1,1,	40	1000	Unknown		05/10/2016 16:57	Finished	CCV @10ppb, IWST-160401A
48	CCB-4,CCB,1,	41	1000	Unknown		05/10/2016 17:07	Finished	CCB
49	N019611-011A,SAMP	1	1000	Unknown		05/10/2016 17:17	Finished	SAMP, 1.0>10mL
50	N019611-013A,SAMP	2	1000	Unknown		05/10/2016 17:28	Finished	SAMP, 2.0>10mL
51	N019611-015A,SAMP	3	1000	Unknown		05/10/2016 17:38	Finished	SAMP, 10mL
52	MB-H2O,MBLK,1	4	1000	Unknown		05/10/2016 17:47	Finished	MB R160426G
53	LCS-H2O,LCS,1	5	1000	Unknown		05/10/2016 17:57	Finished	LCS, IWST-160401B
54	N019607-001A,SAMP	6	1000	Unknown		05/10/2016 18:06	Finished	SAMP, 10mL
55	N019607-001ADUP,D	7	1000	Unknown		05/10/2016 18:16	Finished	DUP, 10mL
56	N019607-001AMS,MS	8	1000	Unknown		05/10/2016 18:25	Finished	MS (1ppb), IWST-160401B, 10
57	N019607-001AMSD,M	9	1000	Unknown		05/10/2016 18:35	Finished	MSD (1ppb), IWST-160401B, 1
58	N019606-006A,SAMP	10	1000	Unknown		05/10/2016 18:44	Finished	SAMP, 2.0>10mL
59	CCV-5,CCV,1,	11	1000	Unknown		05/10/2016 18:58	Finished	CCV @5pb, IWST-160401A
60	CCB-5,CCB,1,	12	1000	Unknown		05/10/2016 19:10	Finished	CCB

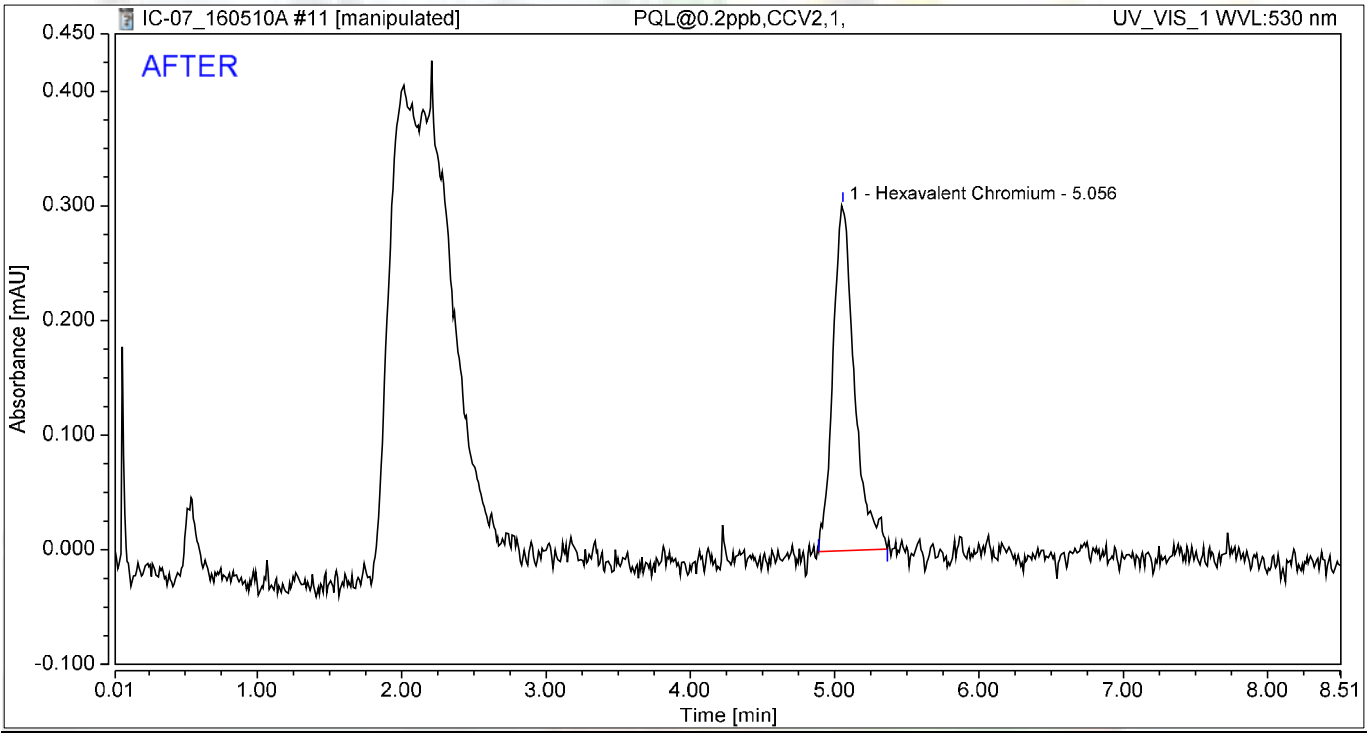
61	N019606-006AMS,MS	13	1000	Unknown		05/10/2016 19:19	Finished	MS (5ppb), IWST-160401B, 2.0
62	N019606-013A,SAMP	14	1000	Unknown		05/10/2016 19:29	Finished	SAMP, 0.5>10mL
63	N019606-013AMS,MS	15	1000	Unknown		05/10/2016 19:38	Finished	MS (5ppb), IWST-160401B, 0.5
64	N019607-002A,SAMP	16	1000	Unknown		05/10/2016 19:47	Finished	SAMP, 50uL>10mL
65	N019607-002AMS,MS	17	1000	Unknown		05/10/2016 19:57	Finished	MS (5ppb), IWST-160401B, 50
66	N019607-003A,SAMP	18	1000	Unknown		05/10/2016 20:06	Finished	SAMP, 0.5>10mL
67	N019607-003AMS,MS	19	1000	Unknown		05/10/2016 20:16	Finished	MS (5ppb), IWST-160401B, 0.5
68	N019607-004A,SAMP	20	1000	Unknown		05/10/2016 20:25	Finished	SAMP, 10mL
69	N019607-004AMS,MS	21	1000	Unknown		05/10/2016 20:35	Finished	MS (1ppb), IWST-160401B, 10
70	N019607-005A,SAMP	22	1000	Unknown		05/10/2016 20:44	Finished	SAMP, 10mL
71	CCV-6,CCV1,1,	23	1000	Unknown		05/10/2016 20:54	Finished	CCV @10ppb, IWST-160401A
72	CCB-6,CCB,1,	24	1000	Unknown		05/10/2016 21:03	Finished	CCB
73	N019607-005AMS,MS	25	1000	Unknown		05/10/2016 21:13	Finished	MS (1ppb), IWST-160401B, 10
74	N019607-006A,SAMP	26	1000	Unknown		05/10/2016 21:22	Finished	SAMP, 10mL
75	N019607-006AMS,MS	27	1000	Unknown		05/10/2016 21:32	Finished	MS (1ppb), IWST-160401B, 10
76	N019607-007A,SAMP	28	1000	Unknown		05/10/2016 21:41	Finished	SAMP, 1.0>10mL
77	N019607-007AMS,MS	29	1000	Unknown		05/10/2016 21:50	Finished	MS (5ppb), IWST-160401B, 1.0
78	N019607-008A,SAMP	30	1000	Unknown		05/10/2016 22:00	Finished	SAMP, 10mL
79	N019607-008AMS,MS	31	1000	Unknown		05/10/2016 22:09	Finished	MS (1ppb), IWST-160401B, 10
80	N019607-009A,SAMP	32	1000	Unknown		05/10/2016 22:19	Finished	SAMP, 10mL
81	N019607-009AMS,MS	33	1000	Unknown		05/10/2016 22:28	Finished	MS (1ppb), IWST-160401B, 10
82	N019607-010A,SAMP	34	1000	Unknown		05/10/2016 22:38	Finished	SAMP, 10mL
83	CCV-7,CCV,1,	35	1000	Unknown		05/10/2016 22:47	Finished	CCV @5pb, IWST-160401A
84	CCB-7,CCB,1,	36	1000	Unknown		05/10/2016 22:57	Finished	CCB
85	N019607-010AMS,MS	37	1000	Unknown		05/10/2016 23:06	Finished	MS (1ppb), IWST-160401B, 10
86	N019607-011A,SAMP	38	1000	Unknown		05/10/2016 23:16	Finished	SAMP, 10mL
87	N019607-011AMS,MS	39	1000	Unknown		05/10/2016 23:25	Finished	MS (1ppb), IWST-160401B, 10
88	N019607-005A,SAMP	40	1000	Unknown		05/10/2016 23:34	Finished	SAMP, 2.0>10mL
89	N019607-005AMS,MS	41	1000	Unknown		05/10/2016 23:44	Finished	MS (1ppb), IWST-160401B, 2.0
90	N019607-009A,SAMP	42	1000	Unknown		05/10/2016 23:53	Finished	SAMP, 2.0>10mL
91	N019607-009AMS,MS	43	1000	Unknown		05/11/2016 00:03	Finished	MS (1ppb), IWST-160401B, 2.0
92	N019612-001A,SAMP	44	1000	Unknown		05/11/2016 00:12	Finished	SAMP, 1.0>10mL
93	N019612-002A,SAMP	45	1000	Unknown		05/11/2016 00:22	Finished	SAMP, 1.0>10mL
94	N019612-003A,SAMP	46	1000	Unknown		05/11/2016 00:31	Finished	SAMP, 10mL
95	CCV-8,CCV1,1,	47	1000	Unknown		05/11/2016 00:41	Finished	CCV @10ppb, IWST-160401A
96	CCB-8,CCB,1,	48	1000	Unknown		05/11/2016 00:50	Finished	CCB
97	SHUTDOWN	49	1000	Unknown		05/11/2016 01:00	Finished	
98	Eluent: R160509A, R	50	1000	Unknown		n.a.	Finished	Eluent
99	PCR: R160509B	51	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.052	0.302	100.00	100.00	0.2220
Total:			**0.052**	**0.302**	**100.00**	**100.00**	

5/16/2016

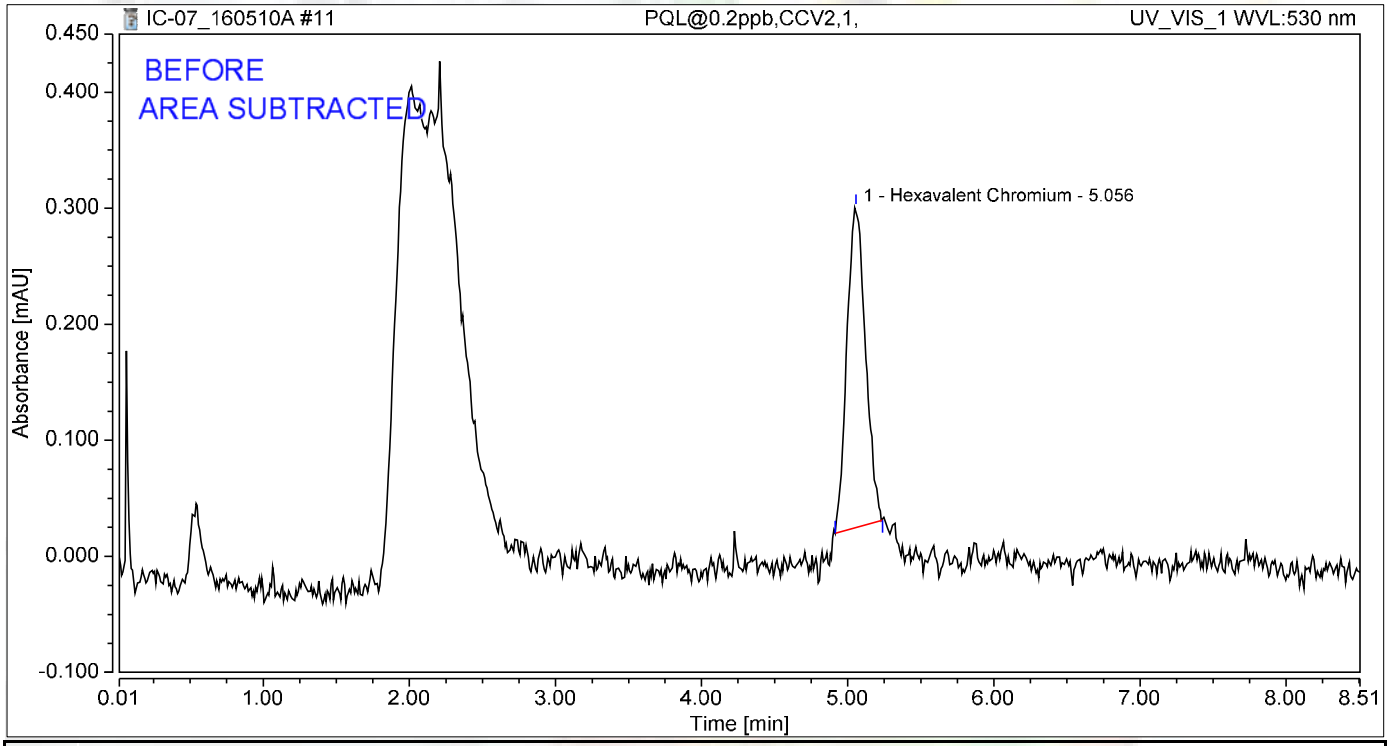
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.041	0.276	100.00	100.00	0.1726
Total:			**0.041**	**0.276**	**100.00**	**100.00**	

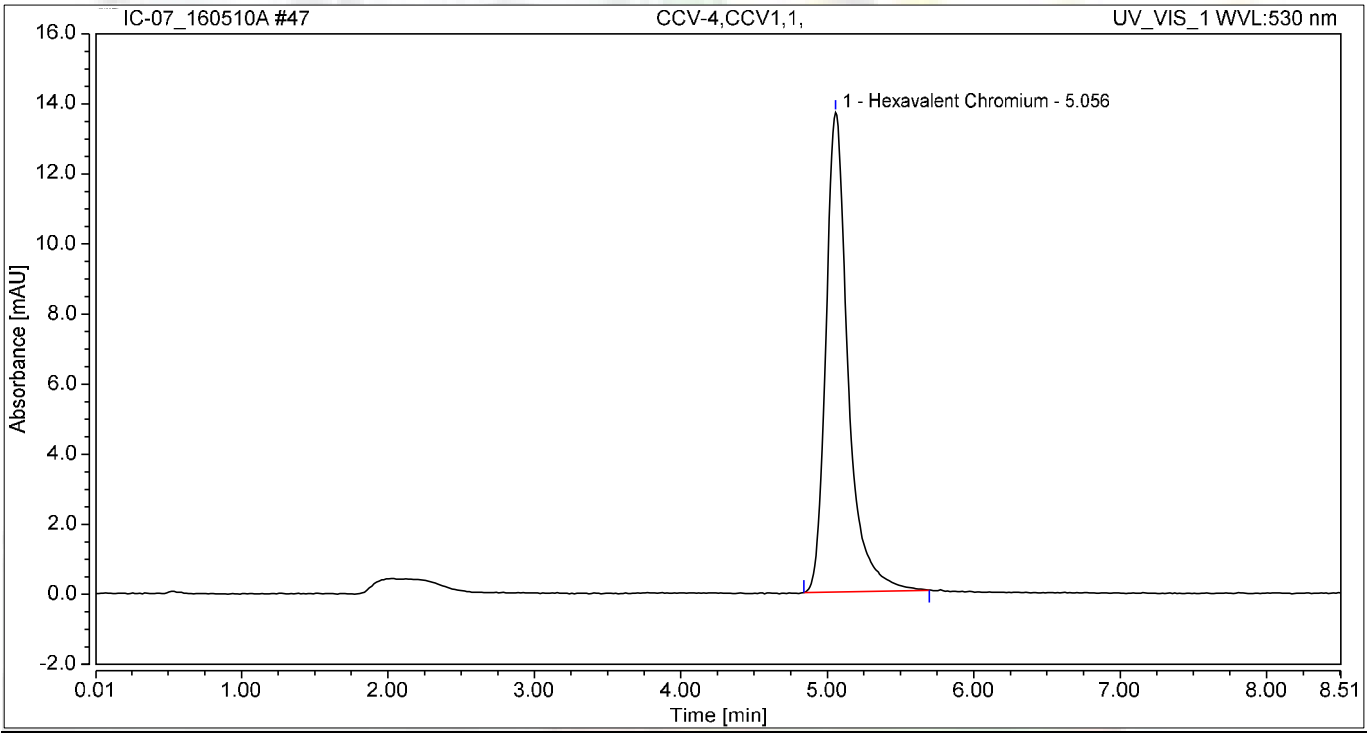
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

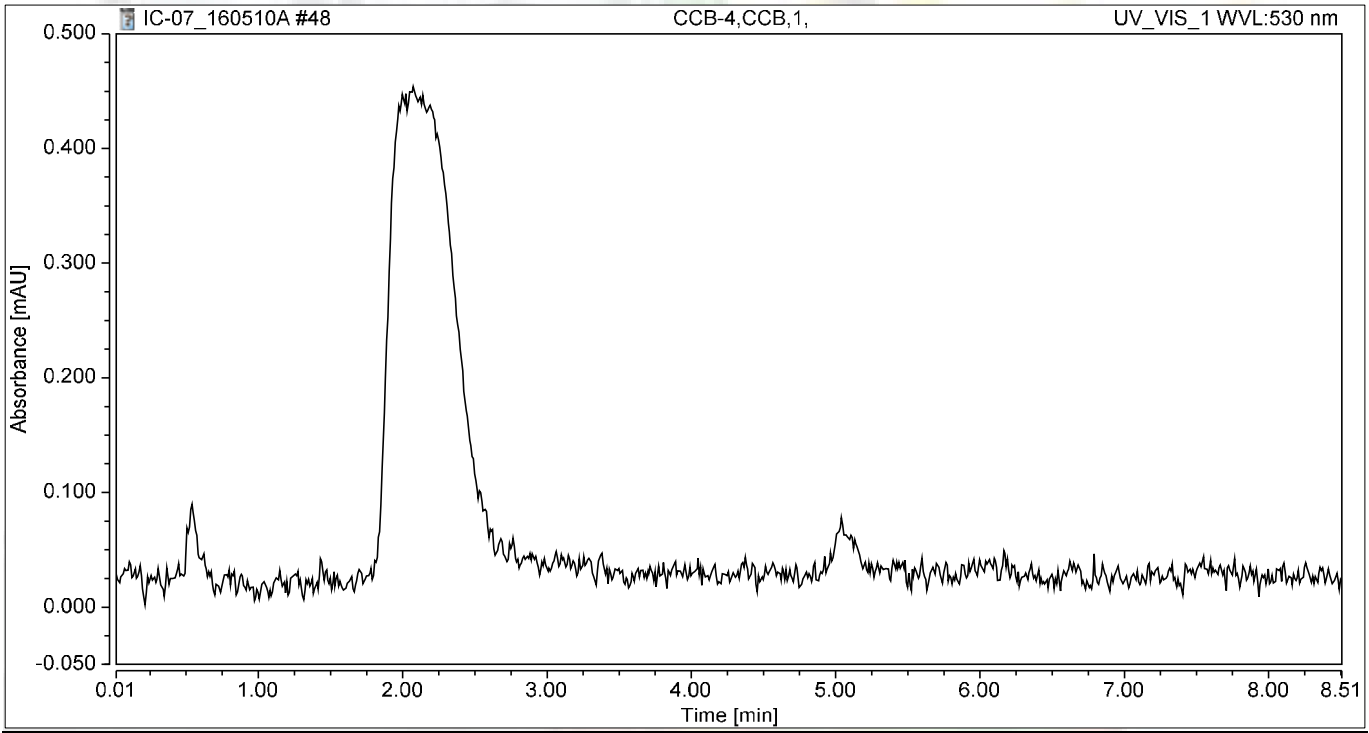
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.399	13.689	100.00	100.00	10.1899
Total:			**2.399**	**13.689**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

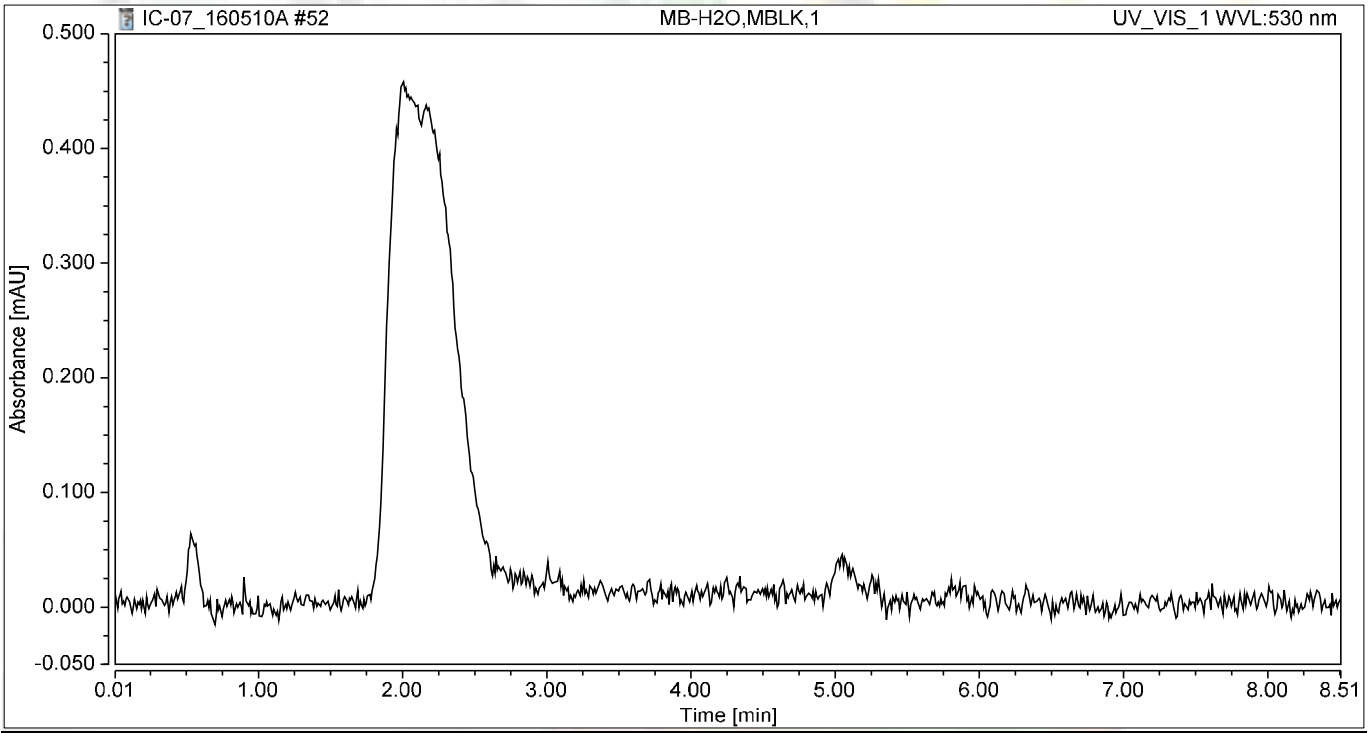
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

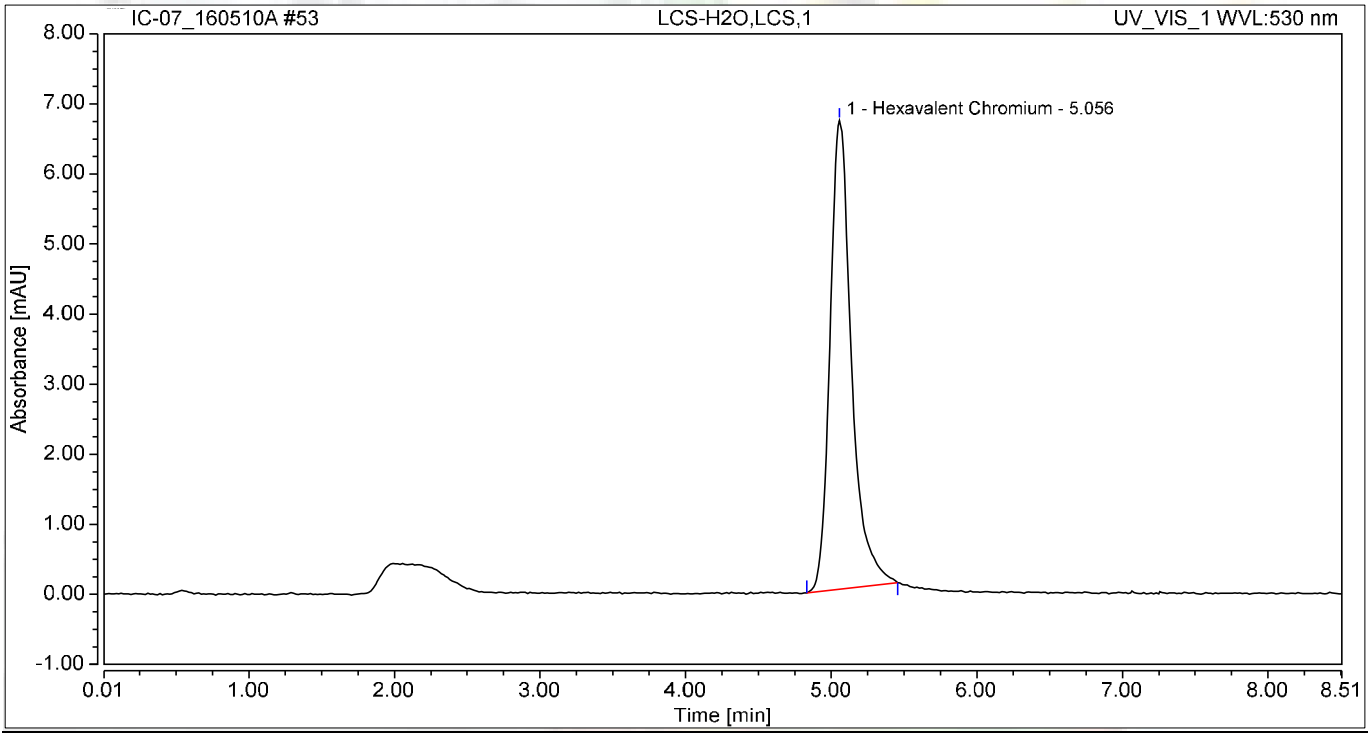
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

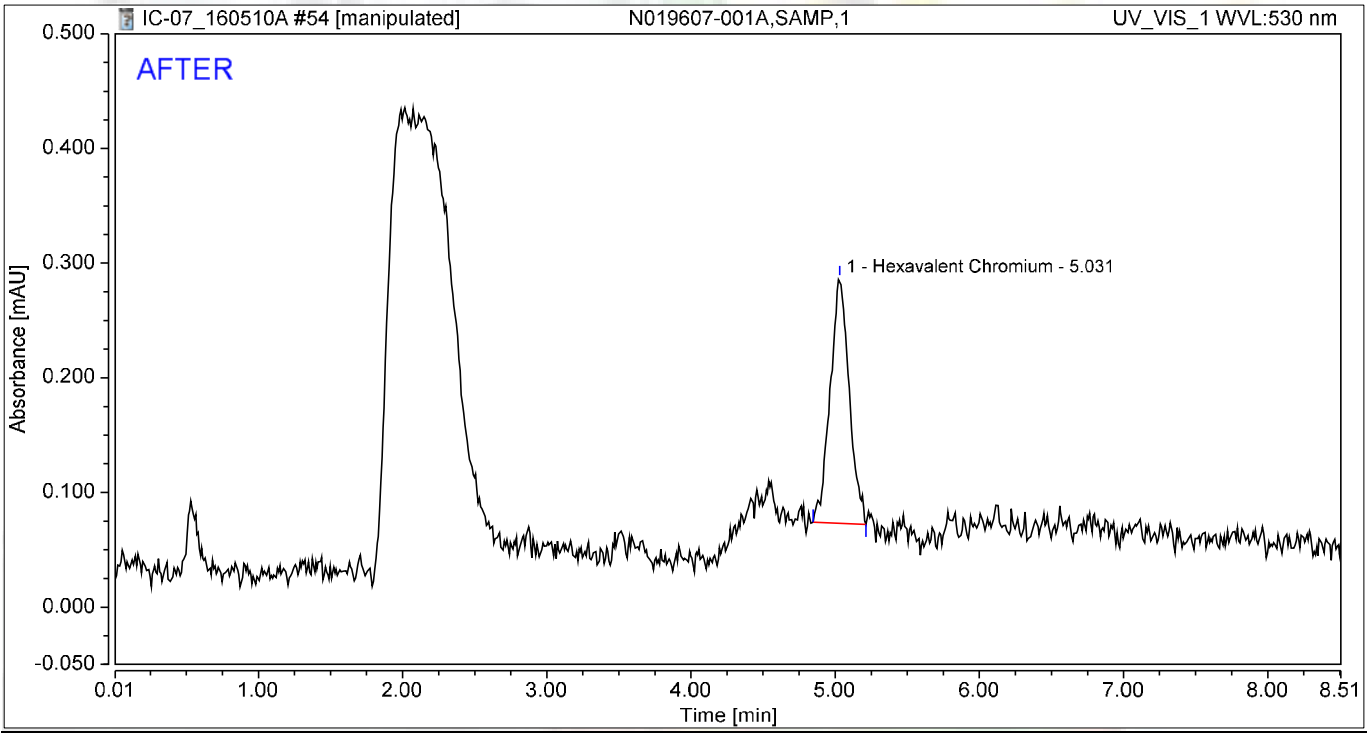
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.148	6.693	100.00	100.00	4.8748
Total:			**1.148**	**6.693**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.033	0.213	100.00	100.00	0.1387
Total:			**0.033**	**0.213**	**100.00**	**100.00**	

jas 5/16/2016

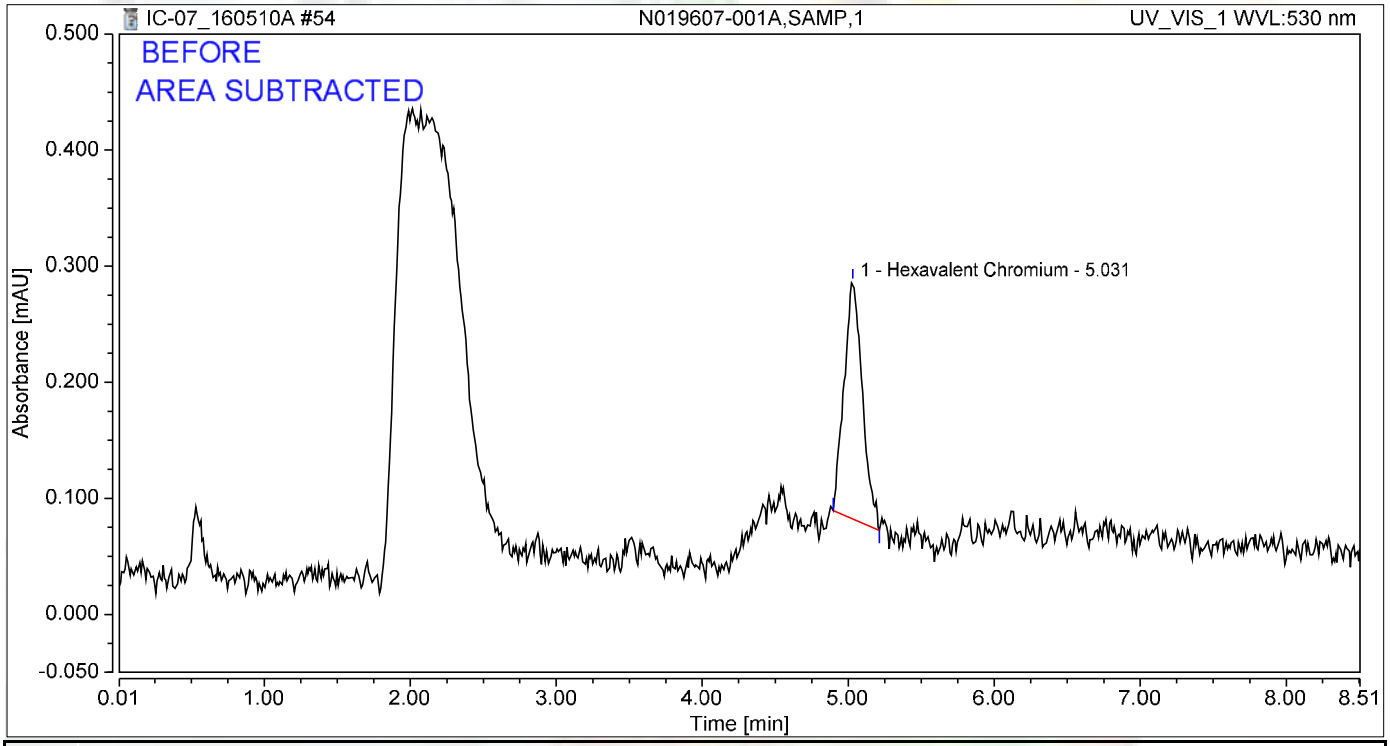
Nancy 5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.030	0.204	100.00	100.00	0.1253
Total:			**0.030**	**0.204**	**100.00**	**100.00**	

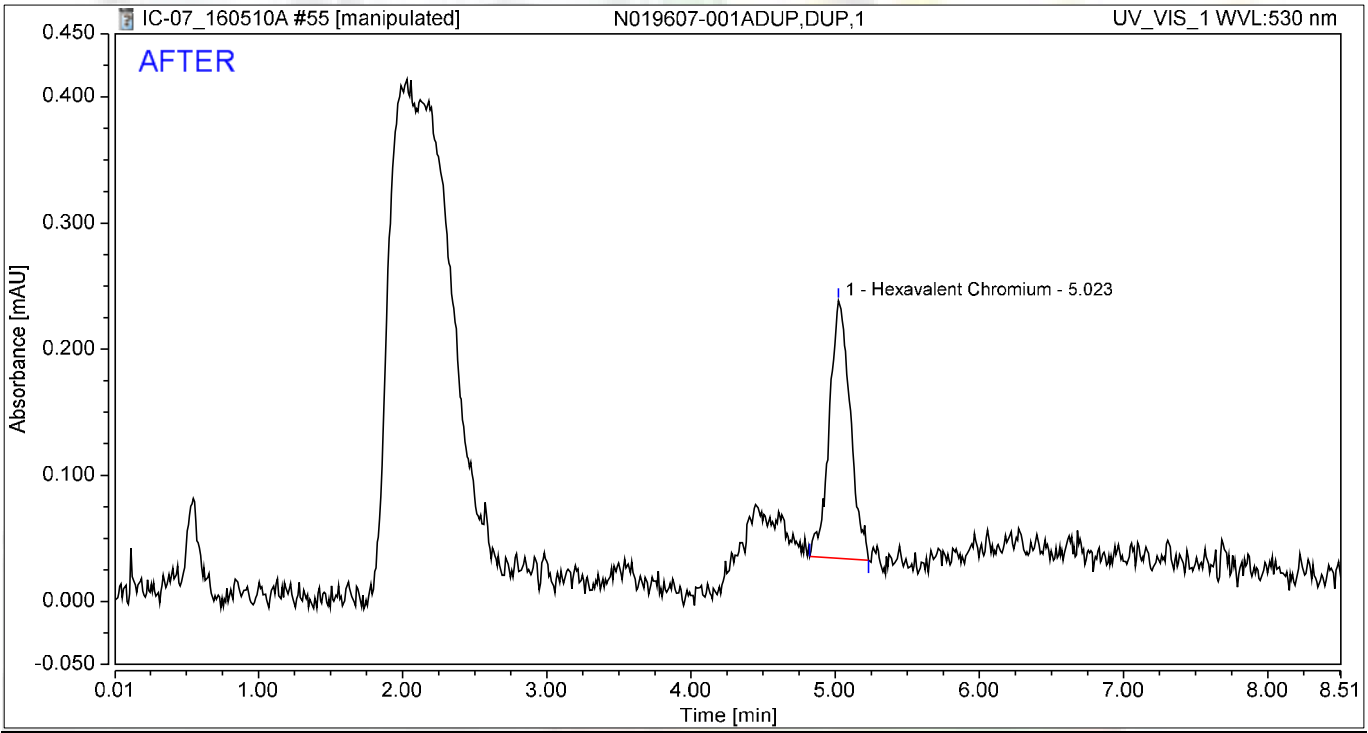
JAS 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.034	0.204	100.00	100.00	0.1453
Total:			**0.034**	**0.204**	**100.00**	**100.00**	

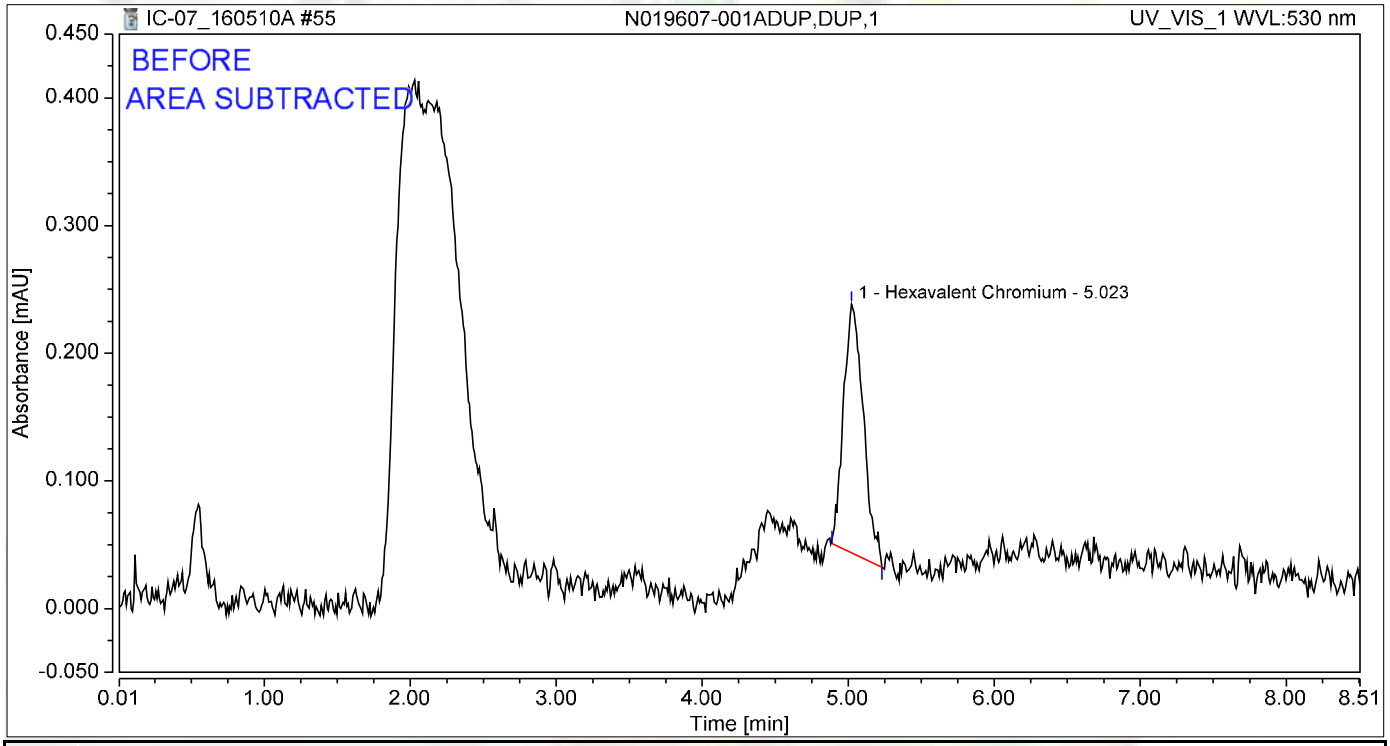
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.031	0.195	100.00	100.00	0.1300
Total:			**0.031**	**0.195**	**100.00**	**100.00**	

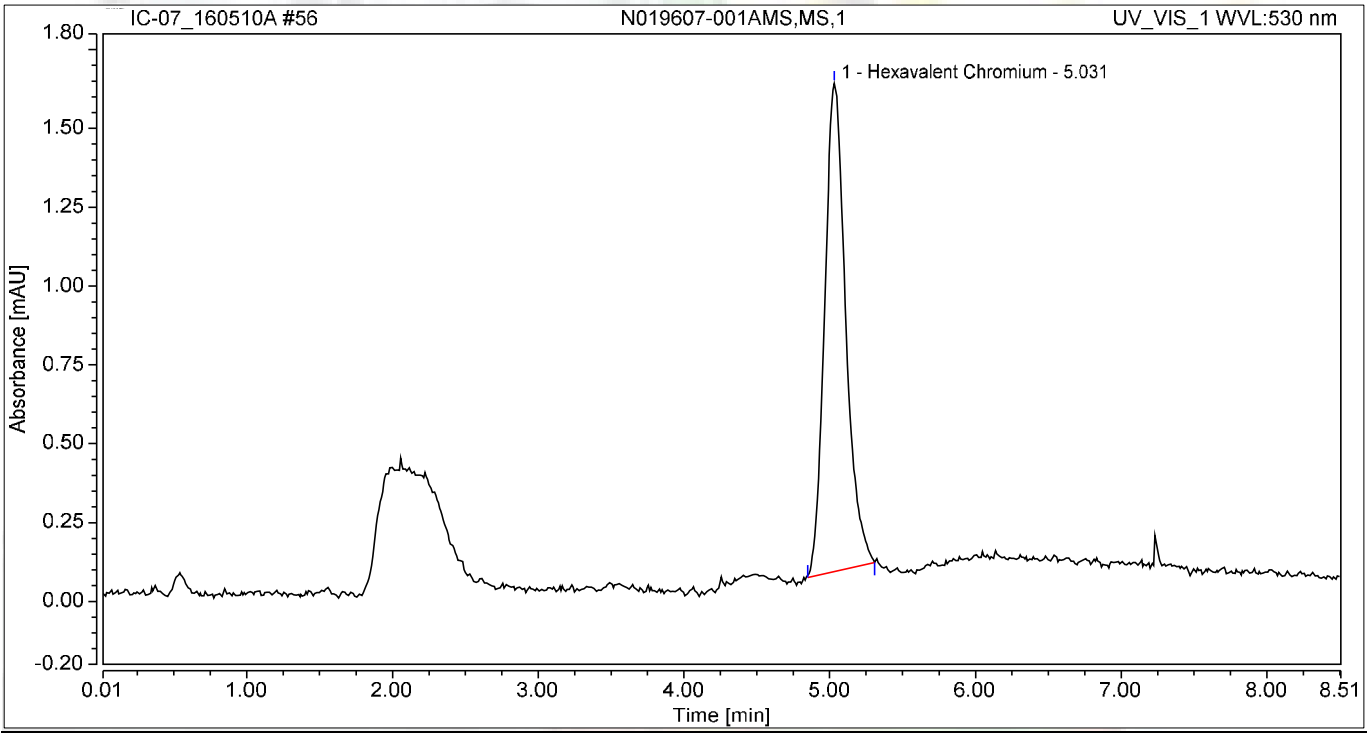
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

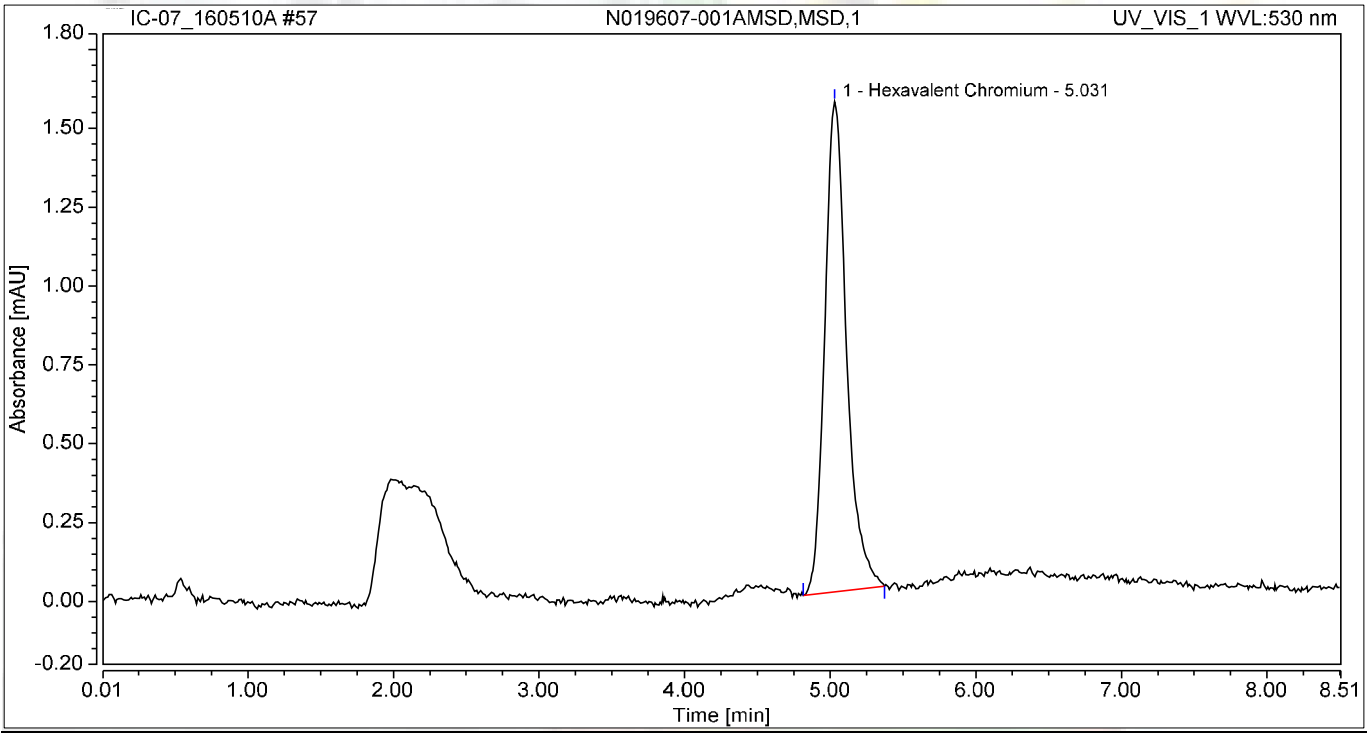
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.259	1.548	100.00	100.00	1.1021
Total:			**0.259**	**1.548**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

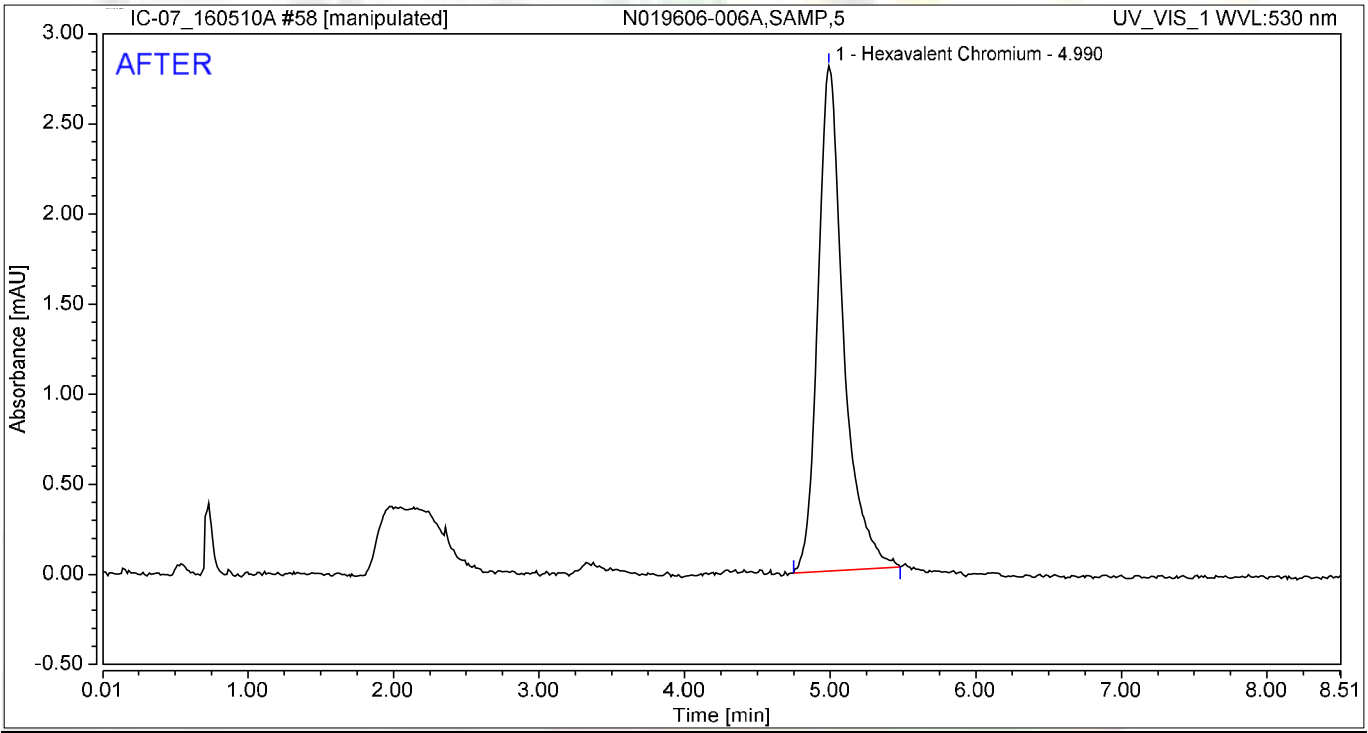
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.270	1.555	100.00	100.00	1.1468
Total:			**0.270**	**1.555**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.990	0.571	2.803	100.00	100.00	2.4251
Total:			**0.571**	**2.803**	**100.00**	**100.00**	

5/16/2016

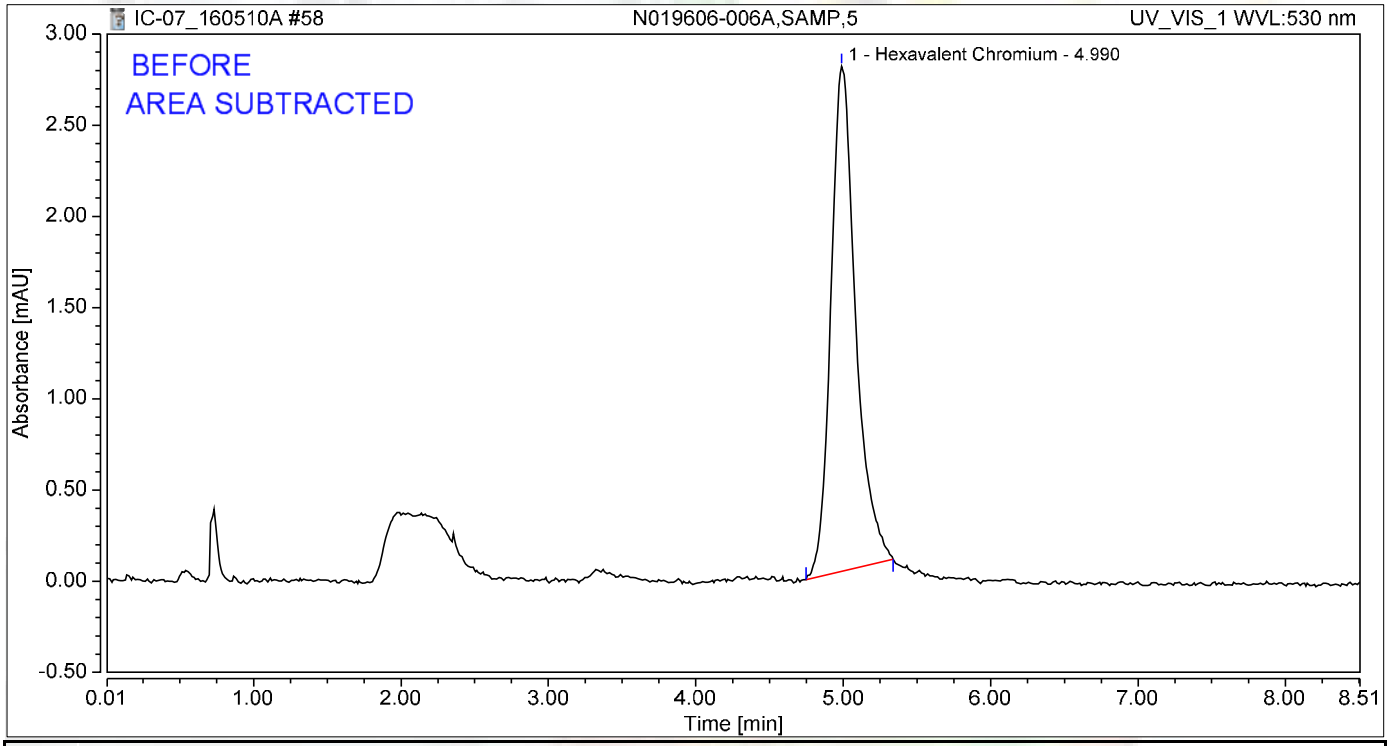
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.990	0.540	2.768	100.00	100.00	2.2941
Total:			**0.540**	**2.768**	**100.00**	**100.00**	

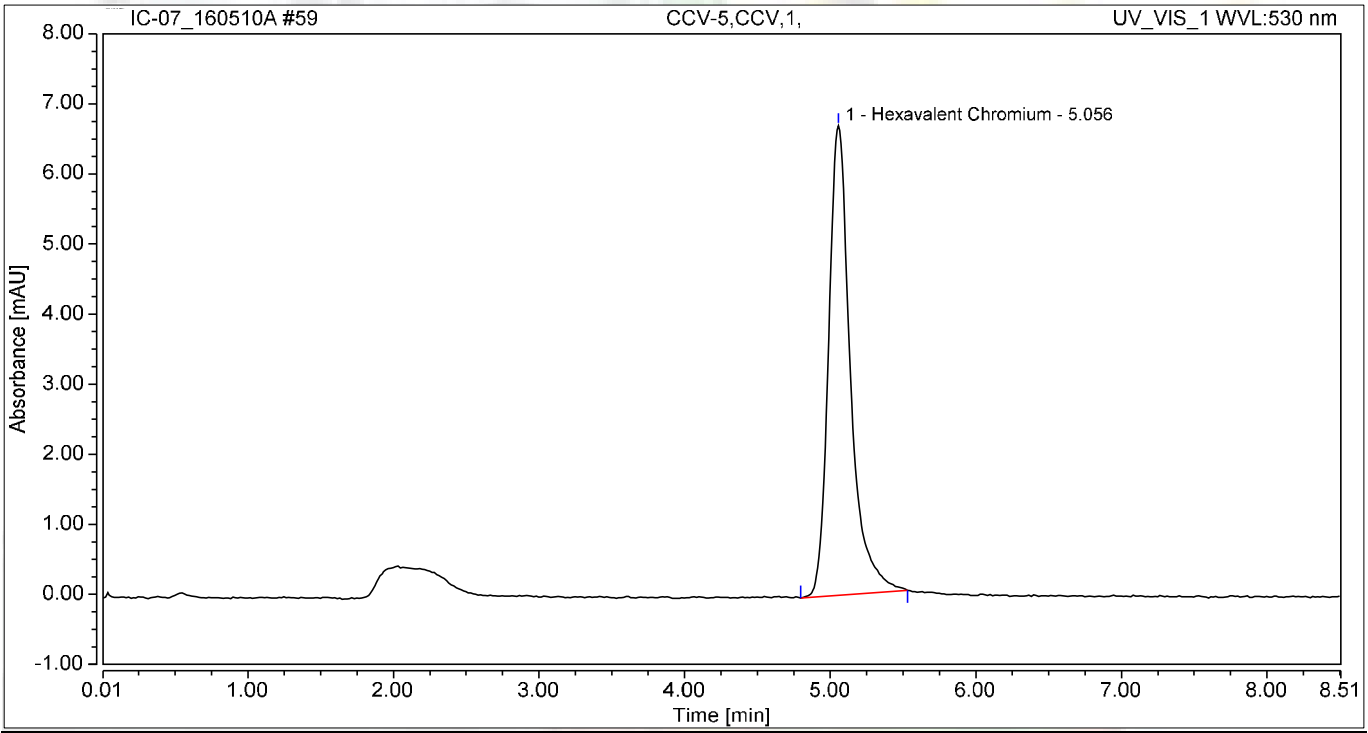
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

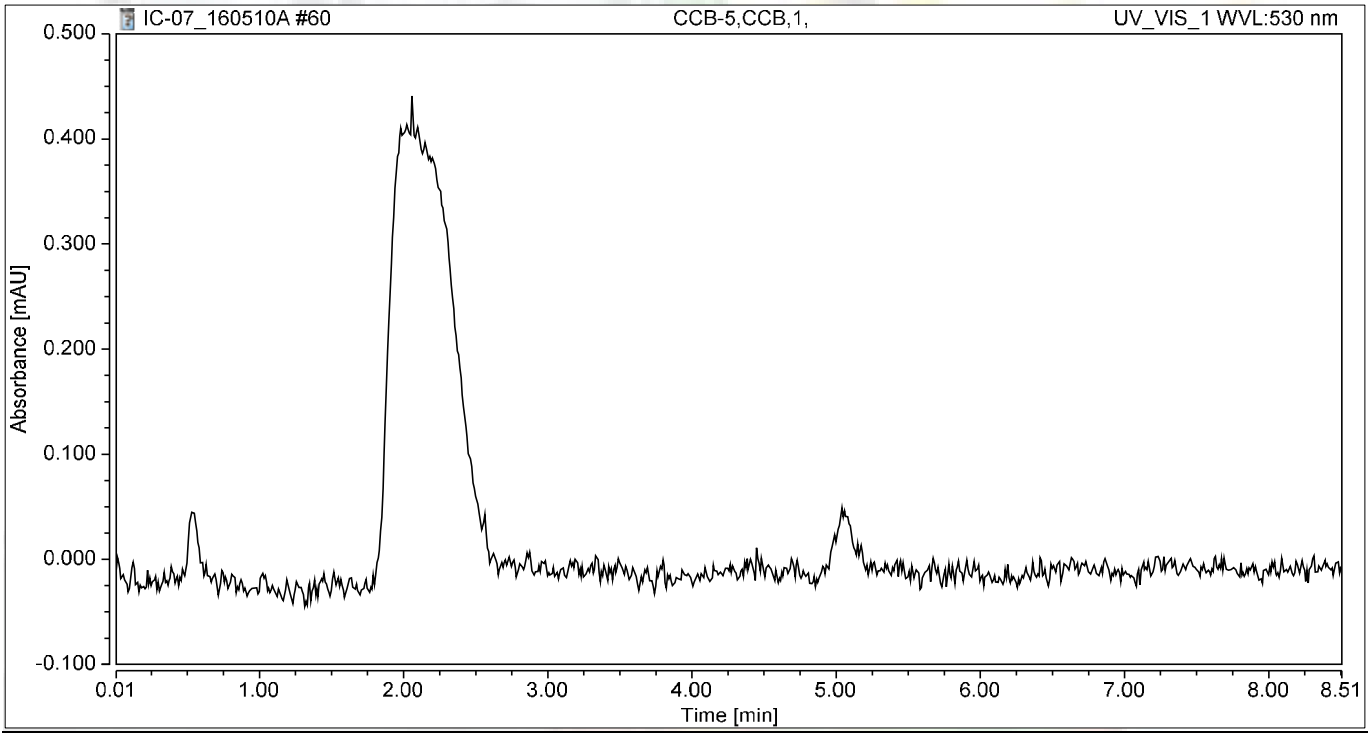
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.166	6.699	100.00	100.00	4.9532
Total:			**1.166**	**6.699**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

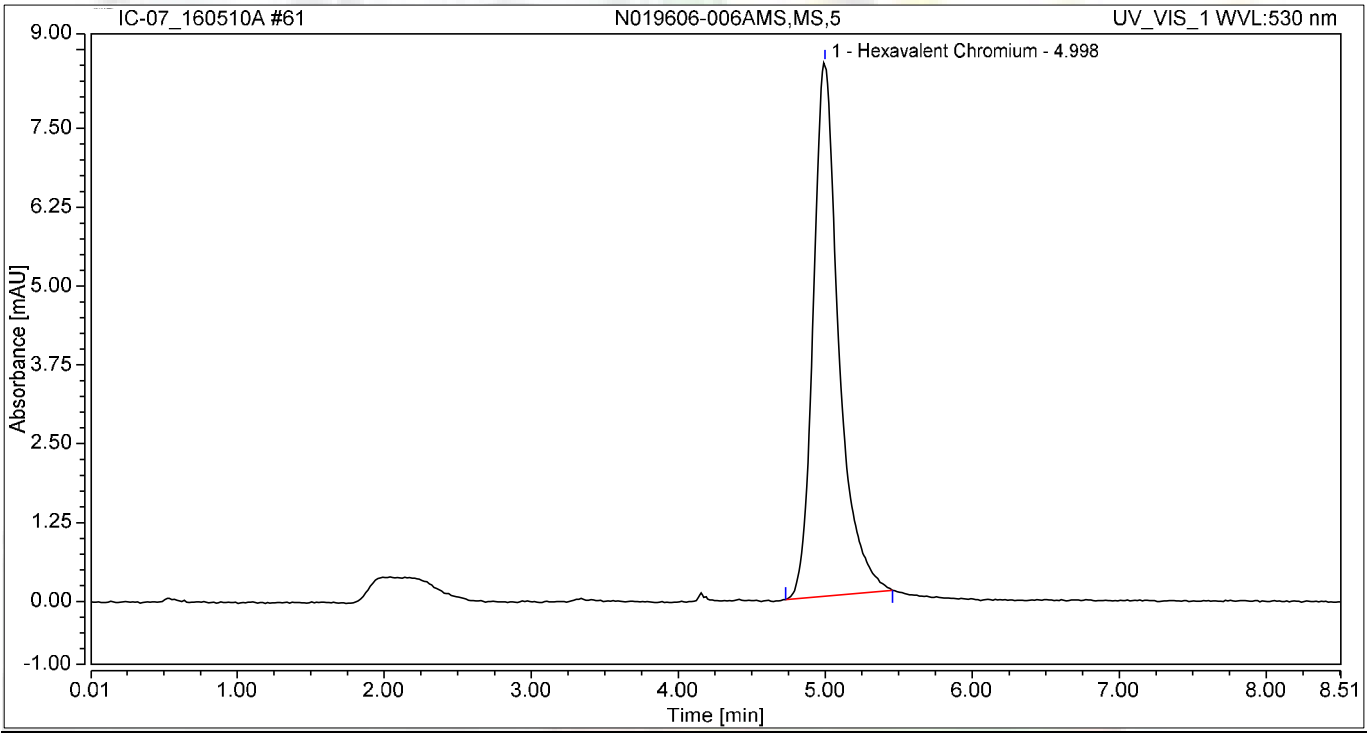
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

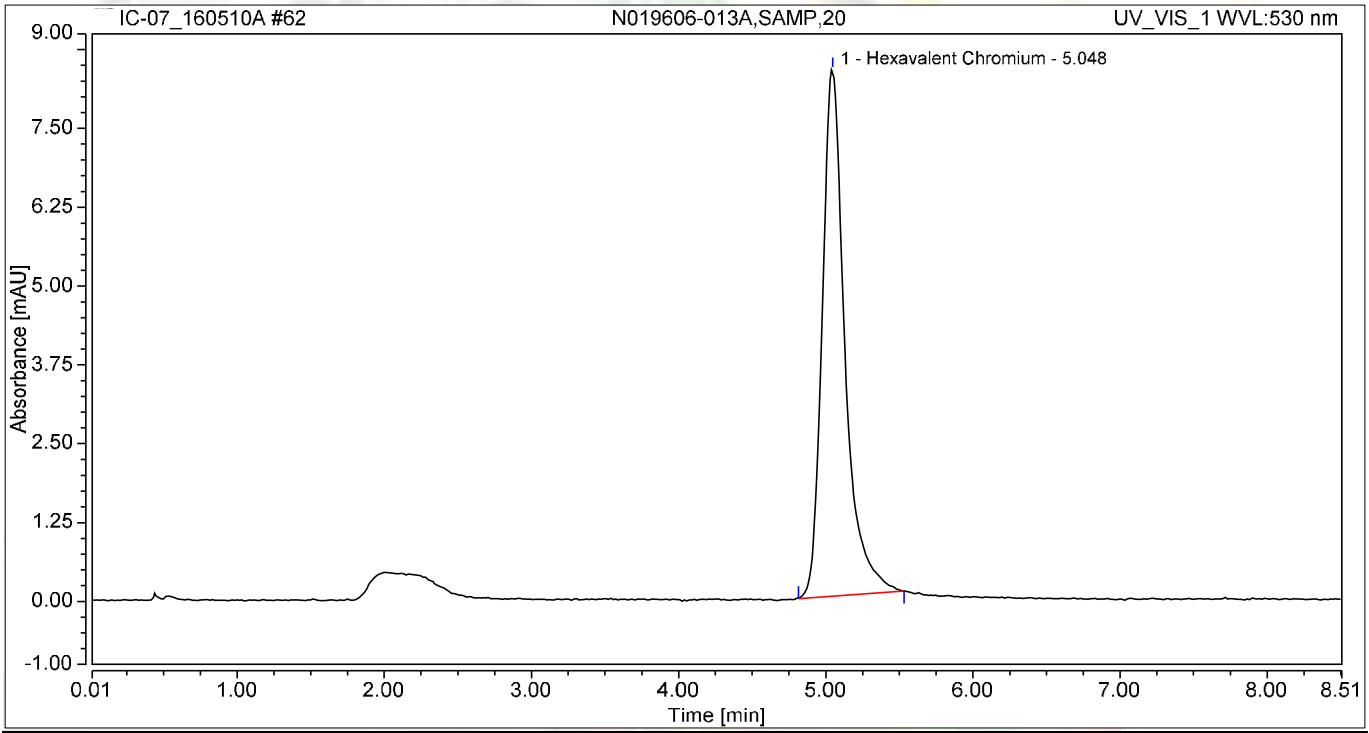
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.998	1.703	8.459	100.00	100.00	7.2350
Total:			**1.703**	**8.459**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-013A,SAMP,20**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

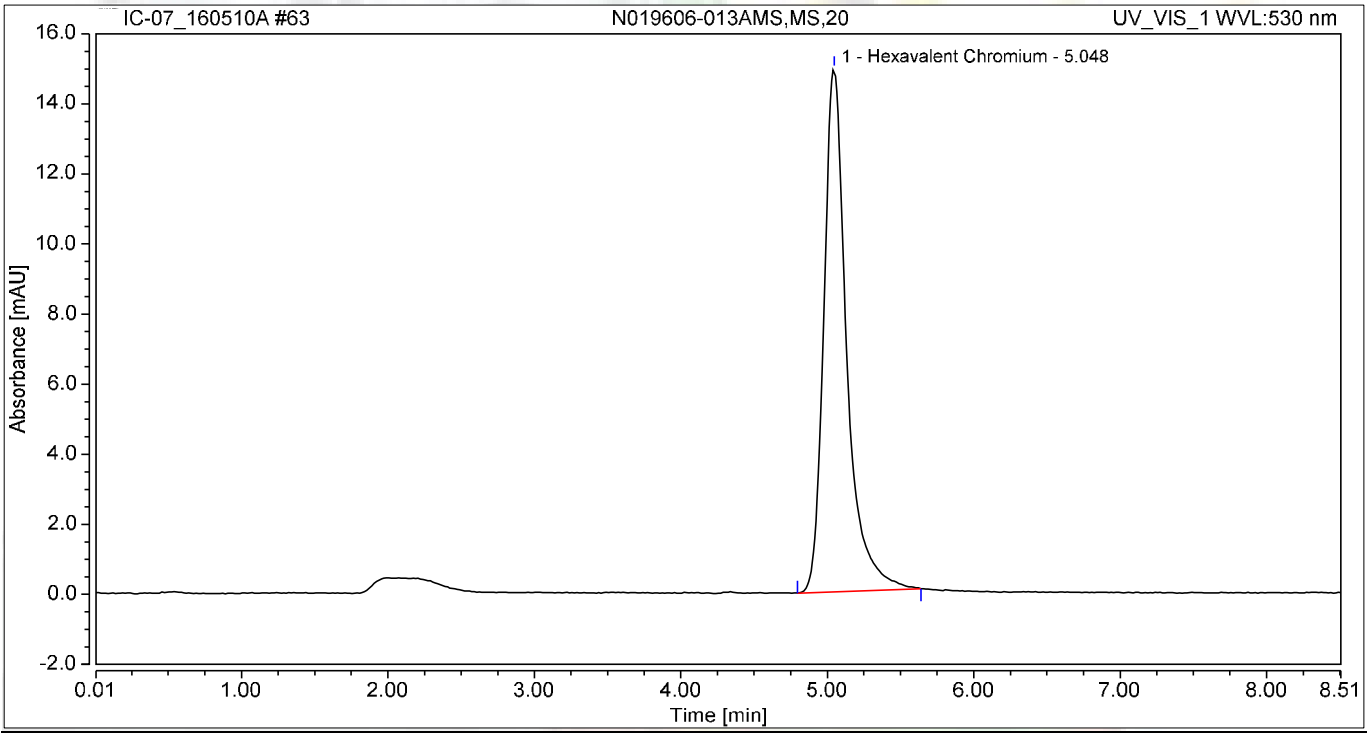
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	1.491	8.342	100.00	100.00	6.3347
Total:			**1.491**	**8.342**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-013AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

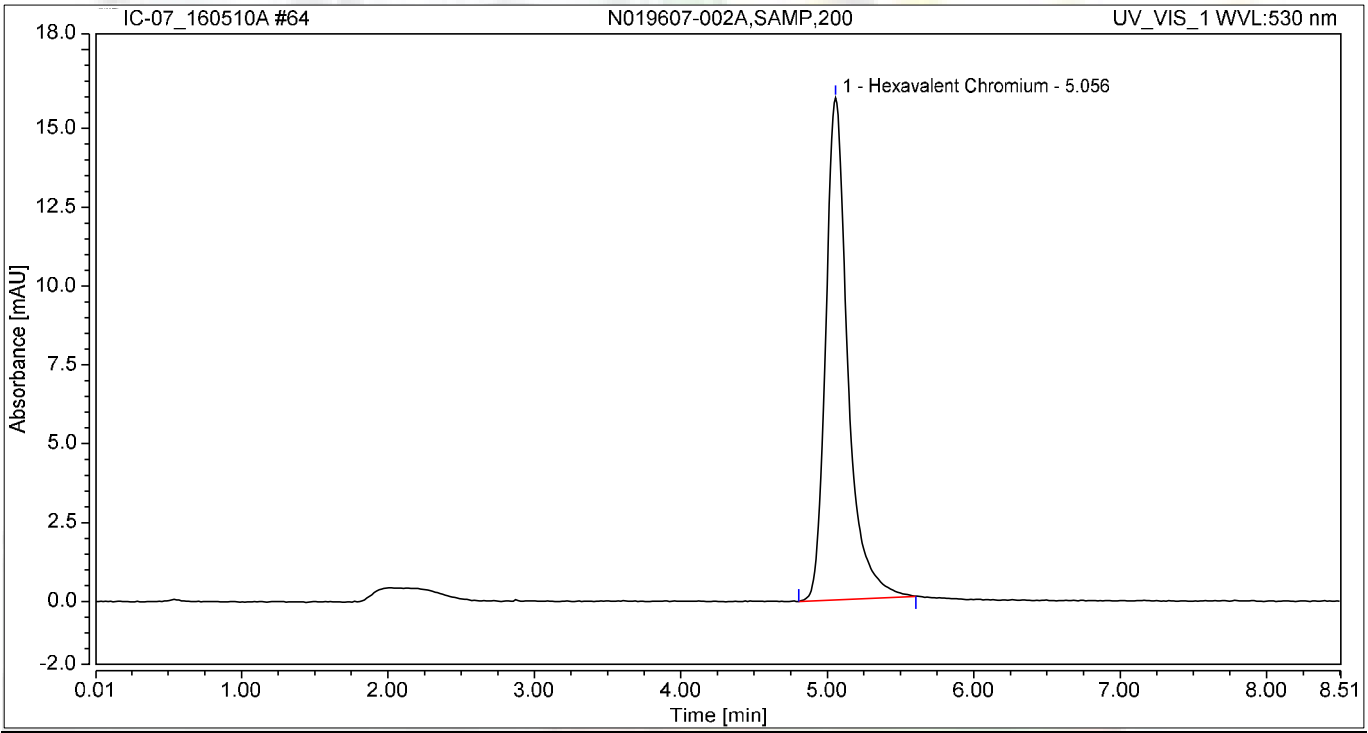
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	2.708	14.936	100.00	100.00	11.5022
Total:			**2.708**	**14.936**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-002A,SAMP,200**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

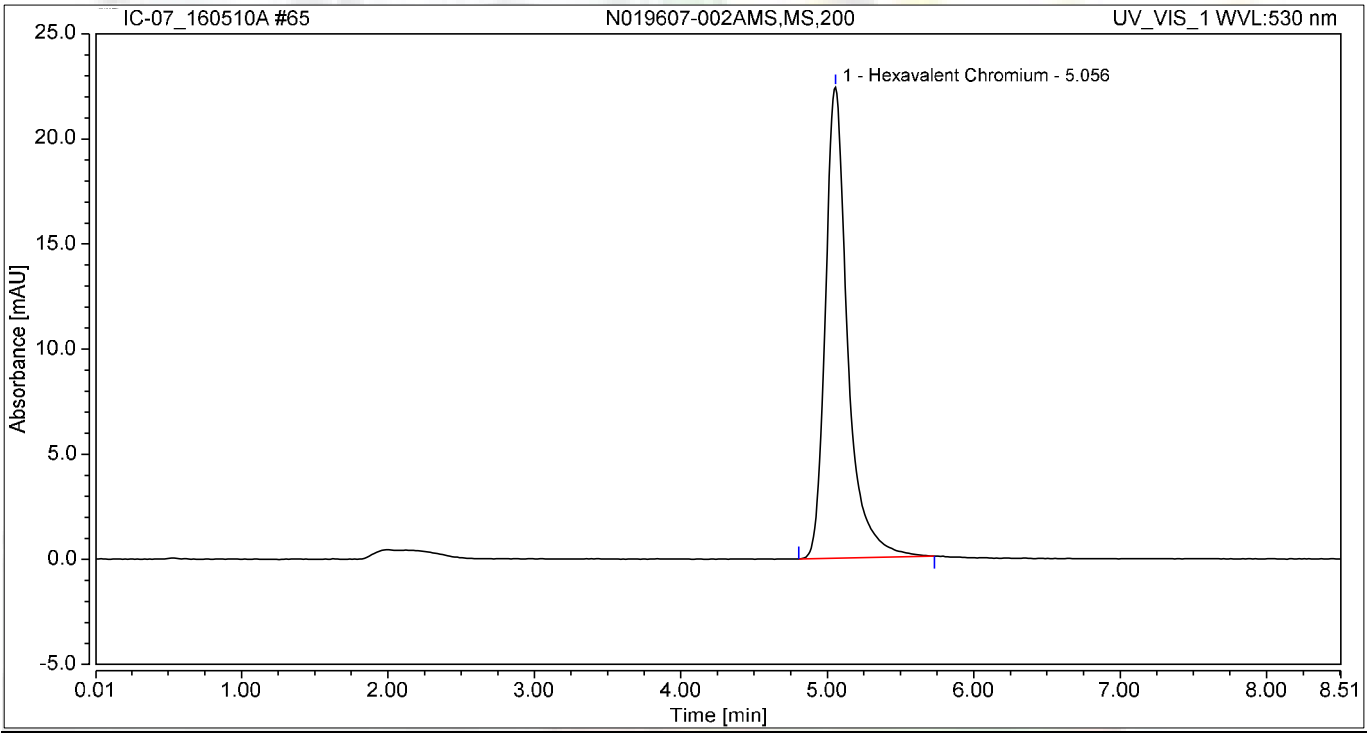
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.783	15.917	100.00	100.00	11.8192
Total:			**2.783**	**15.917**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-002AMS,MS,200**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

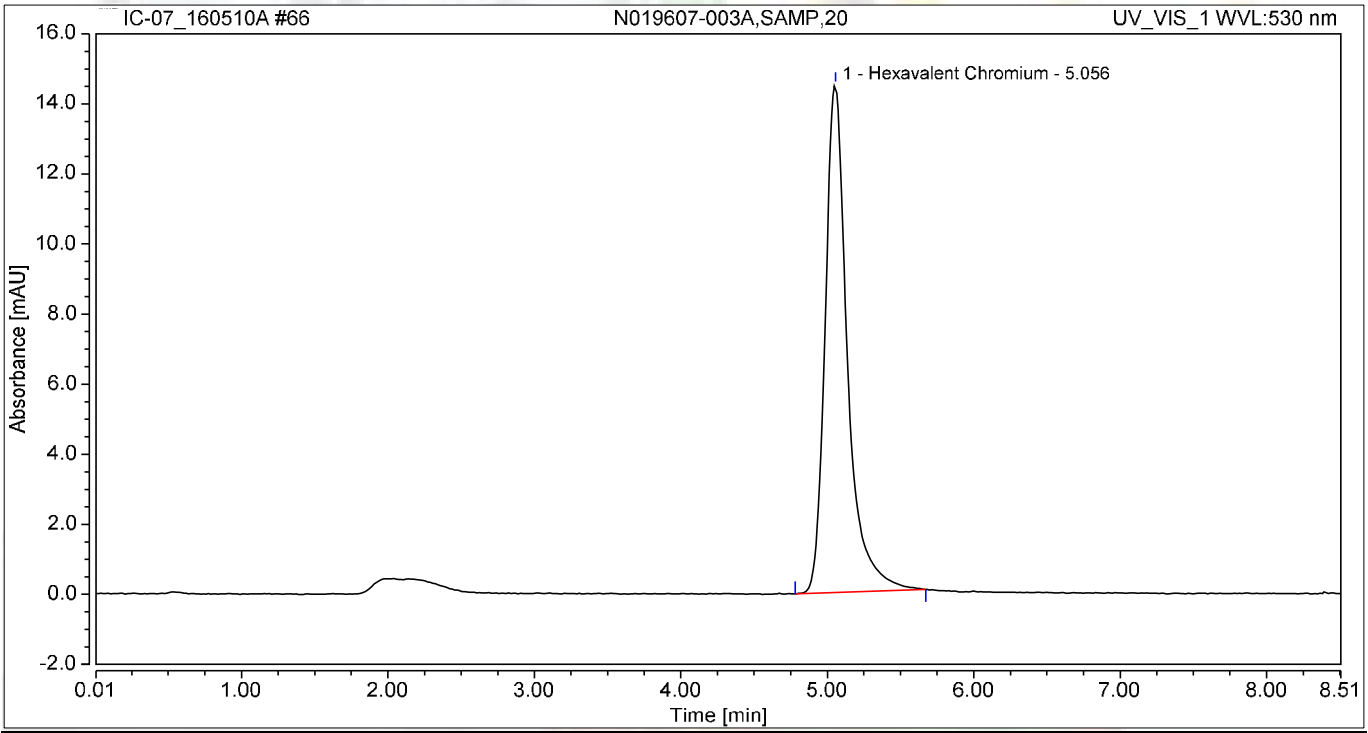
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	3.950	22.416	100.00	100.00	16.7776
Total:			**3.950**	**22.416**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-003A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

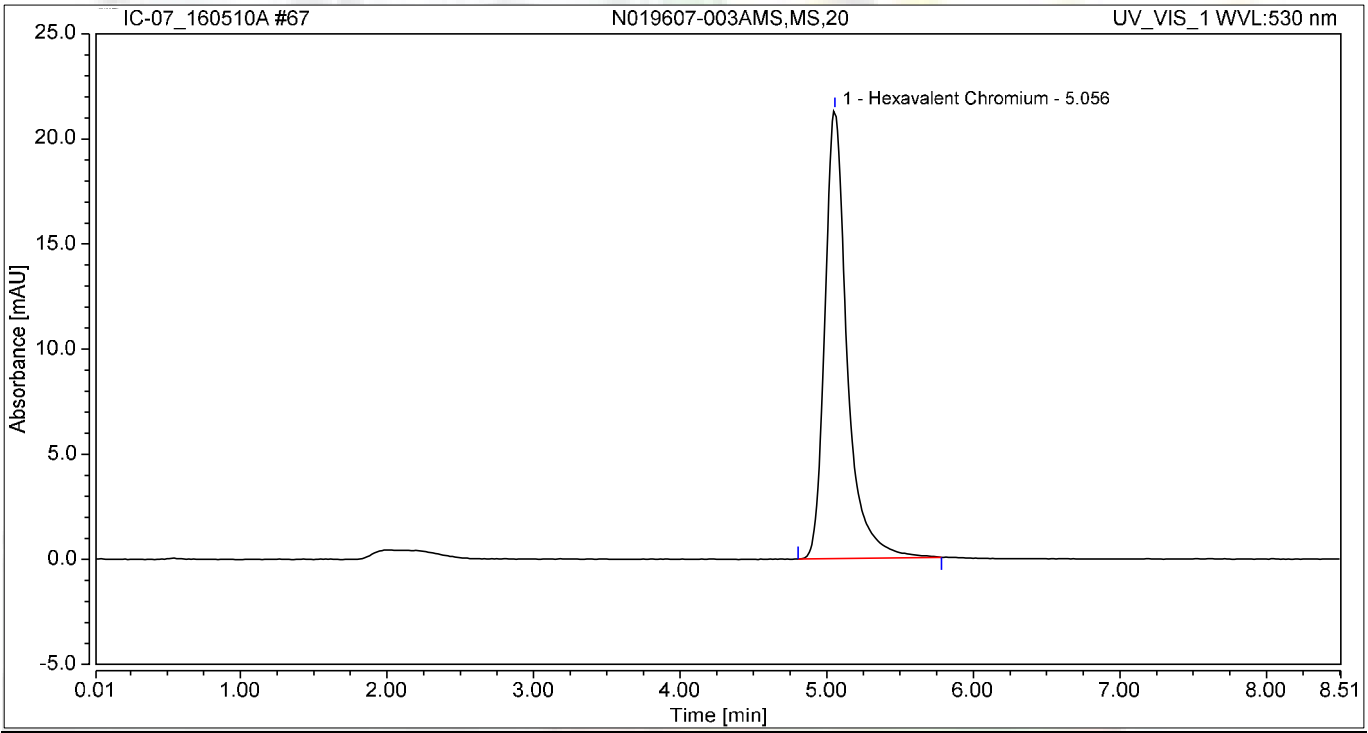
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.559	14.493	100.00	100.00	10.8700
Total:			**2.559**	**14.493**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-003AMS,MS,20**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

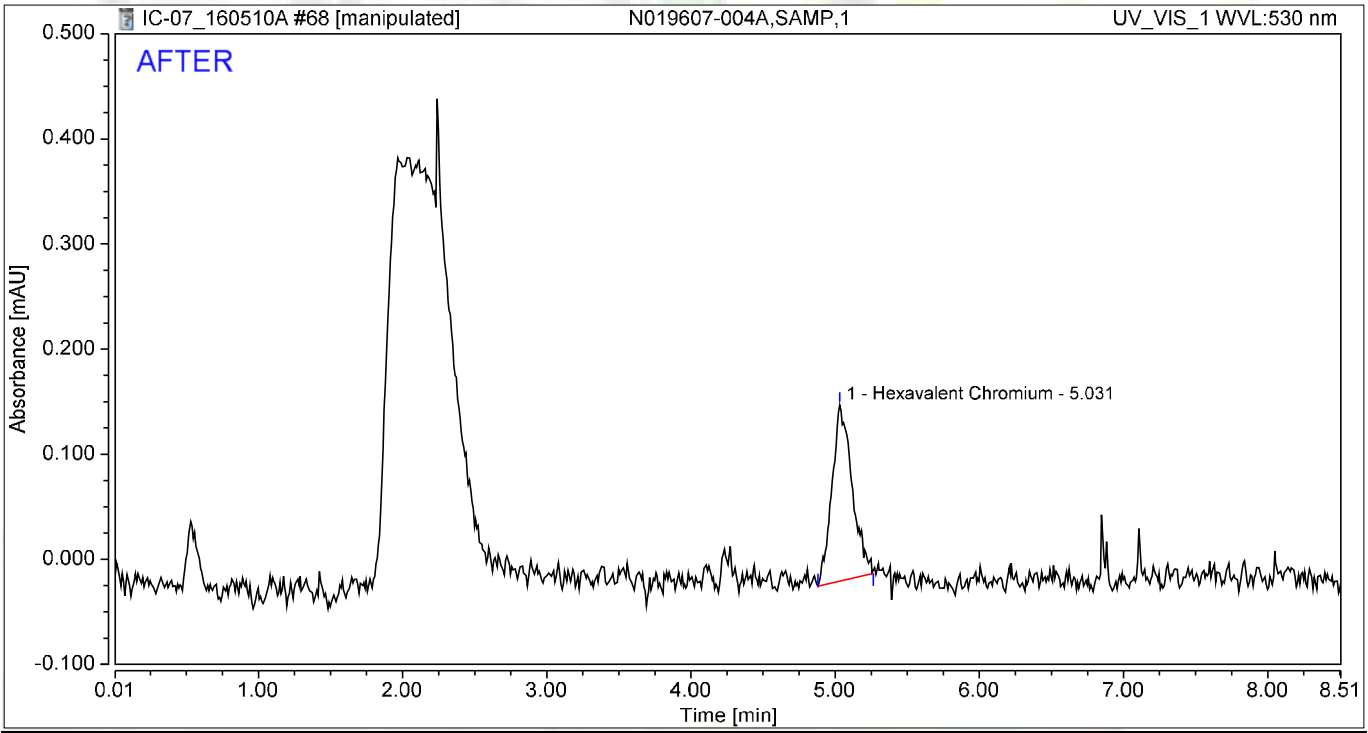
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	3.756	21.344	100.00	100.00	15.9556
Total:			**3.756**	**21.344**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.027	0.168	100.00	100.00	0.1151
Total:			**0.027**	**0.168**	**100.00**	**100.00**	

5/16/2016

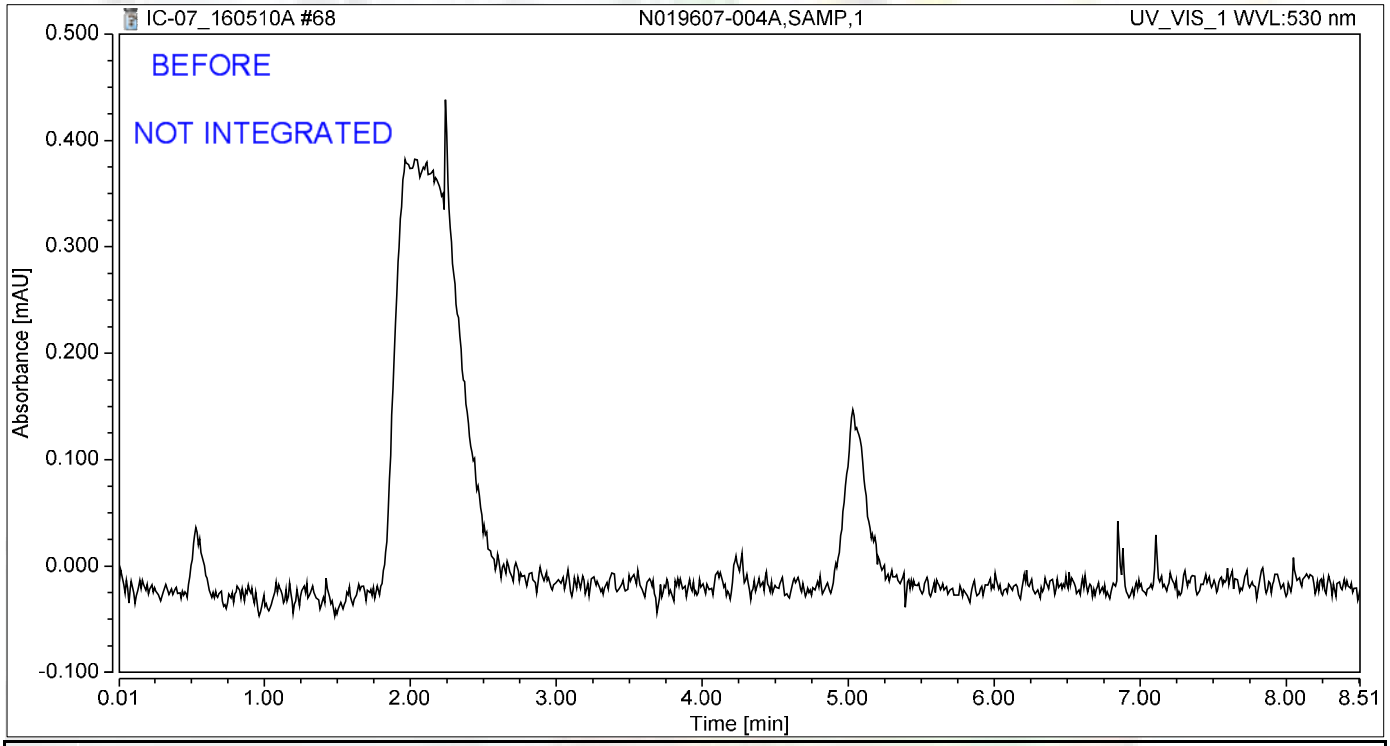
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

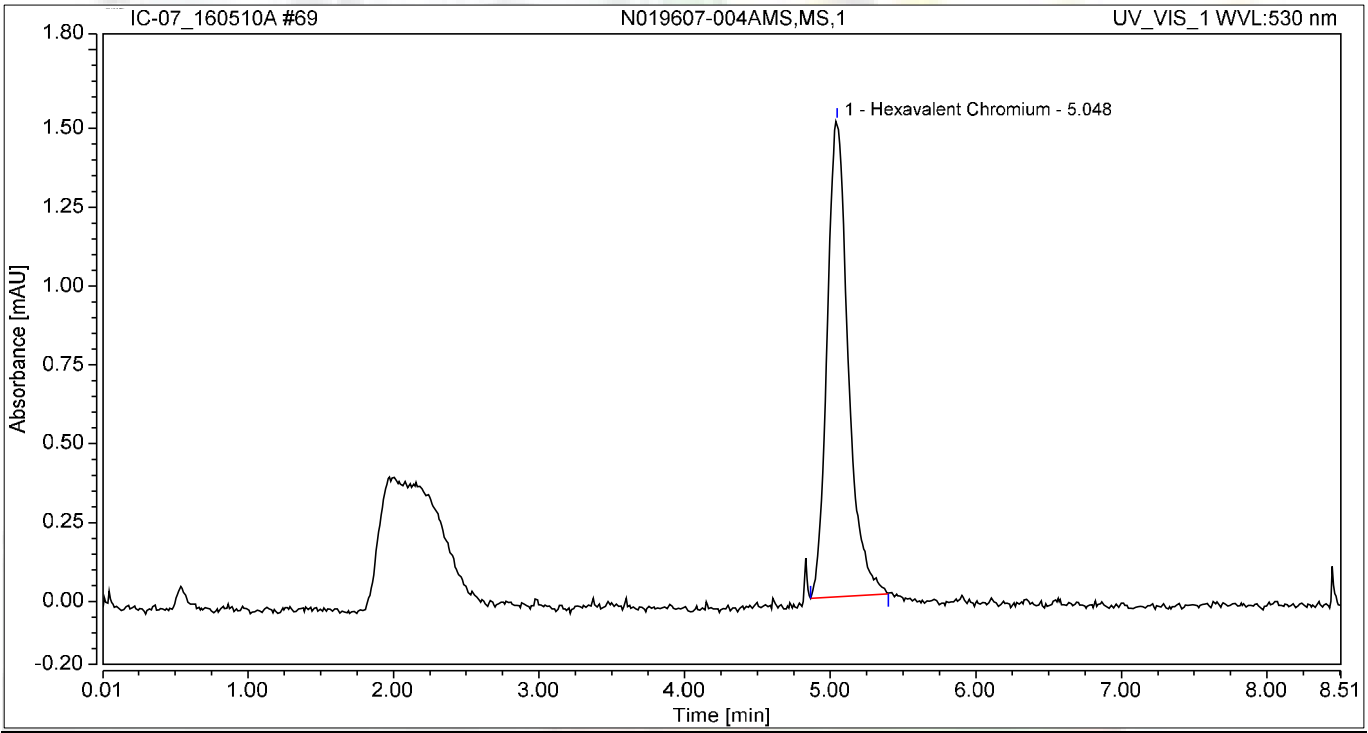
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

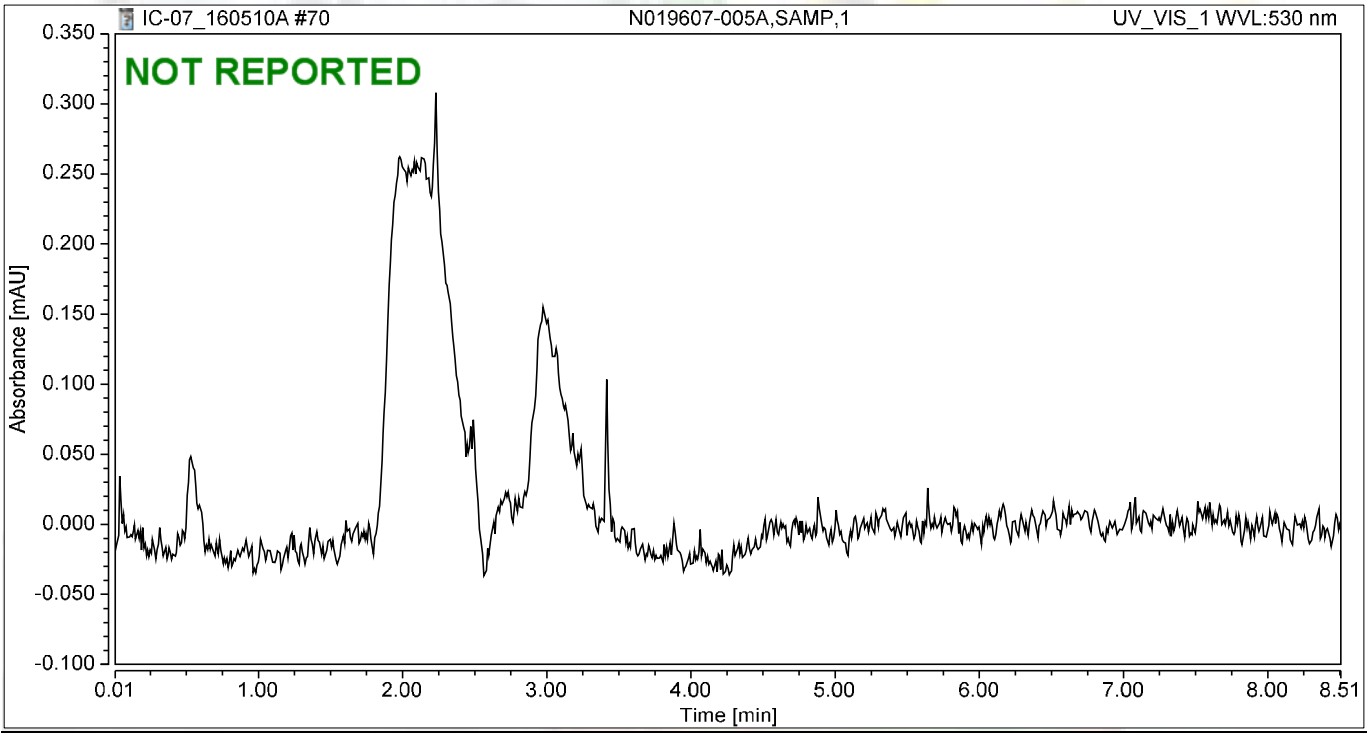
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	0.254	1.510	100.00	100.00	1.0809
Total:			**0.254**	**1.510**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

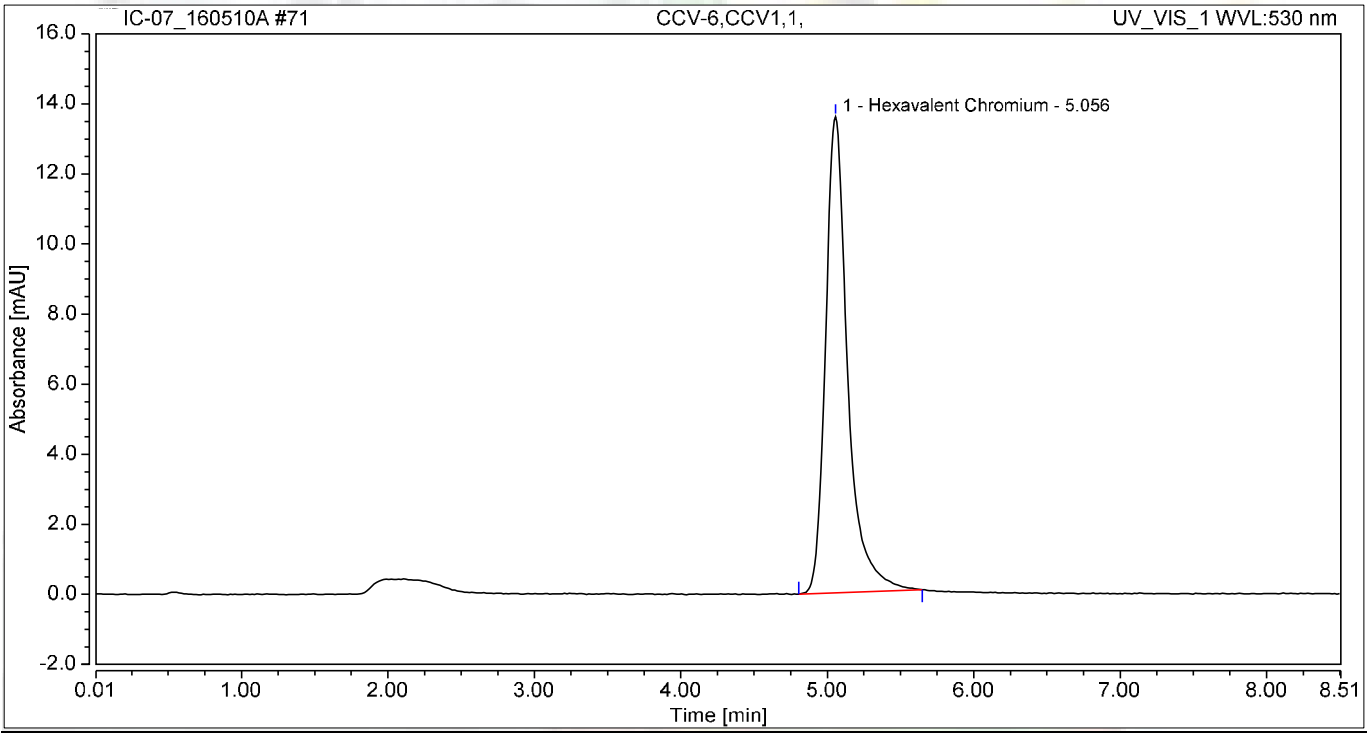
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

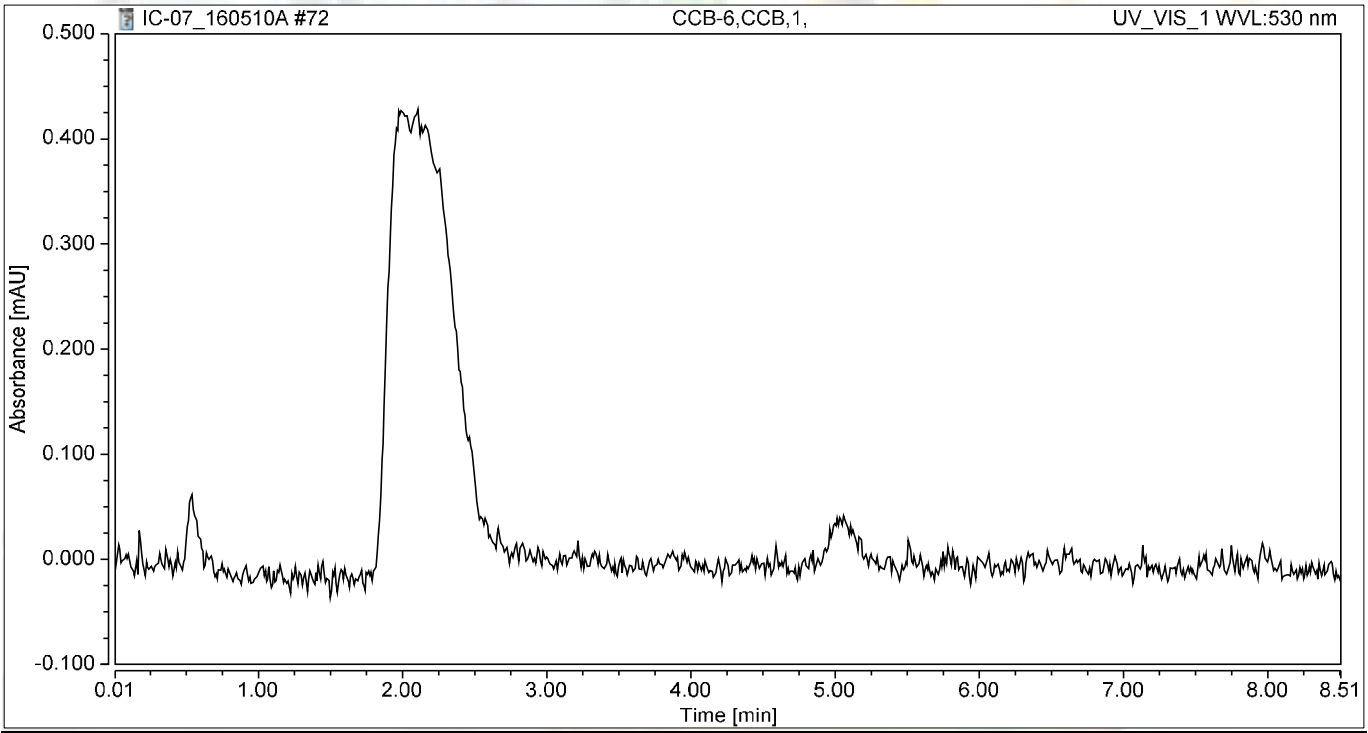
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.381	13.586	100.00	100.00	10.1120
Total:			**2.381**	**13.586**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

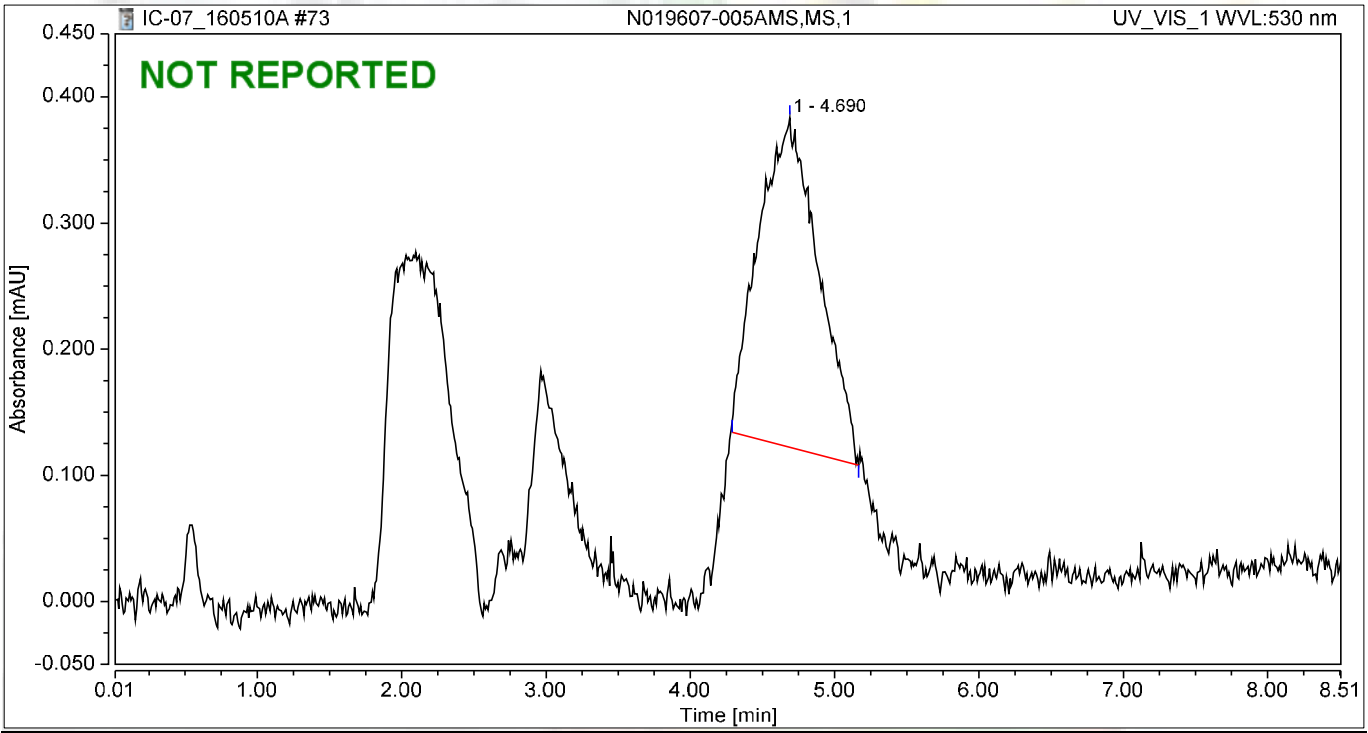
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

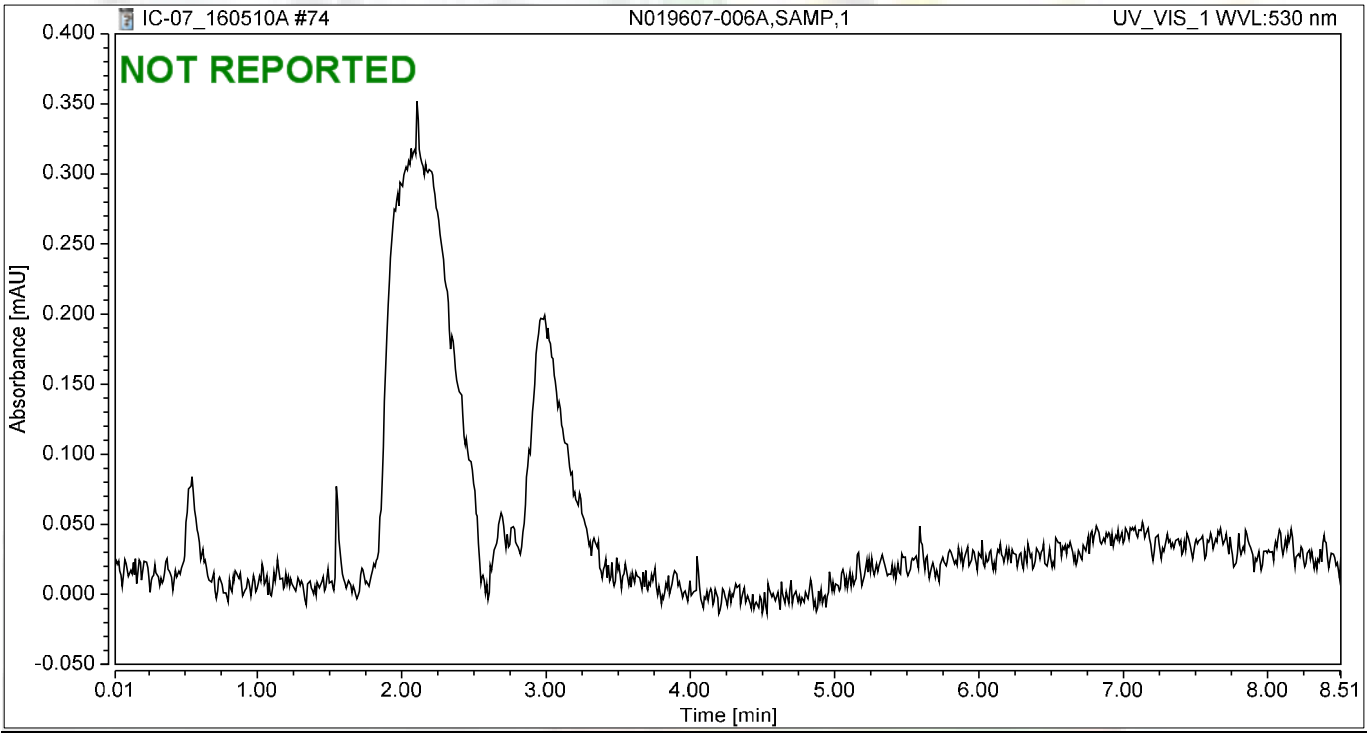
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.690	0.126	0.261	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.126**	**0.261**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

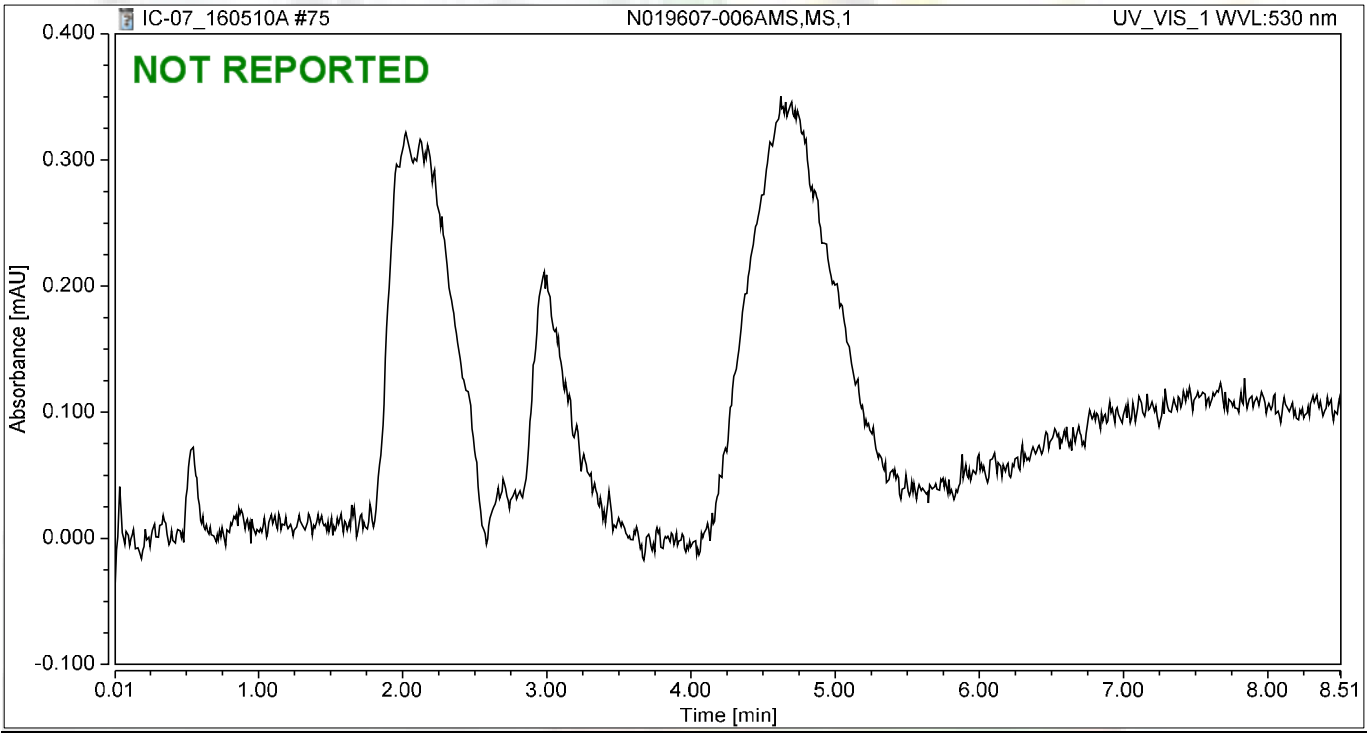
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

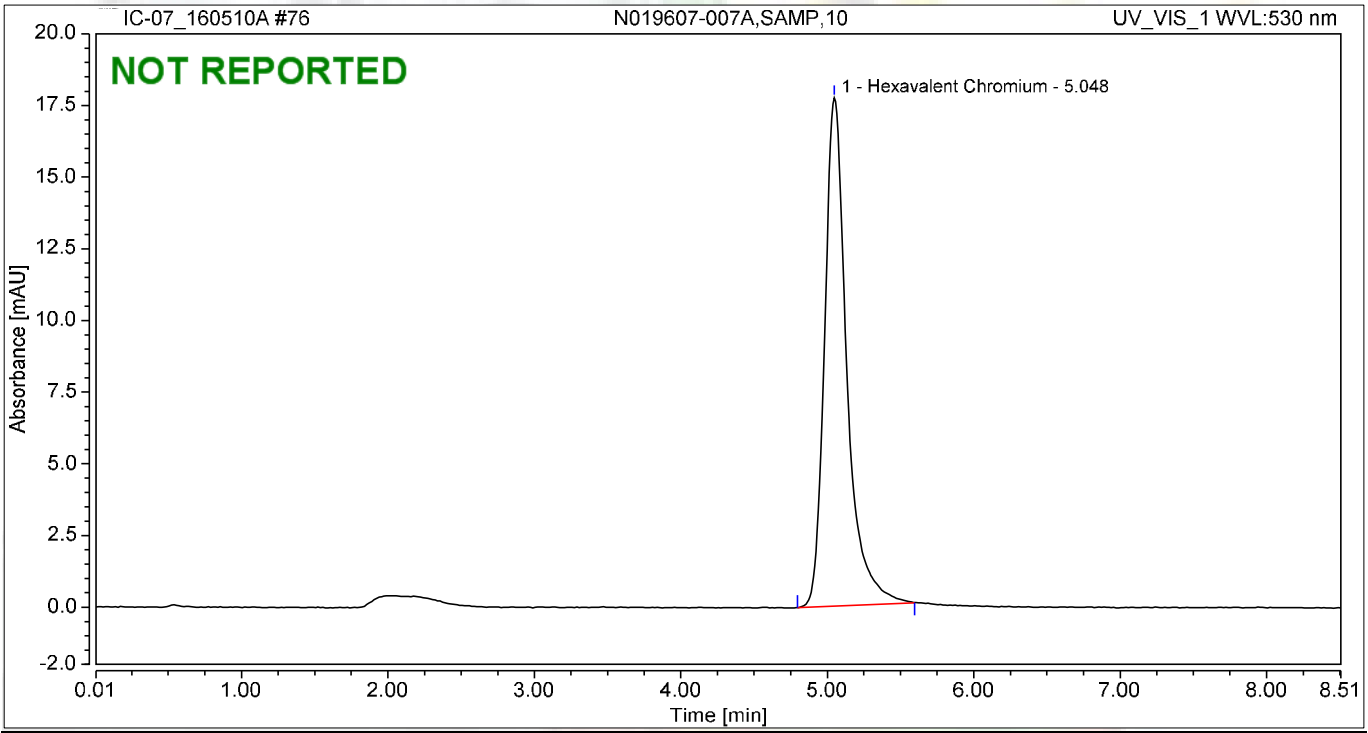
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-007A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

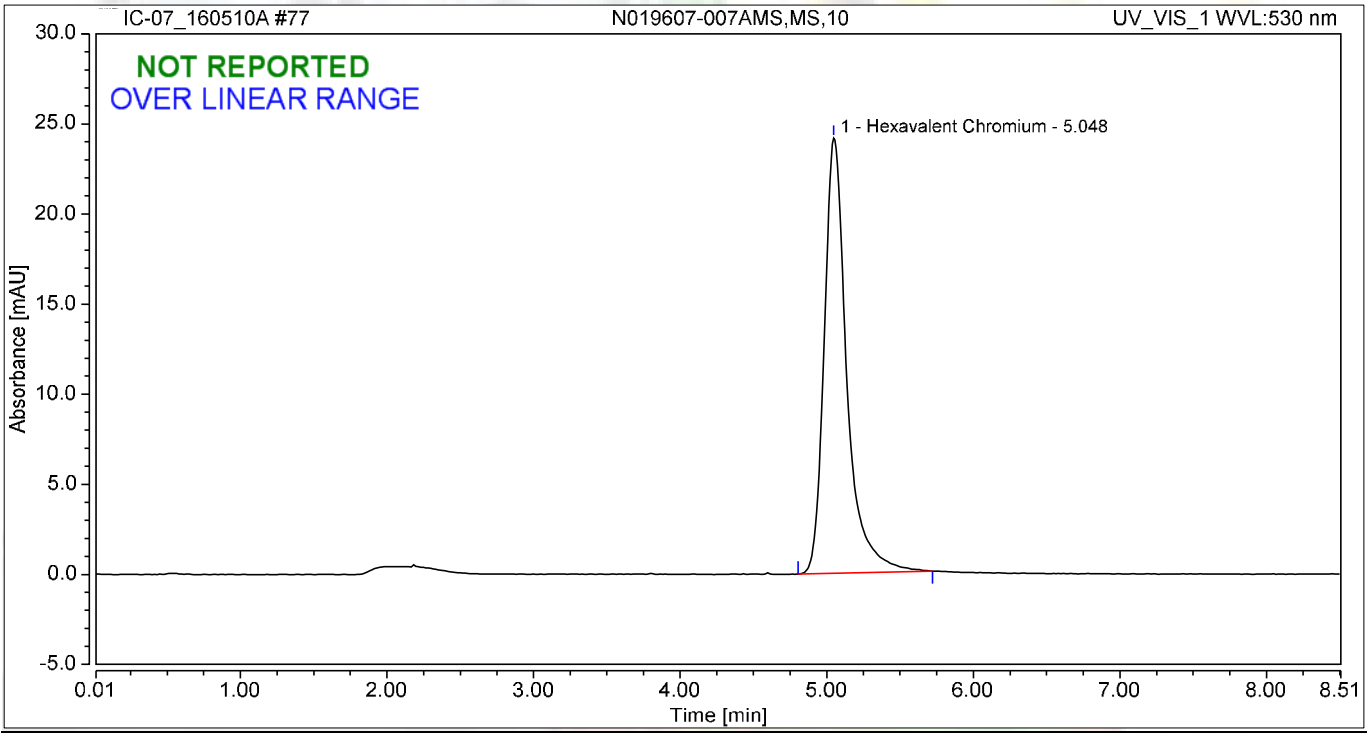
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	3.123	17.726	100.00	100.00	13.2632
Total:			**3.123**	**17.726**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-007AMS,MS,10**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

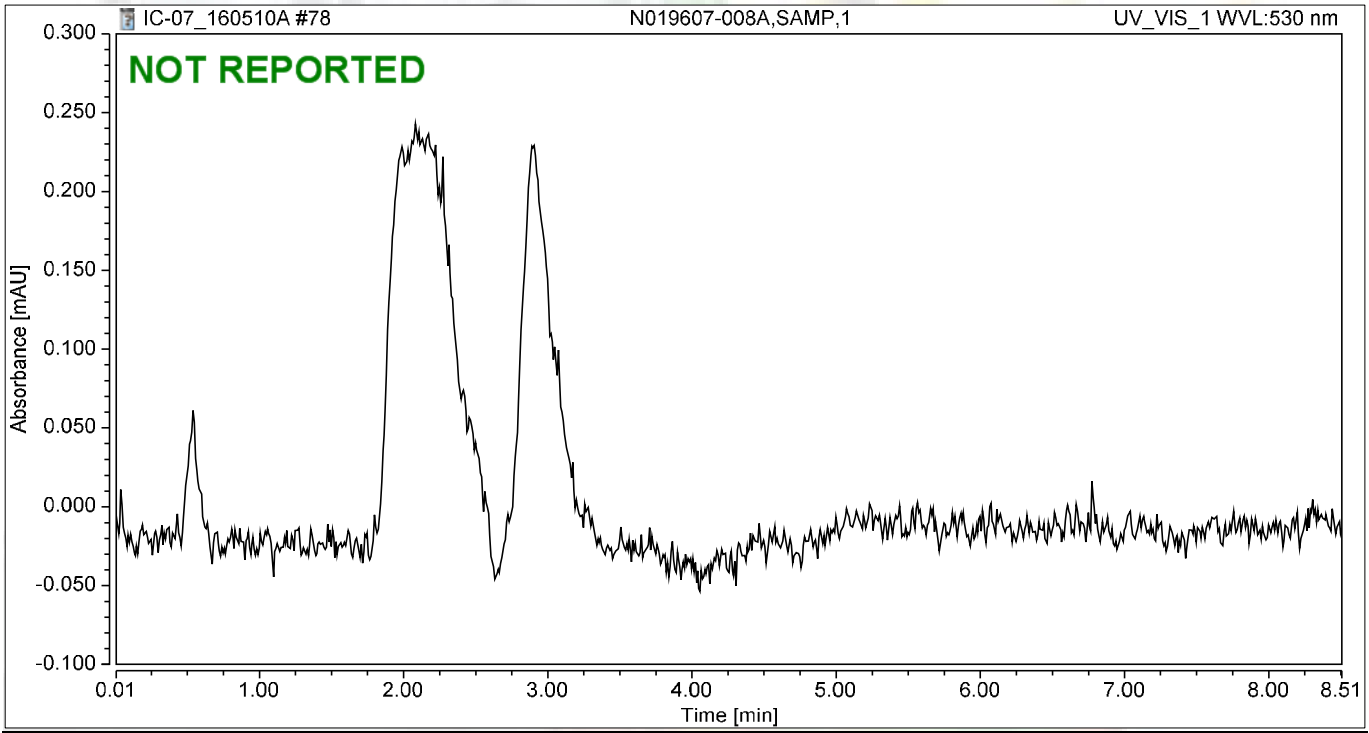
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	4.309	24.157	100.00	100.00	18.3018
Total:			**4.309**	**24.157**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

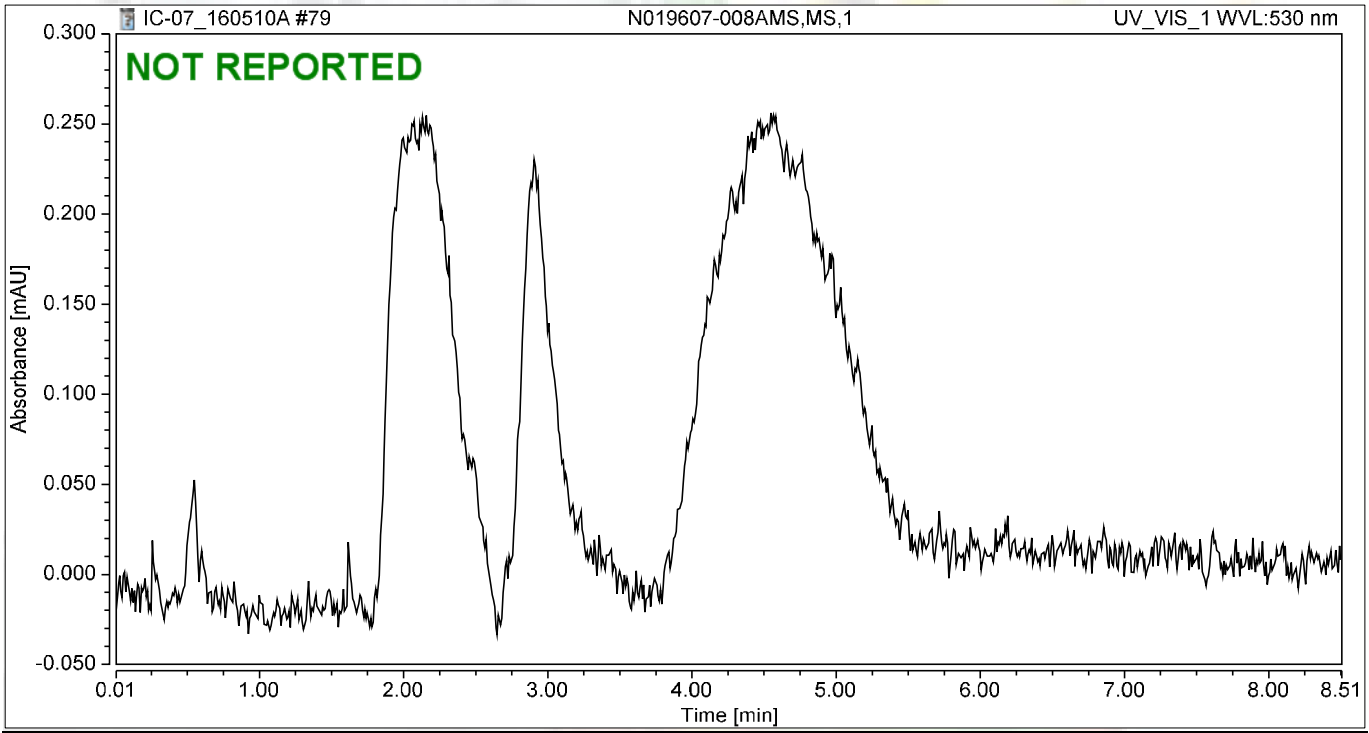
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

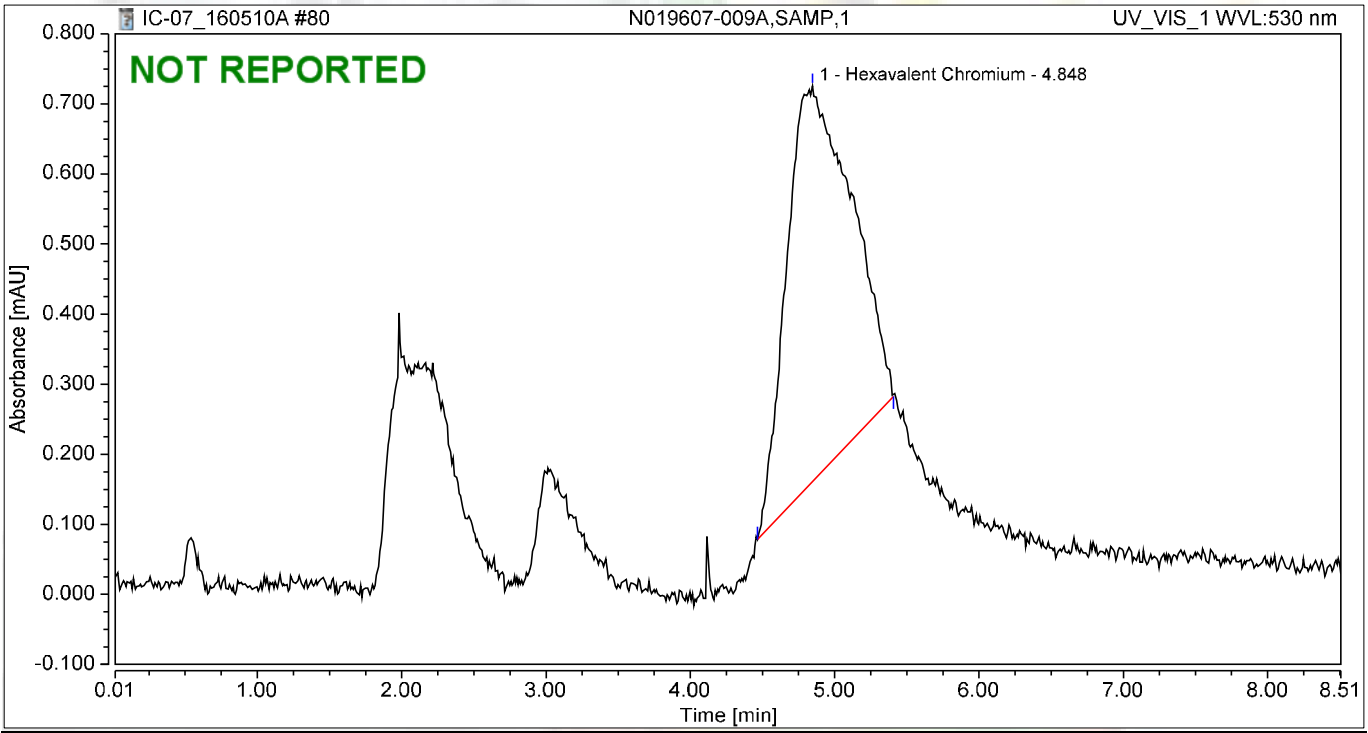
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

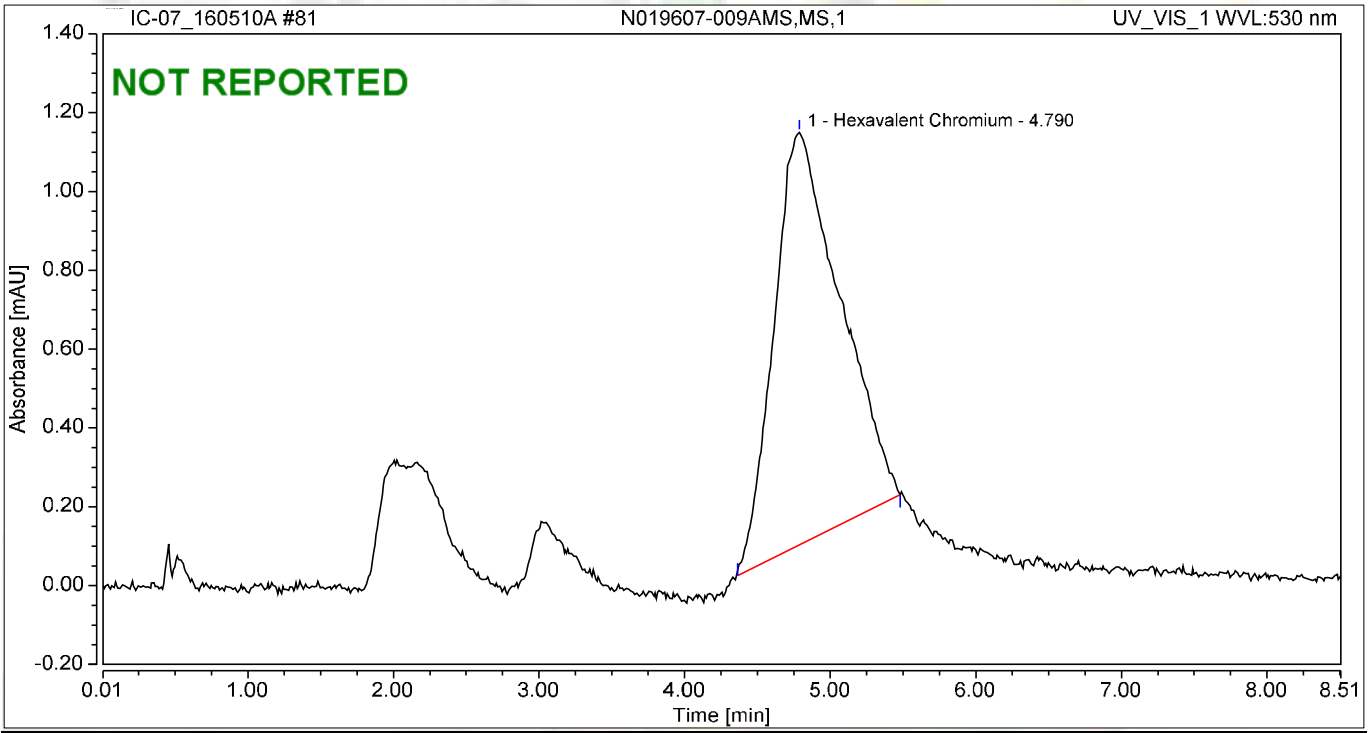
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.848	0.294	0.564	100.00	100.00	1.2487
Total:			**0.294**	**0.564**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

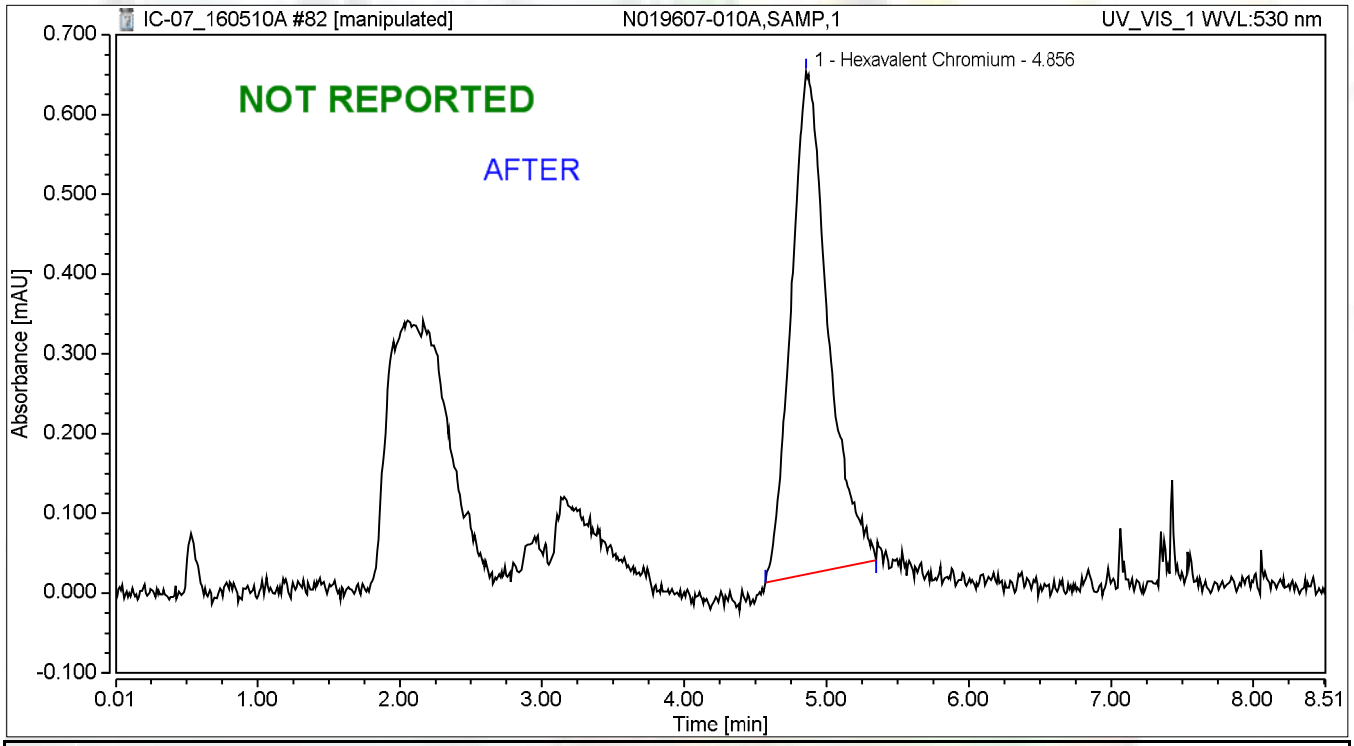
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.790	0.551	1.047	100.00	100.00	2.3411
Total:			**0.551**	**1.047**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.856	0.189	0.630	100.00	100.00	0.8038
Total:			**0.189**	**0.630**	**100.00**	**100.00**	

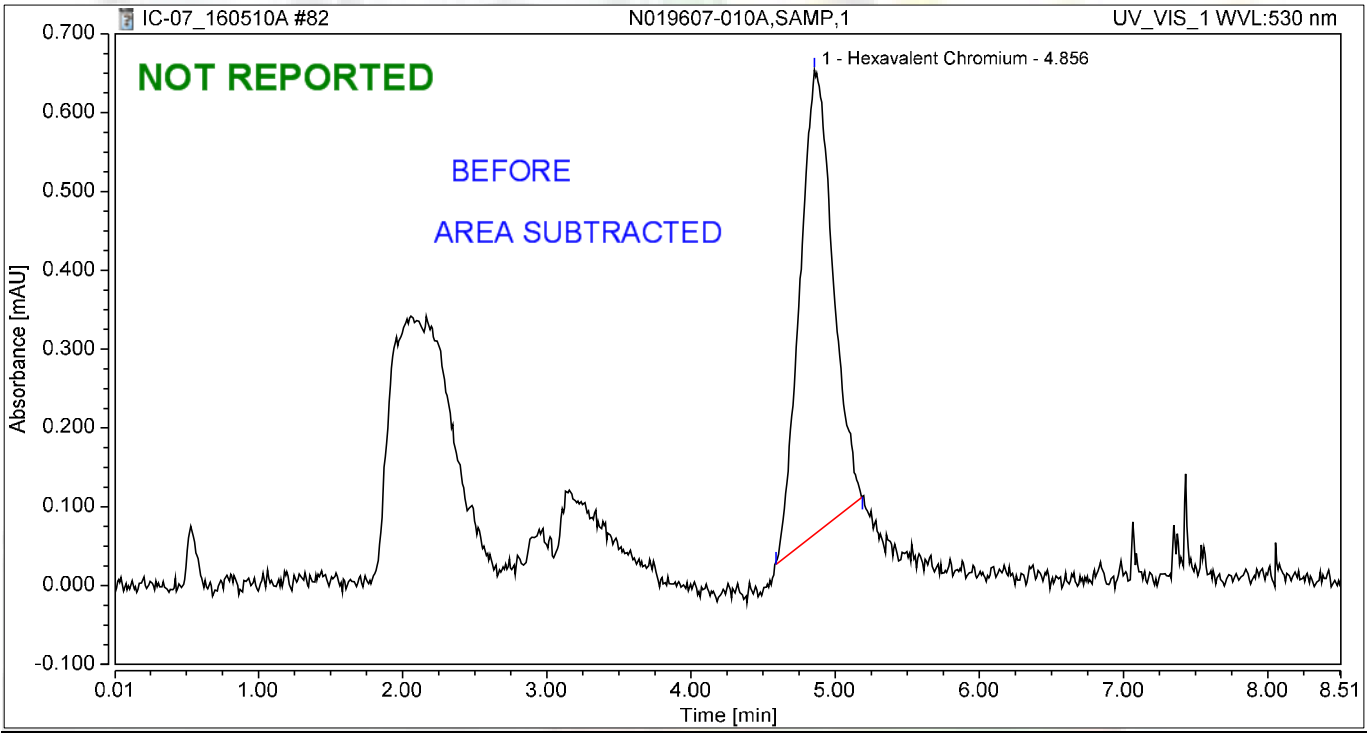
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.856	0.156	0.589	100.00	100.00	0.6624
Total:			**0.156**	**0.589**	**100.00**	**100.00**	

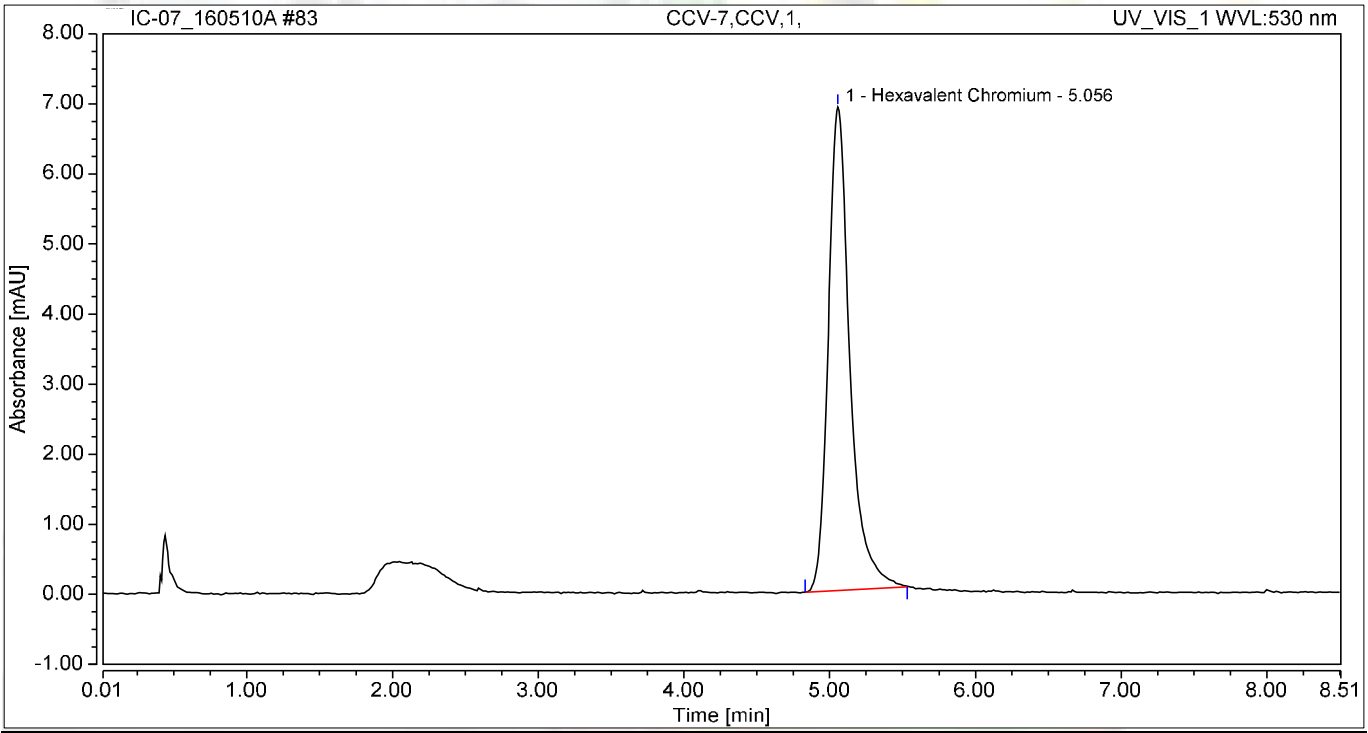
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

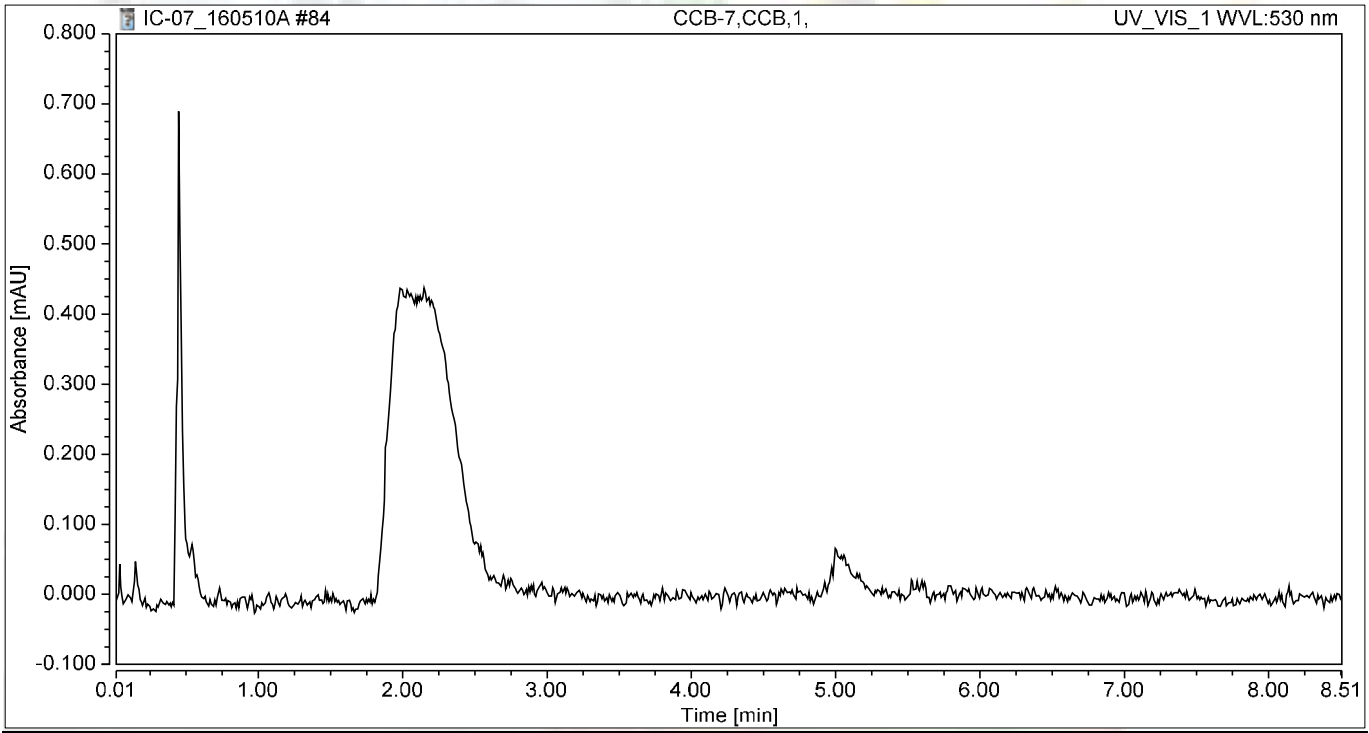
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.185	6.896	100.00	100.00	5.0332
Total:			**1.185**	**6.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

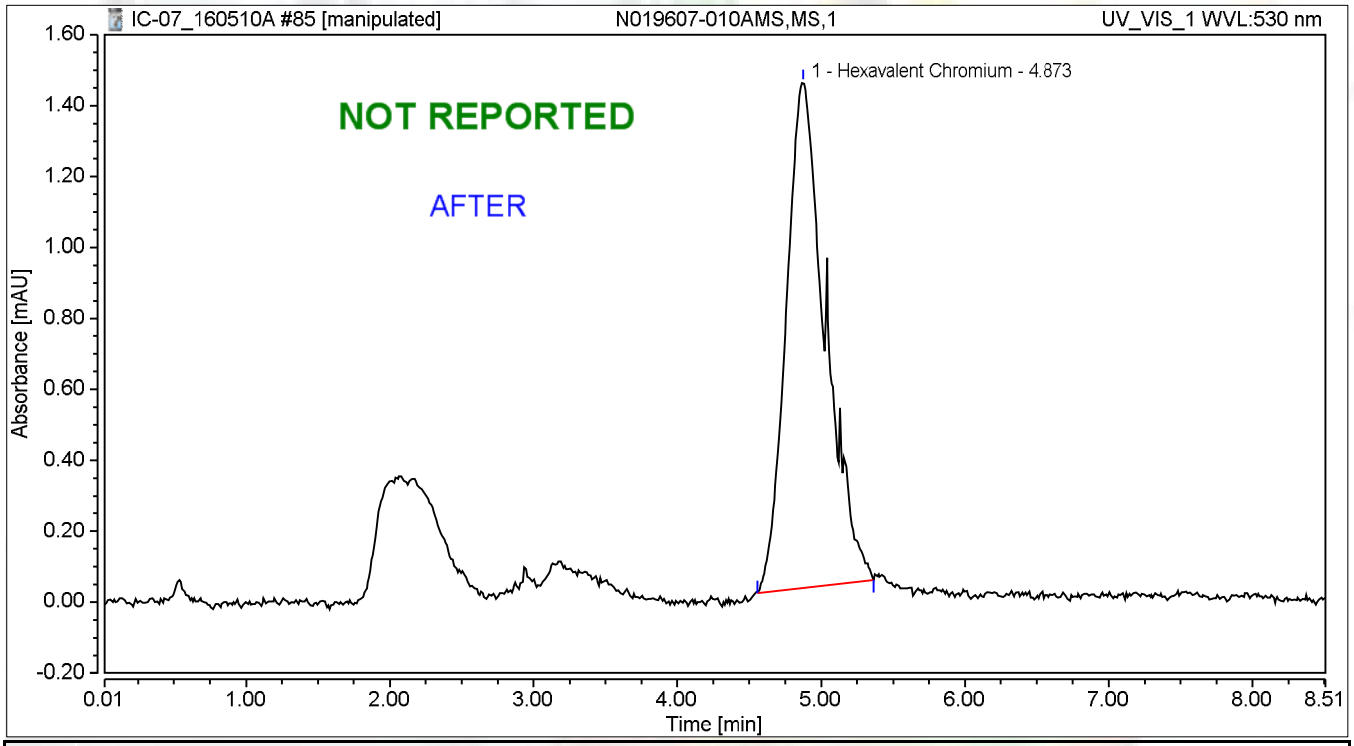
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.873	0.453	1.427	100.00	100.00	1.9239
Total:			**0.453**	**1.427**	**100.00**	**100.00**	

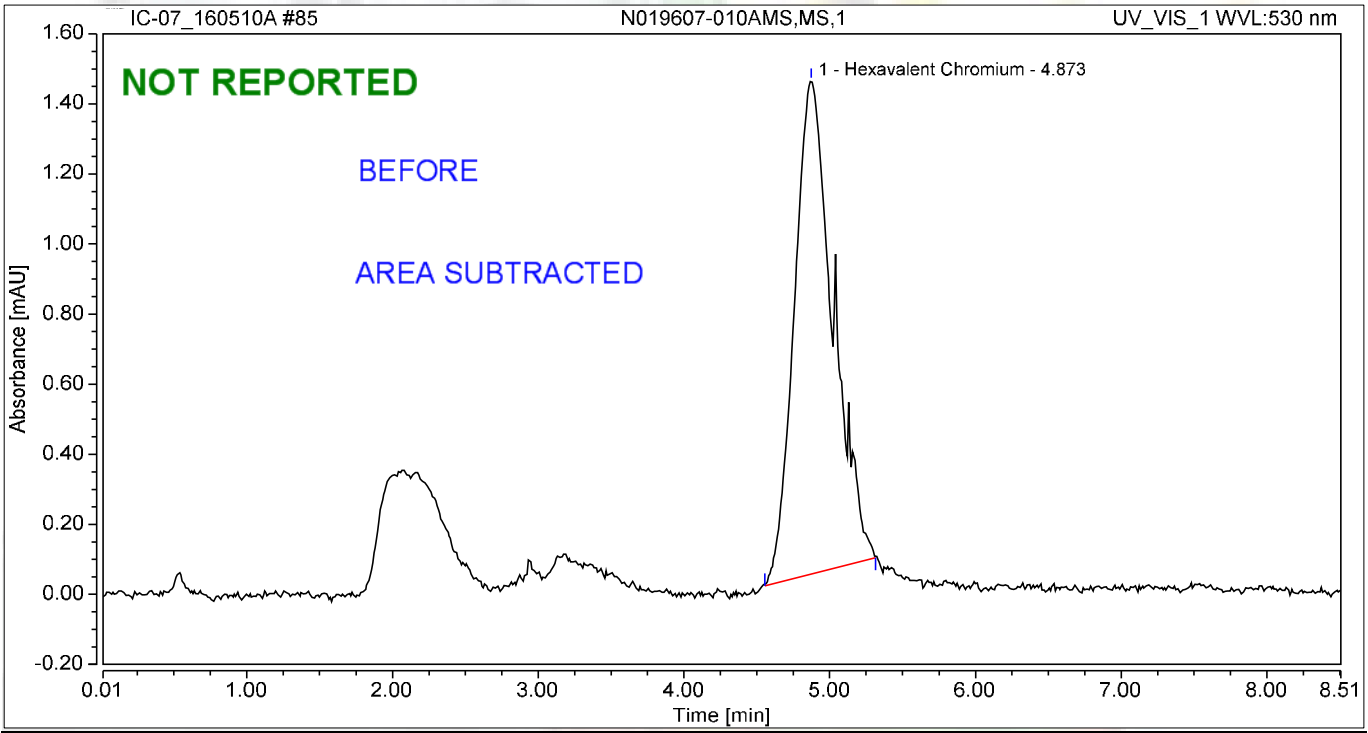
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.873	0.434	1.408	100.00	100.00	1.8448
Total:			**0.434**	**1.408**	**100.00**	**100.00**	

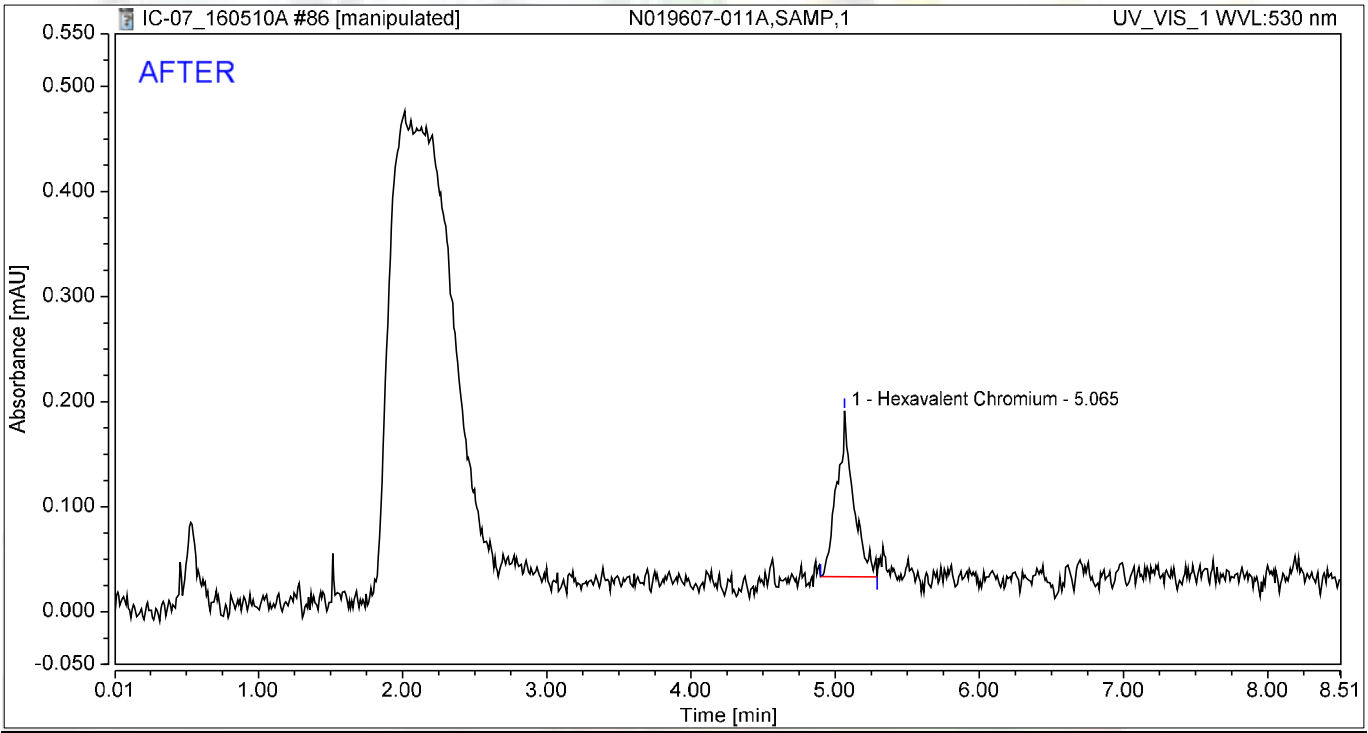
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.021	0.158	100.00	100.00	0.0900
Total:			**0.021**	**0.158**	**100.00**	**100.00**	

5/16/2016

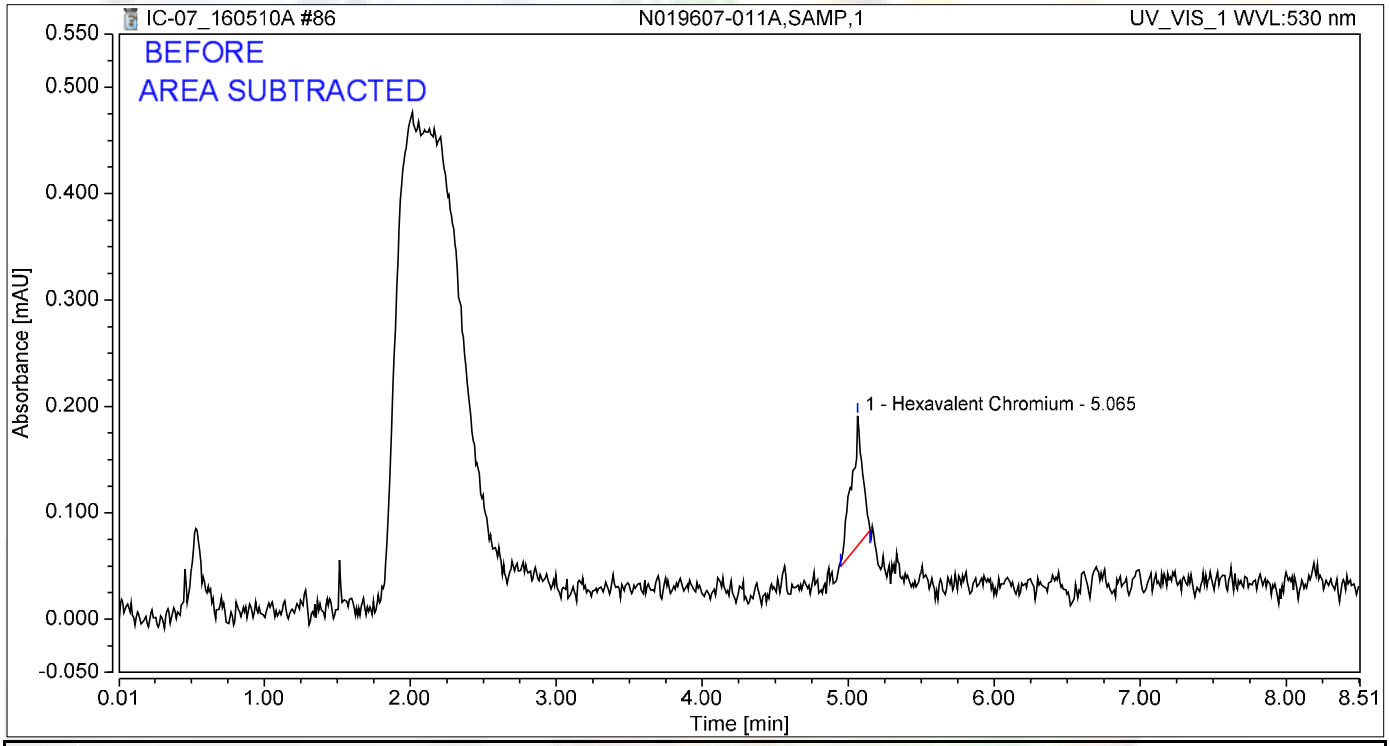
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.011	0.122	100.00	100.00	0.0452
Total:			**0.011**	**0.122**	**100.00**	**100.00**	

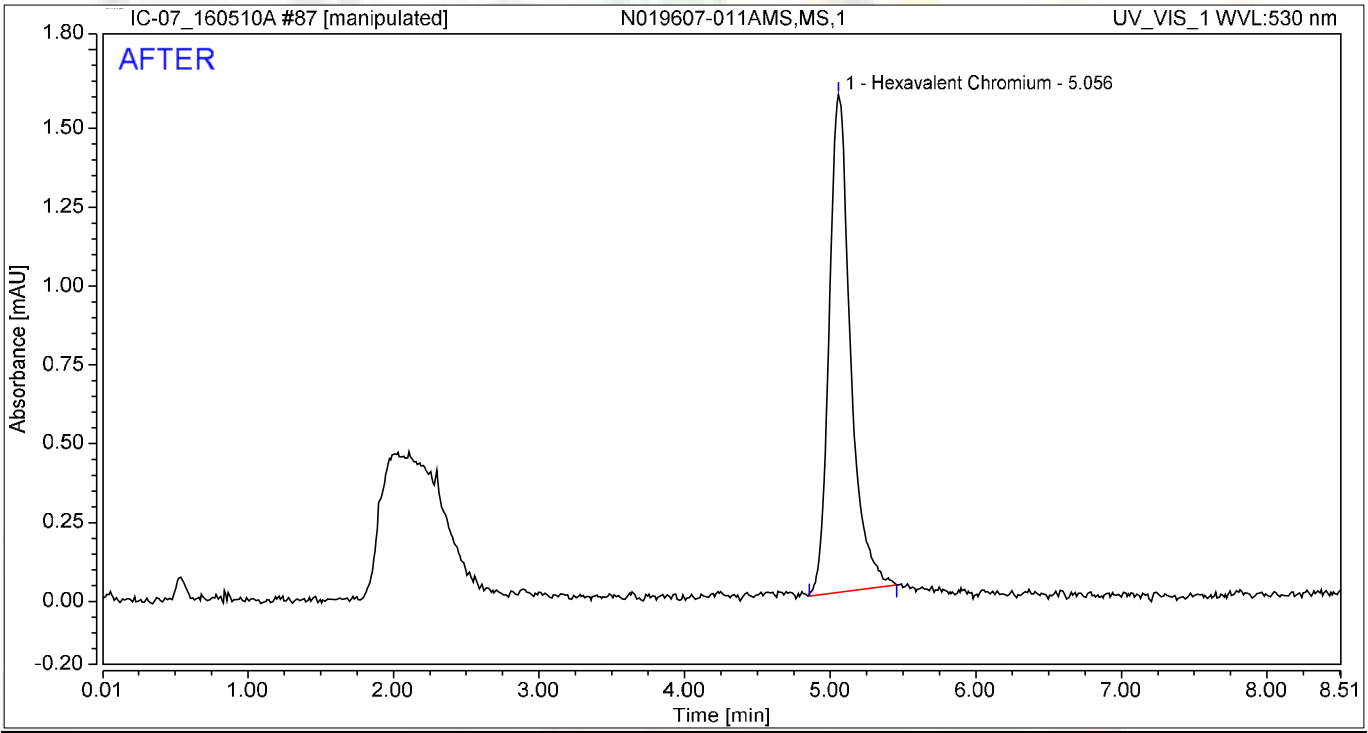
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.270	1.578	100.00	100.00	1.1448
Total:			**0.270**	**1.578**	**100.00**	**100.00**	

5/16/2016

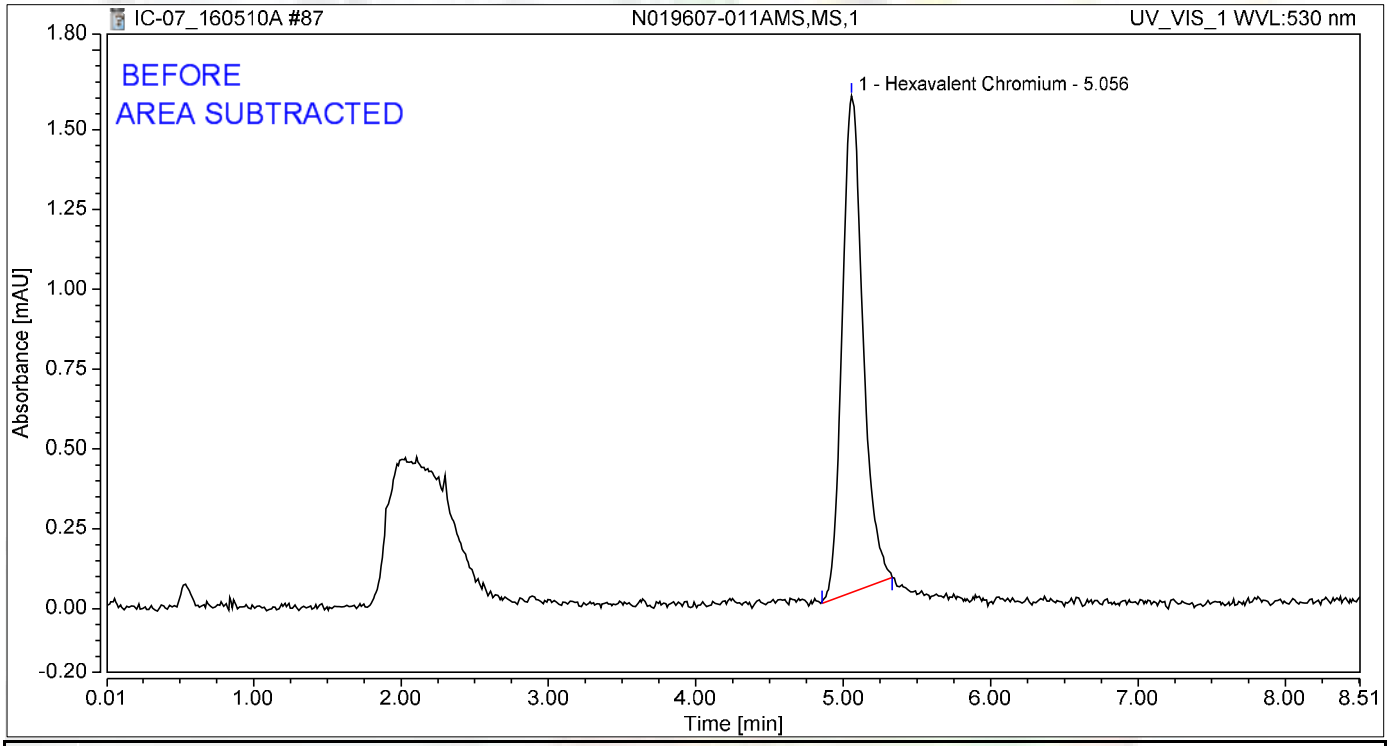
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.254	1.557	100.00	100.00	1.0800
Total:			**0.254**	**1.557**	**100.00**	**100.00**	

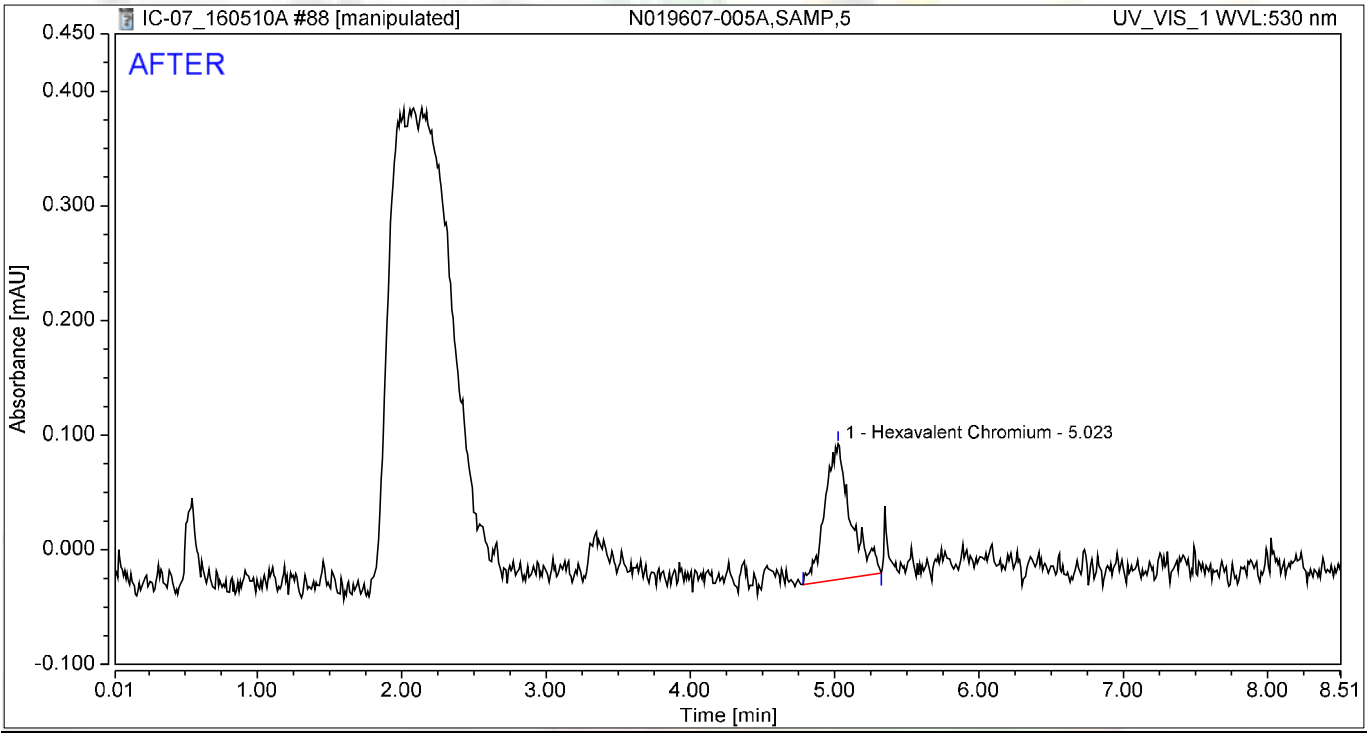
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.025	0.118	100.00	100.00	0.1058
Total:			**0.025**	**0.118**	**100.00**	**100.00**	

5/16/2016

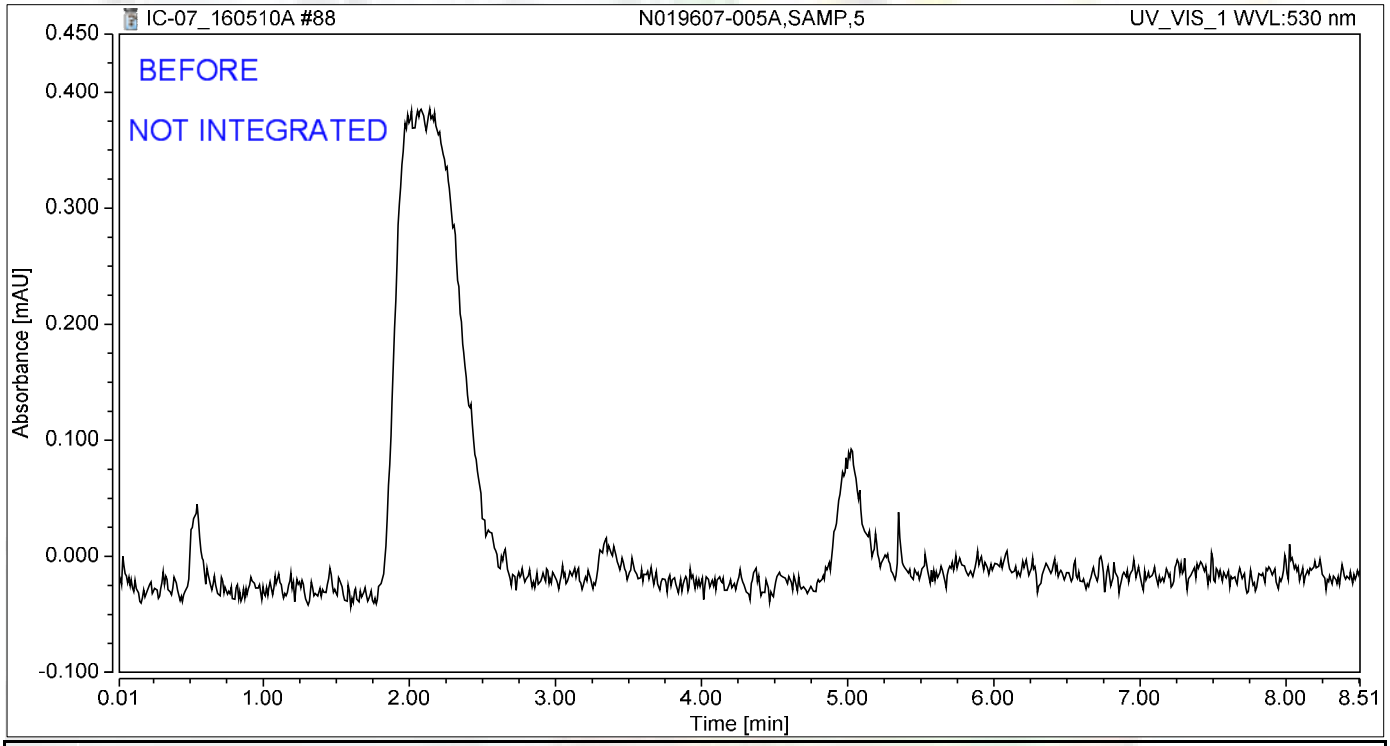
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

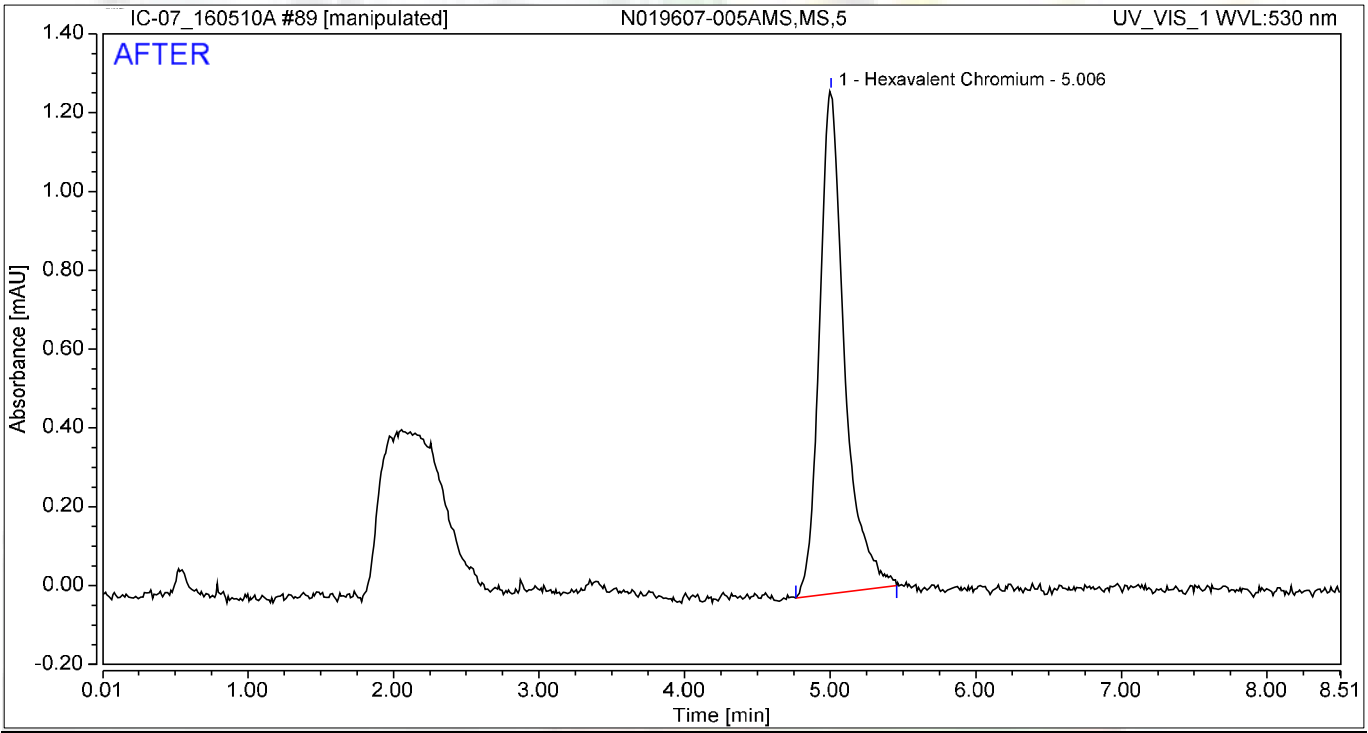
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.255	1.276	100.00	100.00	1.0832
Total:			**0.255**	**1.276**	**100.00**	**100.00**	

jas 5/16/2016

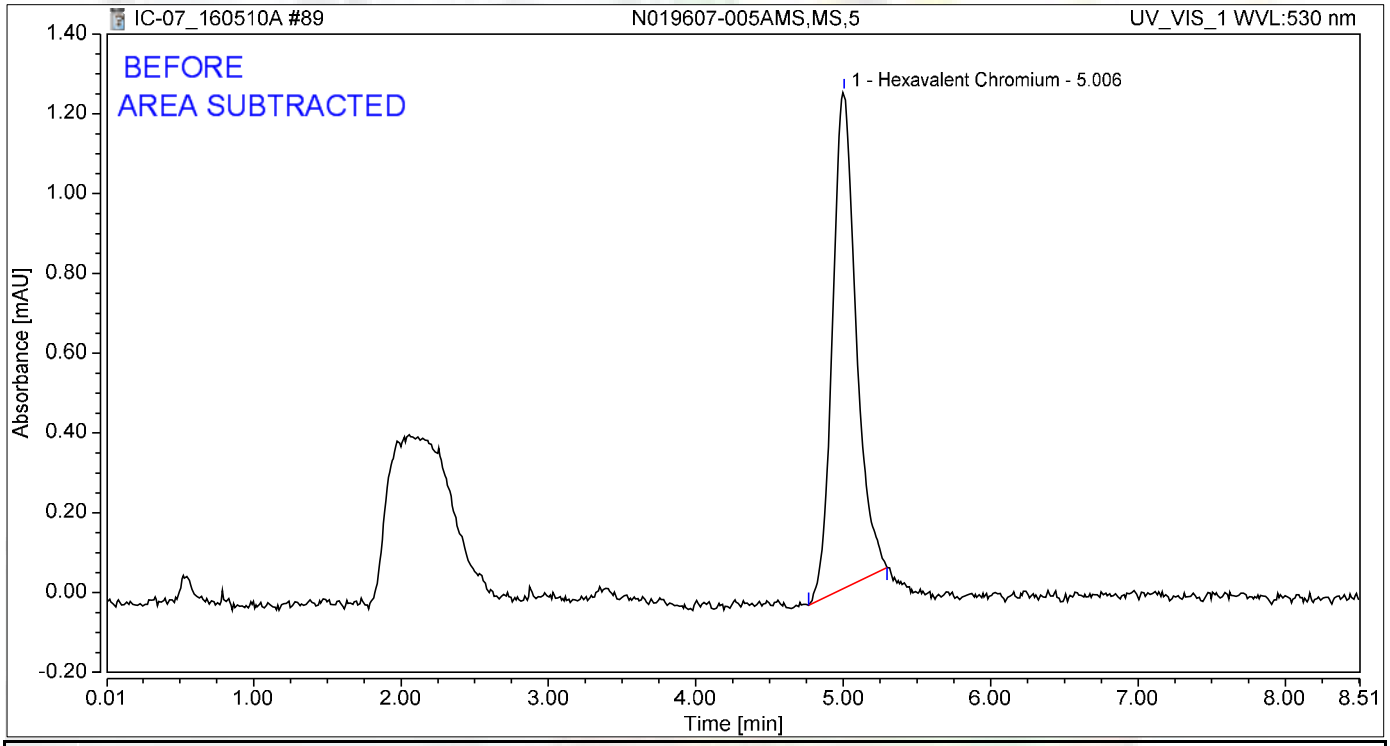
Nancy 5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.231	1.244	100.00	100.00	0.9804
Total:			**0.231**	**1.244**	**100.00**	**100.00**	

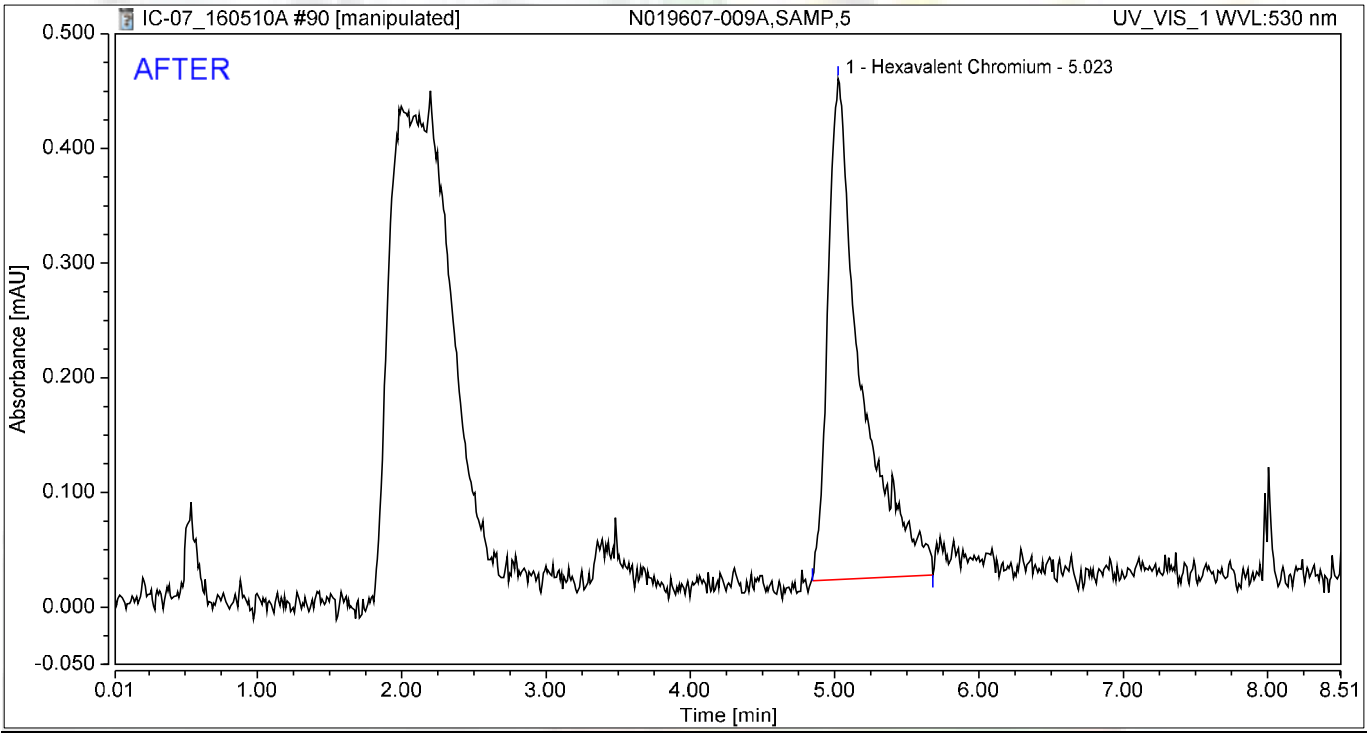
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.116	0.437	100.00	100.00	0.4908
Total:			**0.116**	**0.437**	**100.00**	**100.00**	

jas 5/16/2016

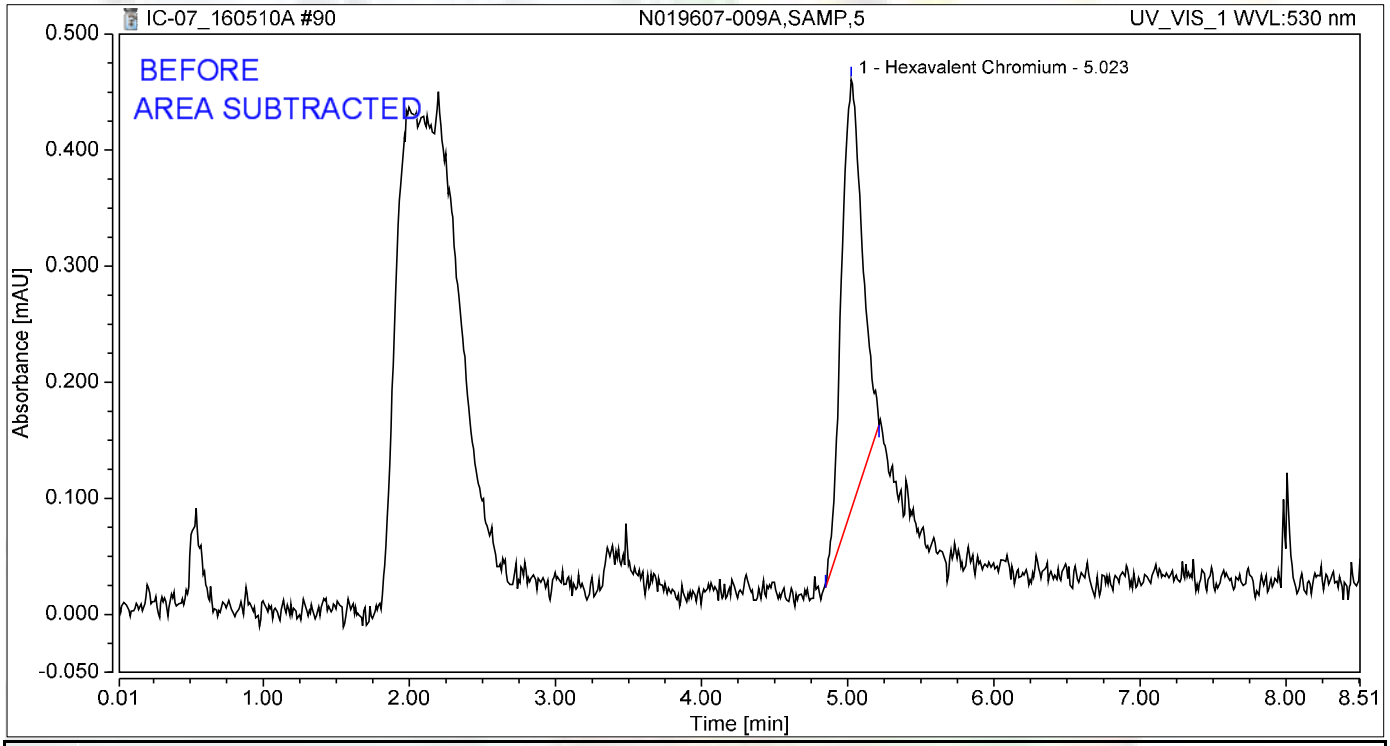
Nancy 5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.061	0.371	100.00	100.00	0.2590
Total:			**0.061**	**0.371**	**100.00**	**100.00**	

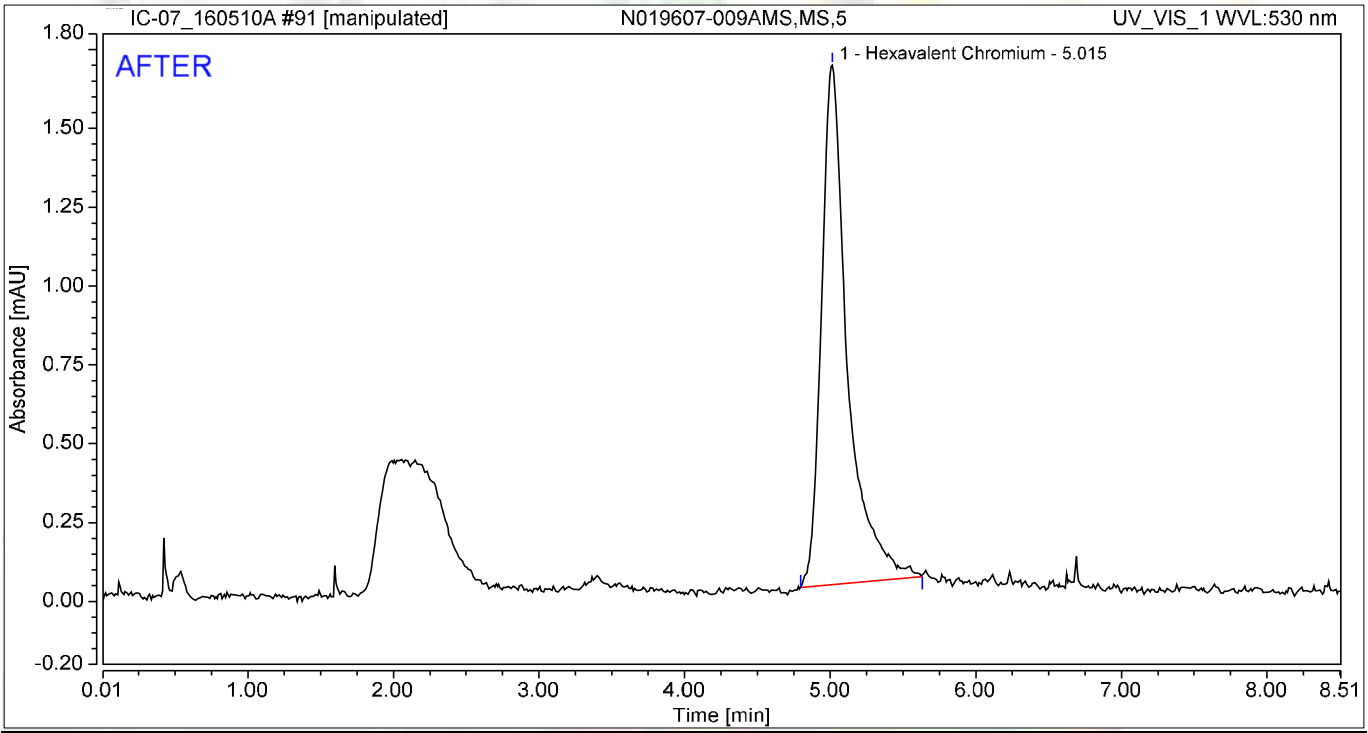
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.015	0.342	1.647	100.00	100.00	1.4525
Total:			**0.342**	**1.647**	**100.00**	**100.00**	

5/16/2016

5/18/2016

My first report/Integration

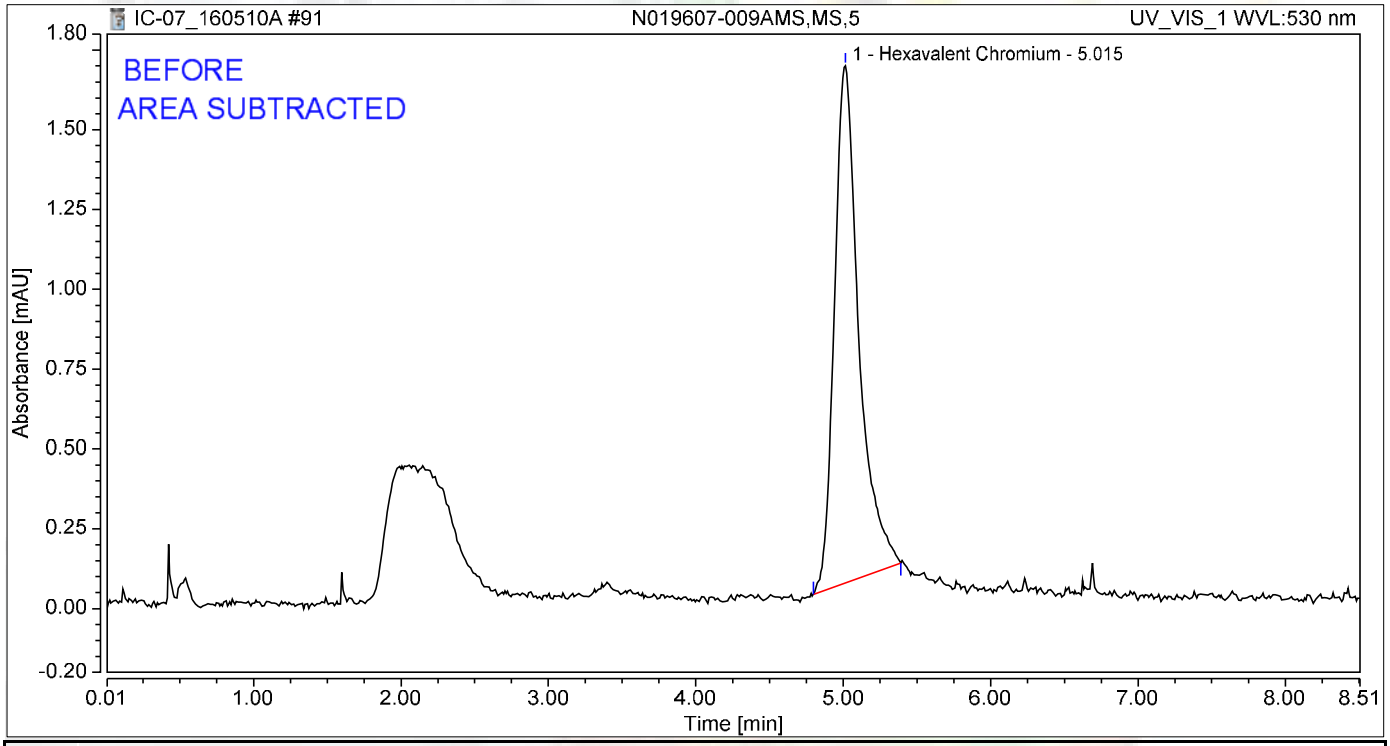
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.015	0.311	1.620	100.00	100.00	1.3218
Total:			**0.311**	**1.620**	**100.00**	**100.00**	

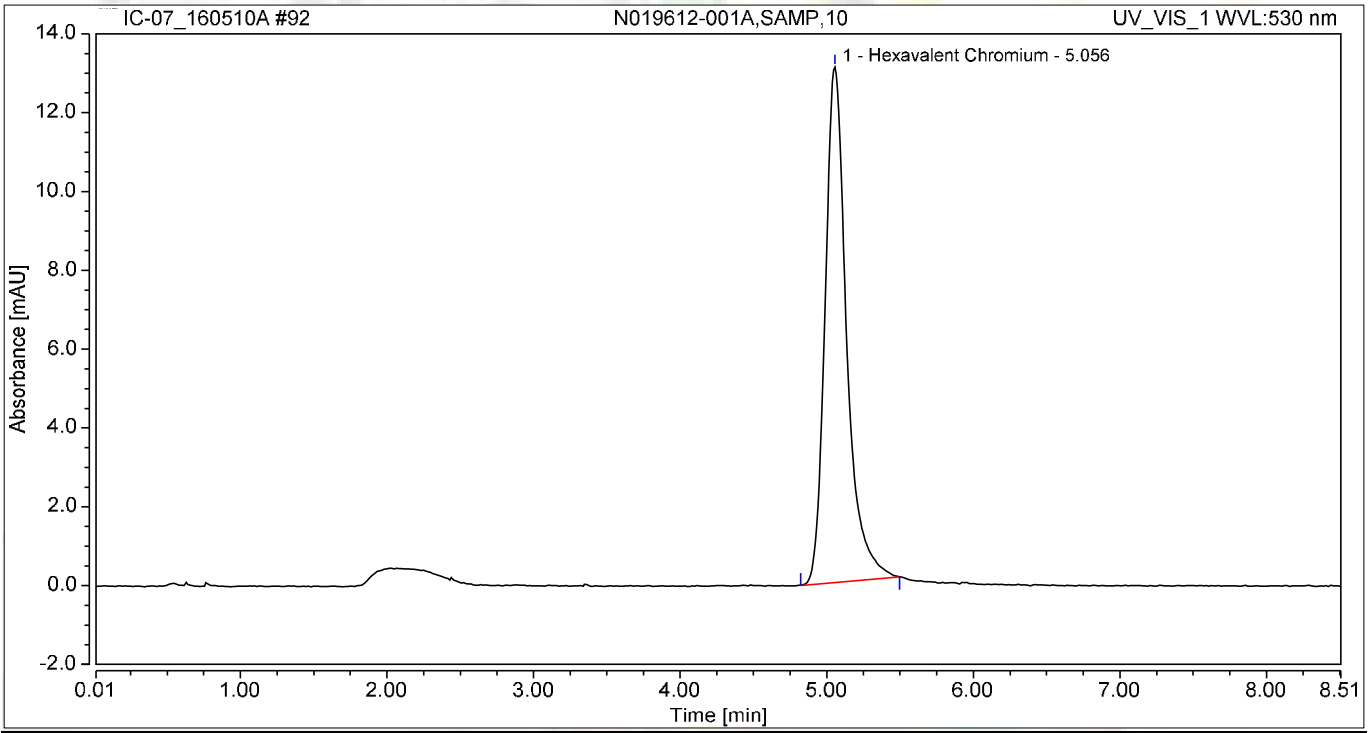
JAS 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019612-001A,SAMP,10**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

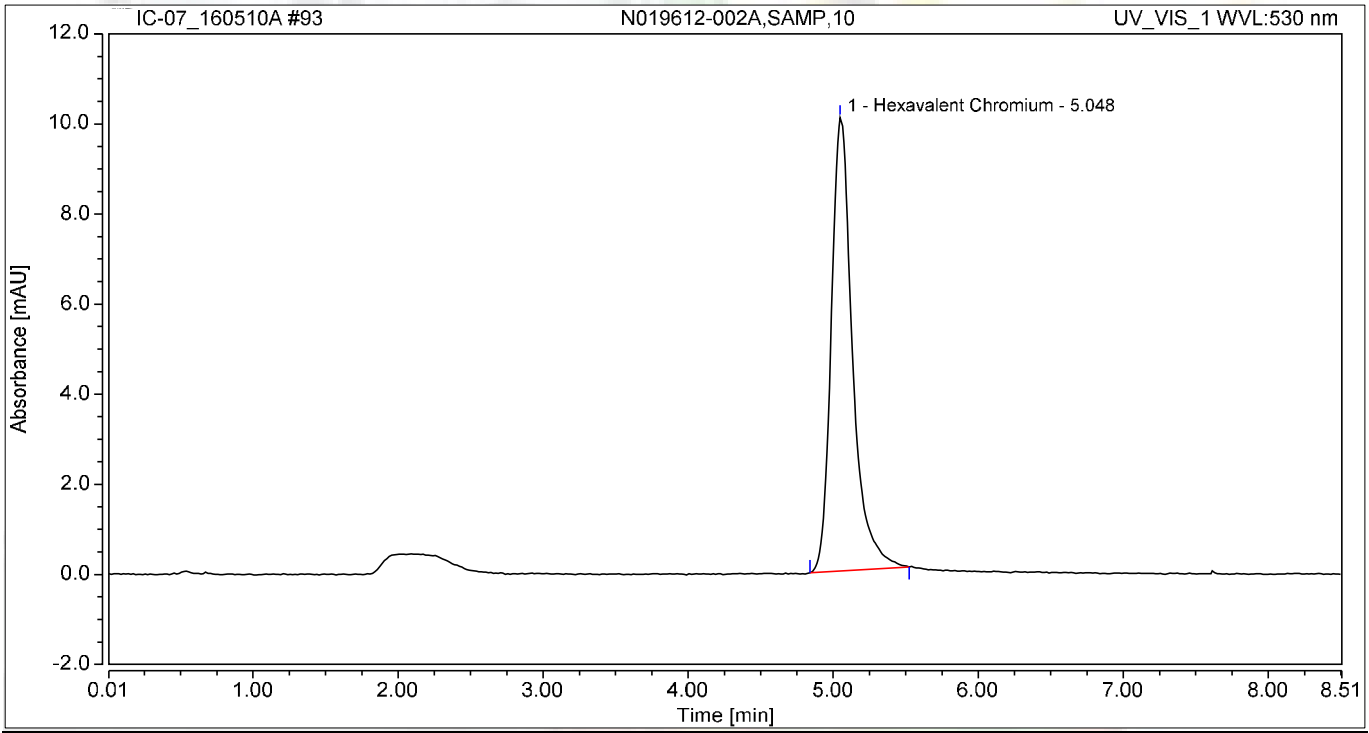
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.229	13.081	100.00	100.00	9.4694
Total:			**2.229**	**13.081**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019612-002A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

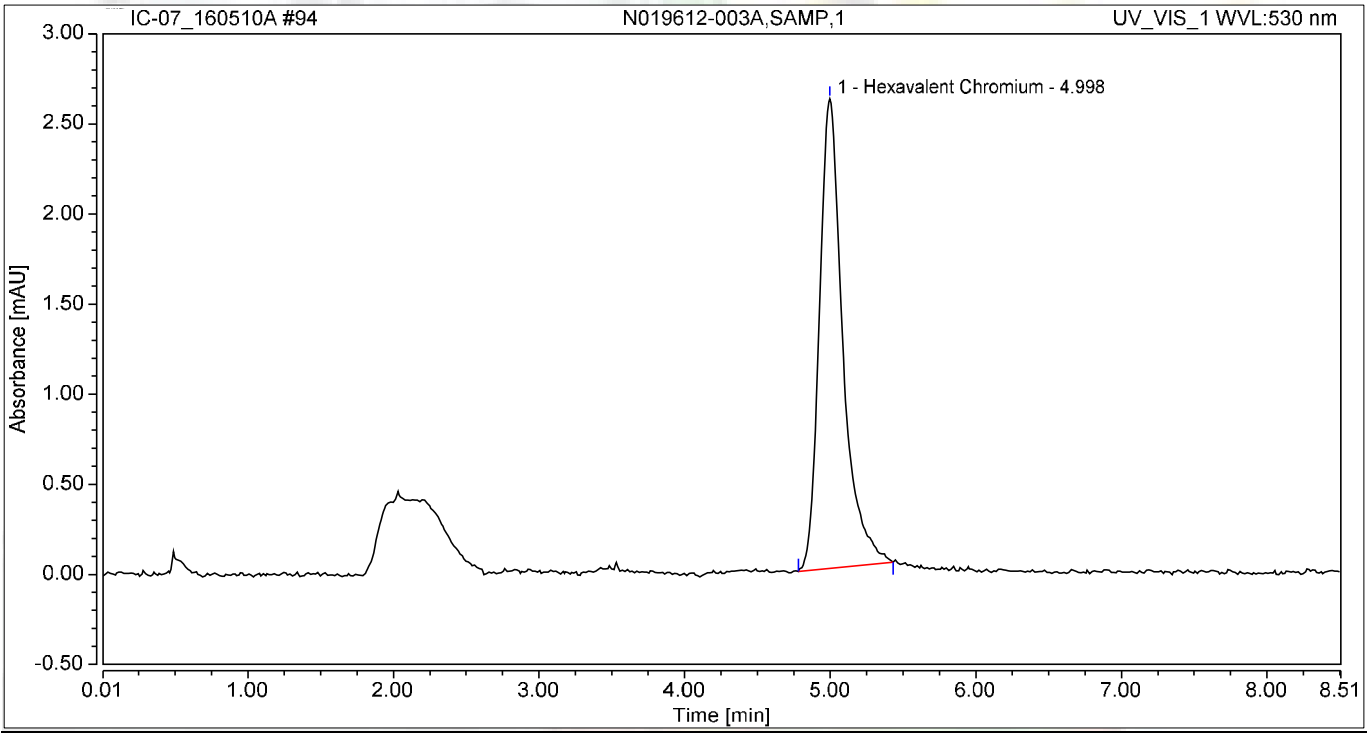
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	1.713	10.063	100.00	100.00	7.2763
Total:			**1.713**	**10.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019612-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

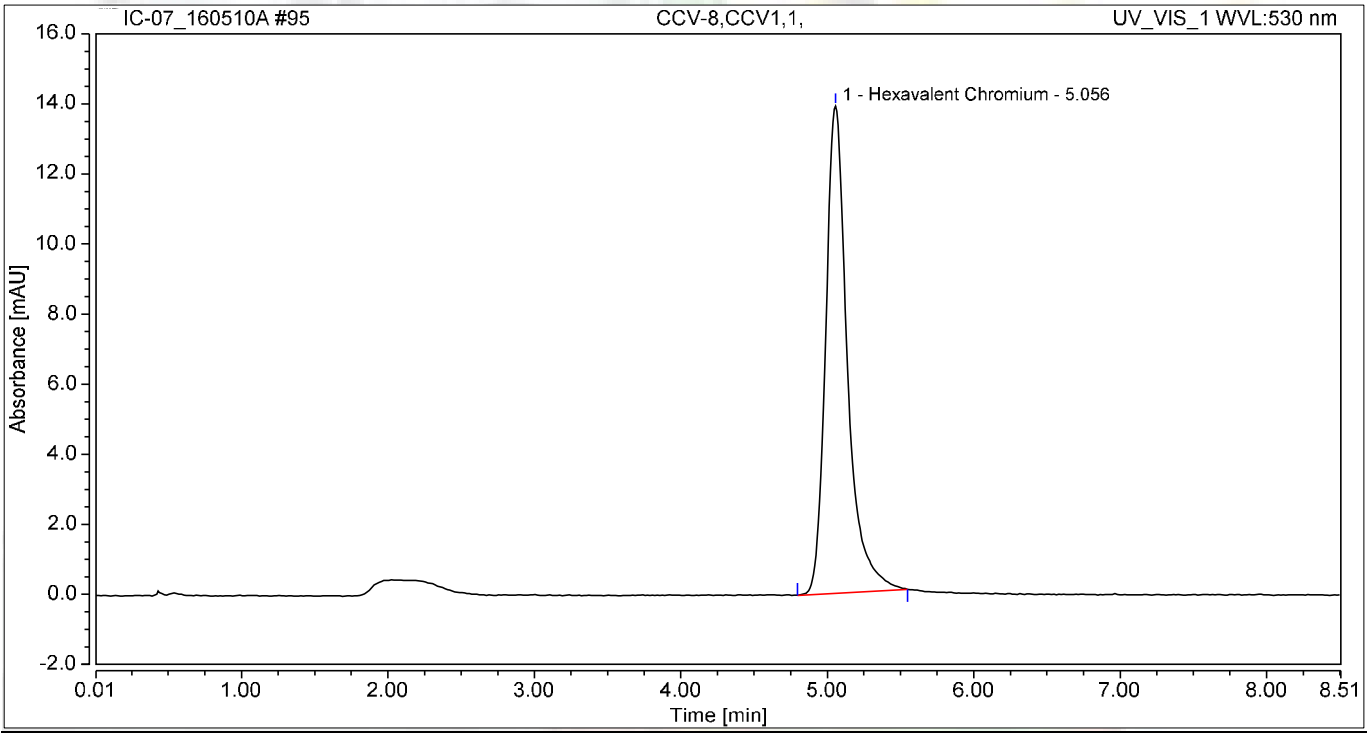
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.998	0.486	2.606	100.00	100.00	2.0648
Total:			**0.486**	**2.606**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

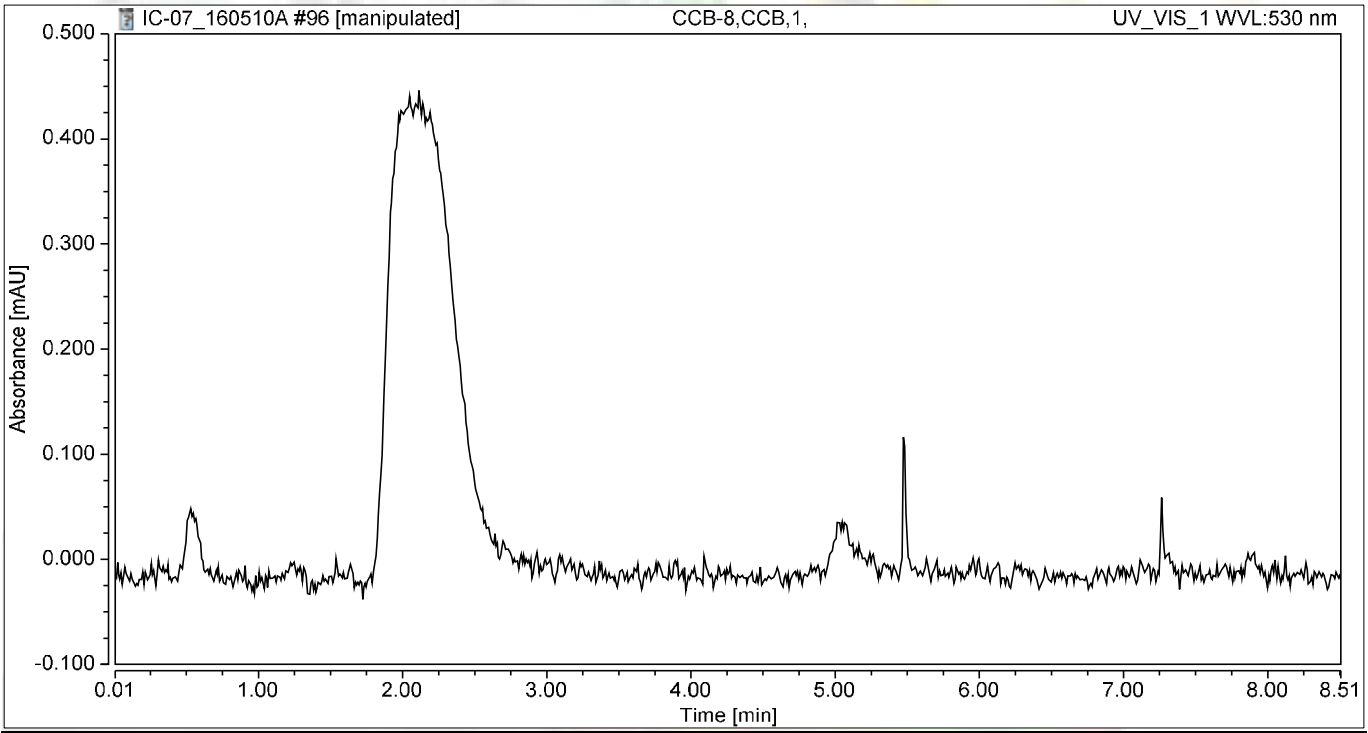
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.395	13.911	100.00	100.00	10.1745
Total:			**2.395**	**13.911**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108282 **Analyst:** QBM

ASSET #: N019544/N019606/N019607 **Date Analyzed:** 5/4/2016

Method: SM2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer — Date: 5/13/2016

2nd Level Reviewer 5/18/2016 Date:

SAMPLE CALCULATION

Sample ID: **N019606-001D @ pH 7.54**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.875mL)

= **0.02105 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (6.20) (0.02105 N) (1) * 1000

=130.51 **mg/L**

Reporting results in two significant figures,

= 130 **mg/L** as CaCO3

5/13/2016

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02105 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (6.20 mL) (0.02105) (1) * 1000

= 130.51 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 130.51 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 130 **mg/L**

5/13/2016

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Alkalinity Preparation and Runlog

Book #5

Matrix: H_2O

Date Extracted: 5/11/16
Time Extracted: 5:15 PM
Extracted By: L

Date Analyzed: 5/11/16
Time Analyzed: 5:15 PM
Analyzed By: L

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-160125B
Hydrochloric Acid: —
Sulfuric Acid: H160308A
$NaHCO_3$: CINV-150601A

pH meter calibration: slope: 98.4%
pH 4 - 4.00 CINV-150825B
7 - 7.01 CINV-160309A
10 - 10.00 CINV-160111D

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.65	IWST160504A	5 mL	0.05 N	—	—	11.90	50/50	$N_{H_2SO_4} = \frac{(2.65\,g/L)(5\,mL)}{53\,(V\ titrant)}$	0.02105263 N
	#2	1	10.66	1	1	1	—	—	11.85	1		
1)	MBLK	50 mL	5.42	—	—	—	0.02105	0	0.05	50/50		
2)	LCS	1	8.32	IWST160504B	1mL	0.05 N	1	0	4.80	1		
3)	N0119544-001C		7.68	—	—	—		0	9.85			
4)	L 2C		7.45	—	—	—		0	7.10			
5)	N0119606-001D		7.54	—	—	—		0	6.20			
6)	L 2D		7.58	—	—	—		0	4.30			
7)	L 3D		7.53	—	—	—		0	4.30			
8)	N0119607-003D		7.56	—	—	—		0	5.85			
9)	N0119613-001A		7.64	—	—	—		0	9.80			
10)	L 2A		7.32	—	—	—		0	6.95			
11)	N0119606-003DMF		7.52	—	—	—		0	4.30			
12)	N0119606-001DMS		7.82	IWST160504B	1mL	0.05N		0	10.75			
13)	L MSD	1	7.84	1	1	1	1	0	10.80	1		
14)												
15)												
16)				P							$\frac{(V_{pH\,8.3})(N_{H_2SO_4})(50{,}000)}{V_{Sx}}$	
17)												
18)												
19)												
20)				T							$\frac{(V_{pH\,4.5})(N_{H_2SO_4})(50{,}000)}{V_{Sx}}$	
	MS											
	MSD											
	LCS											

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.42	50	0.00	0.05	MBLK
LCS-1	8.32	50	0.00	4.80	LCS
N019544-001C	7.68	50	0.00	9.85	SAMP
N019544-002C	7.45	50	0.00	7.10	SAMP
N019606-001D	7.54	50	0.00	6.20	SAMP
N019606-002D	7.58	50	0.00	4.30	SAMP
N019606-003D	7.53	50	0.00	4.30	SAMP
N019607-003D	7.56	50	0.00	5.85	SAMP
N019613-001A	7.64	50	0.00	9.80	SAMP
N019613-002A	7.32	50	0.00	6.95	SAMP
N019606-002DDUP	7.52	50	0.00	4.30	DUP
N019606-001DMS	7.82	50	0.00	10.75	MS
N019606-001DMSD	7.84	50	0.00	10.80	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.875**	ml
N H2SO4	**0.02105**	Normal
Date Analyzed:	**5/4/16**	
Time:	**4:50 PM**	
Analyzed By:	**QBM**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R160308A**	

Date Analyzed:	5/4/16		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	4:50 PM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**QBM**			Hydrochloric Acid:		0			Titrant used:	11.875	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R160308A							**P > 1/2 T**
									N H2SO4	0.02105	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.42				0.02105	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.32				0.02105	0.00	4.80	4.80	1	0.00	101.05	
N019544-001C	50	7.68				0.02105	0.00	9.85	9.85	1	0.00	207.37	
N019544-002C	50	7.45				0.02105	0.00	7.10	7.10	1	0.00	149.47	
N019606-001D	50	7.54				0.02105	0.00	6.20	6.20	1	0.00	130.53	
N019606-002D	50	7.58				0.02105	0.00	4.30	4.30	1	0.00	90.53	
N019606-003D	50	7.53				0.02105	0.00	4.30	4.30	1	0.00	90.53	
N019607-003D	50	7.56				0.02105	0.00	5.85	5.85	1	0.00	123.16	
N019613-001A	50	7.64				0.02105	0.00	9.80	9.80	1	0.00	206.32	
N019613-002A	50	7.32				0.02105	0.00	6.95	6.95	1	0.00	146.32	
N019606-002DDU	50	7.52				0.02105	0.00	4.30	4.30	1	0.00	90.53	
N019606-001DMS	50	7.82				0.02105	0.00	10.75	10.75	1	0.00	226.32	
N019606-001DMS	50	7.84				0.02105	0.00	10.80	10.80	1	0.00	227.37	

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	5/4/16
Time:	4:50 PM
Analyzed By:	QBM

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	0.00	101.05	101.05	101.05		P = 0
N019544-001C	0.00	0.00	207.37	207.37	207.37		P = 0
N019544-002C	0.00	0.00	149.47	149.47	149.47		P = 0
N019606-001D	0.00	0.00	130.53	130.53	130.53		P = 0
N019606-002D	0.00	0.00	90.53	90.53	90.53		P = 0
N019606-003D	0.00	0.00	90.53	90.53	90.53		P = 0
N019607-003D	0.00	0.00	123.16	123.16	123.16		P = 0
N019613-001A	0.00	0.00	206.32	206.32	206.32		P = 0
N019613-002A	0.00	0.00	146.32	146.32	146.32		P = 0
N019606-002DDUP	0.00	0.00	90.53	90.53	90.53		P = 0
N019606-001DMS	0.00	0.00	226.32	226.32	226.32		P = 0
N019606-001DMSD	0.00	0.00	227.37	227.37	227.37		P = 0

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108466
ASSET #: N019591 / N019592 / N019606 / N019607 / N019610

Instrument ID: IC2
Analyst: QBM
Date Analyzed: 5/9/2016

Method:

- [X] EPA 300.0
- [ ] EPA 7199
- [ ] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/17/2016

2nd Level Reviewer Nancy 5/18/2016 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N019606-001D** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 5.009 * 50

= 250.45

Reporting result in two significant values,

Sulfate, mg/L = 250

ANALYSIS RUN LOG

DIONEX SCHEDULE - C:\DX\SCHEDULE\160418.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160418.M	..\16041801.D01	1	1	1
2	,BLANK,	..\160418.M	..\16041801.D02	1	1	1
3	AUTOCAL1R	..\160418.M	..\16041801.D03	1	1	1
4	AUTOCAL2R	..\160418.M	..\16041801.D04	1	1	1
5	AUTOCAL3R	..\160418.M	..\16041801.D05	1	1	1
6	AUTOCAL4R	..\160418.M	..\16041801.D06	1	1	1
7	AUTOCAL5R	..\160418.M	..\16041801.D07	1	1	1
8	AUTOCAL6R	..\160418.M	..\16041801.D08	1	1	1
9	,ICV,ICV,1,	..\160418.M	..\16041801.D09	1	1	1
10	,ICB,ICB,1,	..\160418.M	..\16041801.D10	1	1	1
11	,MB-H2O,MBLK,1,	..\160418.M	..\16041801.D11	1	1	1
12	,LCS-H2O,LCS,1,	..\160418.M	..\16041801.D12	1	1	1
13	,N019419-020C,SAMP,	..\160418.M	..\16041801.D13	1	1	1
14	,N019431-006C,SAMP,	..\160418.M	..\16041801.D14	1	1	1
15	,N019431-006CDUP,DU	..\160418.M	..\16041801.D15	1	1	1
16	,N019431-015C,SAMP,	..\160418.M	..\16041801.D16	1	1	1
17	,N019431-015CMS,MS,	..\160418.M	..\16041801.D17	1	1	1
18	,N019431-015CMSD,MS	..\160418.M	..\16041801.D18	1	1	1
19	,N019432-002C,SAMP,	..\160418.M	..\16041801.D19	1	1	1
20	,N019432-003C,SAMP,	..\160418.M	..\16041801.D20	1	1	1
21	,CCV-1,CCV,1,	..\160418.M	..\16041801.D21	1	1	1
22	,CCB-1,CCB,1,	..\160418.M	..\16041801.D22	1	1	1
23	,N019419-020C,SAMP,	..\160418.M	..\16041801.D23	1	1	1
24	,N019432-004C,SAMP,	..\160418.M	..\16041801.D24	1	1	1
25	,N019432-004CMS,MS,	..\160418.M	..\16041801.D25	1	1	1
26	,N019432-005C,SAMP,	..\160418.M	..\16041801.D26	1	1	1
27	,N019432-006C,SAMP,	..\160418.M	..\16041801.D27	1	1	1
28	,N019432-007C,SAMP,	..\160418.M	..\16041801.D28	1	1	1
29	,N019432-008C,SAMP,	..\160418.M	..\16041801.D29	1	1	1
30	,N019432-009C,SAMP,	..\160418.M	..\16041801.D30	1	1	1
31	,N019432-015C,SAMP,	..\160418.M	..\16041801.D31	1	1	1
32	,N019433-001C,SAMP,	..\160418.M	..\16041801.D32	1	1	1
33	,CCV-2,CCV,1,	..\160418.M	..\16041801.D33	1	1	1
34	,CCB-2,CCB,1,	..\160418.M	..\16041801.D34	1	1	1
35	,N019433-007C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
36	,N019433-008C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
37	,N019433-009C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
38	,N019447-007D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
39	,N019447-008D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
40	,N019447-009D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
41	,CCV-3,CCV,1,	..\160418.M	..\16041801.D01	1	1	1
42	,CCB-3,CCB,1,	..\160418.M	..\16041801.D01	1	1	1
43	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

4/21/2016

DIONEX SCHEDULE - C:\DX\SCHEDULE\160509.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160418.M	..\16050901.D01	1	1	1
2	,CCV-1,CCV,1,	..\160418.M	..\16050901.D02	1	1	1
3	,CCB-1,CCB,1,	..\160418.M	..\16050901.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\160418.M	..\16050901.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\160418.M	..\16050901.D05	1	1	1
6	,N019591-001C,SAMP,	..\160418.M	..\16050901.D06	1	1	1
7	,N019591-002C,SAMP,	..\160418.M	..\16050901.D07	1	1	1
8	,N019591-009C,SAMP,	..\160418.M	..\16050901.D08	1	1	1
9	,N019591-010C,SAMP,	..\160418.M	..\16050901.D09	1	1	1
10	,N019591-011C,SAMP,	..\160418.M	..\16050901.D10	1	1	1
11	,N019591-012C,SAMP,	..\160418.M	..\16050901.D11	1	1	1
12	,N019591-002CMS,MS,	..\160418.M	..\16050901.D12	1	1	1
13	,N019591-002CMSD,MS	..\160418.M	..\16050901.D13	1	1	1
14	,CCV-2,CCV,1,	..\160418.M	..\16050901.D14	1	1	1
15	,CCB-2,CCB,1,	..\160418.M	..\16050901.D15	1	1	1
16	,N019606-001D,SAMP,	..\160418.M	..\16050901.D16	1	1	1
17	,N019606-001DDUP,DU	..\160418.M	..\16050901.D17	1	1	1
18	,N019606-002D,SAMP,	..\160418.M	..\16050901.D18	1	1	1
19	,N019606-003D,SAMP,	..\160418.M	..\16050901.D19	1	1	1
20	,N019607-003D,SAMP,	..\160418.M	..\16050901.D20	1	1	1
21	,N019607-003DMS,MS,	..\160418.M	..\16050901.D21	1	1	1
22	,N019607-003DMSD,MS	..\160418.M	..\16050901.D22	1	1	1
23	,N019606-001D,SAMP,	..\160418.M	..\16050901.D23	1	1	1
24	,N019606-002D,SAMP,	..\160418.M	..\16050901.D24	1	1	1
25	,N019606-003D,SAMP,	..\160418.M	..\16050901.D25	1	1	1
26	,CCV-3,CCV,1,	..\160418.M	..\16050901.D26	1	1	1
27	,CCB-3,CCB,1,	..\160418.M	..\16050901.D27	1	1	1
28	,N019607-003D,SAMP,	..\160418.M	..\16050901.D28	1	1	1
29	,N019610-009C,SAMP,	..\160418.M	..\16050901.D29	1	1	1
30	,N019610-009CDUP,DU	..\160418.M	..\16050901.D30	1	1	1
31	,N019610-010C,SAMP,	..\160418.M	..\16050901.D31	1	1	1
32	,N019591-013C,SAMP,	..\160418.M	..\16050901.D32	1	1	1
33	,N019591-014C,SAMP,	..\160418.M	..\16050901.D33	1	1	1
34	,N019591-015C,SAMP,	..\160418.M	..\16050901.D34	1	1	1
35	,N019592-001C,SAMP,	..\160418.M	..\16050901.D35	1	1	1
36	,N019592-004C,SAMP,	..\160418.M	..\16050901.D36	1	1	1
37	,N019592-005C,SAMP,	..\160418.M	..\16050901.D37	1	1	1
38	,CCV-4,CCV,1,	..\160418.M	..\16050901.D38	1	1	1
39	,CCB-4,CCB,1,	..\160418.M	..\16050901.D39	1	1	1
40	,N019592-006C,SAMP,	..\160418.M	..\16050901.D40	1	1	1
41	,N019592-006CMS,MS,	..\160418.M	..\16050901.D41	1	1	1
42	,N019592-007C,SAMP,	..\160418.M	..\16050901.D42	1	1	1
43	,N019606-001D,SAMP,	..\160418.M	..\16050901.D43	1	1	1
44	,N019606-001DMS,MS,	..\160418.M	..\16050901.D44	1	1	1
45	,N019606-001DMSD,MS	..\160418.M	..\16050901.D45	1	1	1
46	,N019606-002D,SAMP,	..\160418.M	..\16050901.D46	1	1	1
47	,N019606-003D,SAMP,	..\160418.M	..\16050901.D47	1	1	1
48	,N019607-003D,SAMP,	..\160418.M	..\16050901.D48	1	1	1
49	,CCV-5,CCV,1,	..\160418.M	..\16050901.D49	1	1	1
50	,CCB-5,CCB,1,	..\160418.M	..\16050901.D50	1	1	1
51	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

INITIAL CALIBRATION DATA SUMMARY

DIONEX METHOD PARAMETERS - 160418.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS

Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\14120201.D02

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

4/21/2016

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

4/21/2016

Component Table -- Last Modified: 11:34 on Mon, 18 Apr 2016

Component # 1 Fluoride Retention Time 2.53
Reference Comp. Fluoride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 1.96604E-002
K1 = 2.75525E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	21804	2420
3	5.00000E-001	176562	18677
4	1.00000E+000	340825	37434
5	2.50000E+000	885332	103067
6	5.00000E+000	1817297	221045

Component # 2 Chloride Retention Time 3.77
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.72865E-002
K1 = 3.73331E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	123564	13717
3	1.00000E+000	255623	26807
4	2.50000E+000	629433	71108
5	5.00000E+000	1294953	149595
6	1.00000E+001	2677600	327188

Component # 3 Nitrite Retention Time 4.59
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.51829E-002
K1 = 2.03122E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	26388	2305
3	5.00000E-001	238401	20080
4	1.00000E+000	464414	39654
5	2.50000E+000	1223706	108966
6	5.00000E+000	2457690	228709

Component # 4 Bromide Retention Time 5.56
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -6.25288E-002
K1 = 8.99369E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	20924	1945
3	5.00000E-001	71851	4996
4	1.00000E+000	121564	9309
5	2.50000E+000	293667	24471
6	5.00000E+000	556648	49106

4/21/2016

Component # 5 Nitrate Retention Time 6.29
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.81800E-002
K1 = 1.49417E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	37518	2737
3	5.00000E-001	326026	23702
4	1.00000E+000	630623	48352
5	2.50000E+000	1641516	132850
6	5.00000E+000	3348176	278990

Component # 6 Phosphate Retention Time 8.30
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = -4.16125E-002
K1 = 4.34400E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	22593	1464
3	5.00000E-001	124124	6708
4	1.00000E+000	268719	13127
5	2.50000E+000	580416	34073
6	5.00000E+000	1156467	69715

Component # 7 Sulfate Retention Time 9.48
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.23779E-001
K1 = 5.14729E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	101897	5288
3	2.00000E+000	369925	20046
4	5.00000E+000	913040	51522
5	1.00000E+001	1859900	108154
6	2.00000E+001	3896340	233845

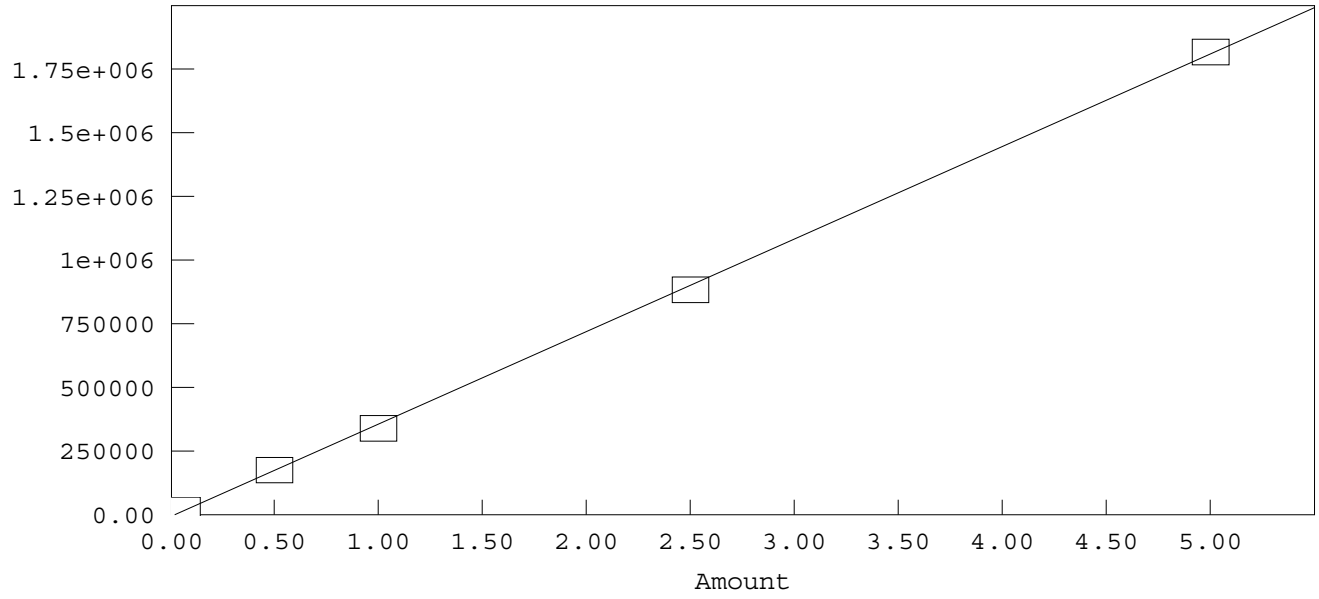
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

4/21/2016

Method: 160418.MET - Last Updated: 11:34 on Mon, 18 Apr 2016

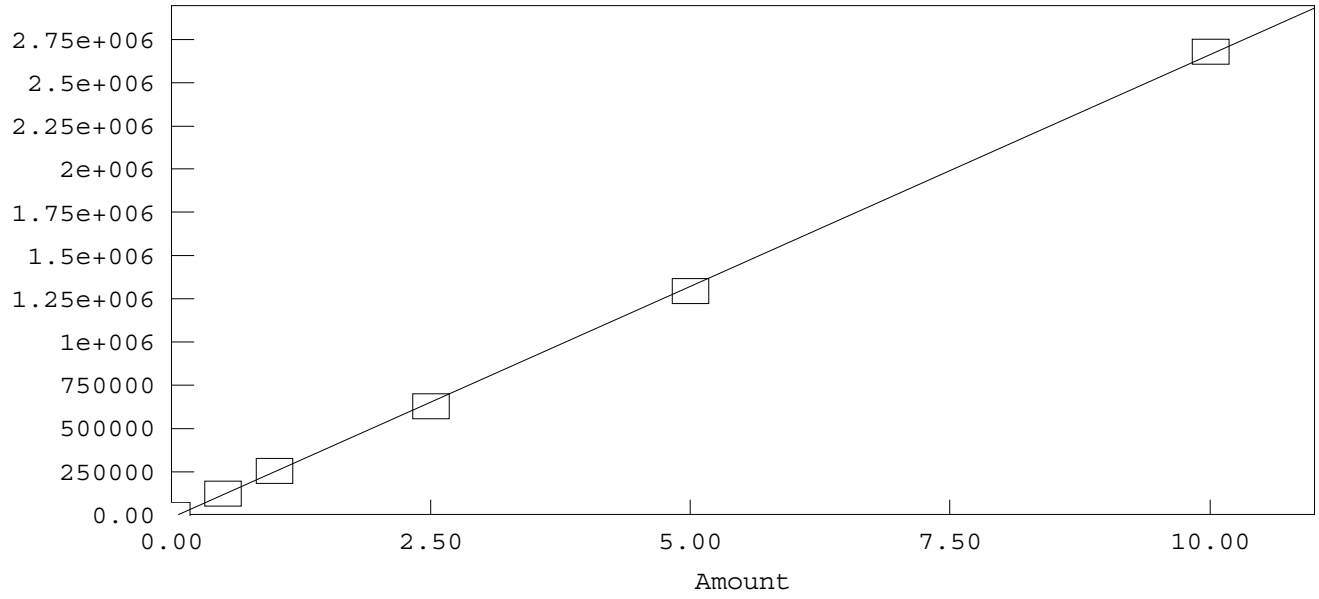
Component: Fluoride
Fit Type: Linear
r^2 = 0.999713
Amt = Resp * 2.755e-006 + 0.01966
Resp = Amt * 3.629e+005 + -7136
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

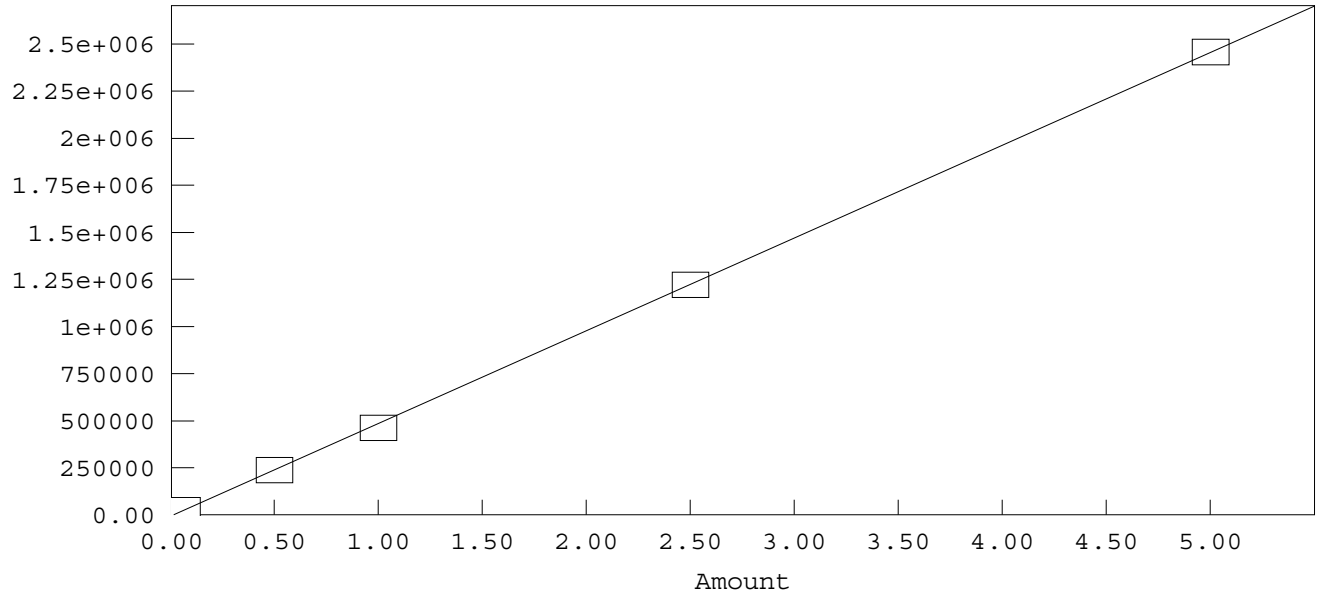
Component: Chloride
Fit Type: Linear
r^2 = 0.999635
Amt = Resp * 3.733e-006 + 0.06729
Resp = Amt * 2.679e+005 + -1.802e+004
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

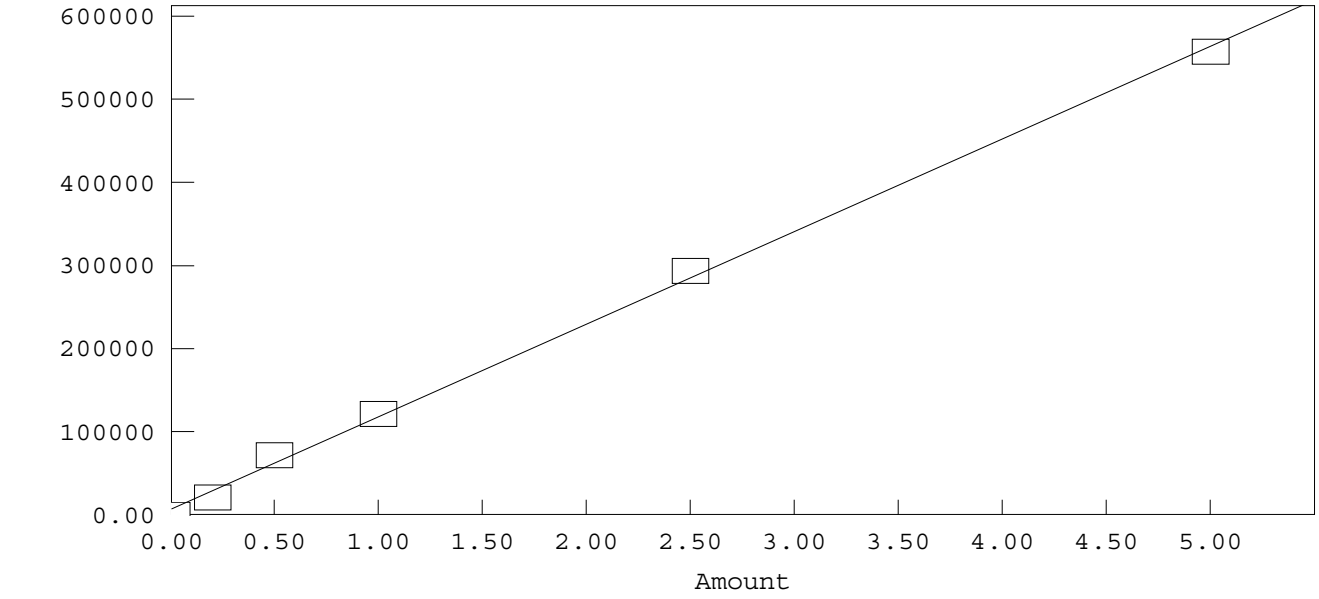
Component: Nitrite
Fit Type: Linear
r² = 0.999875
Amt = Resp * 2.031e-006 + 0.01518
Resp = Amt * 4.923e+005 + -7475
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

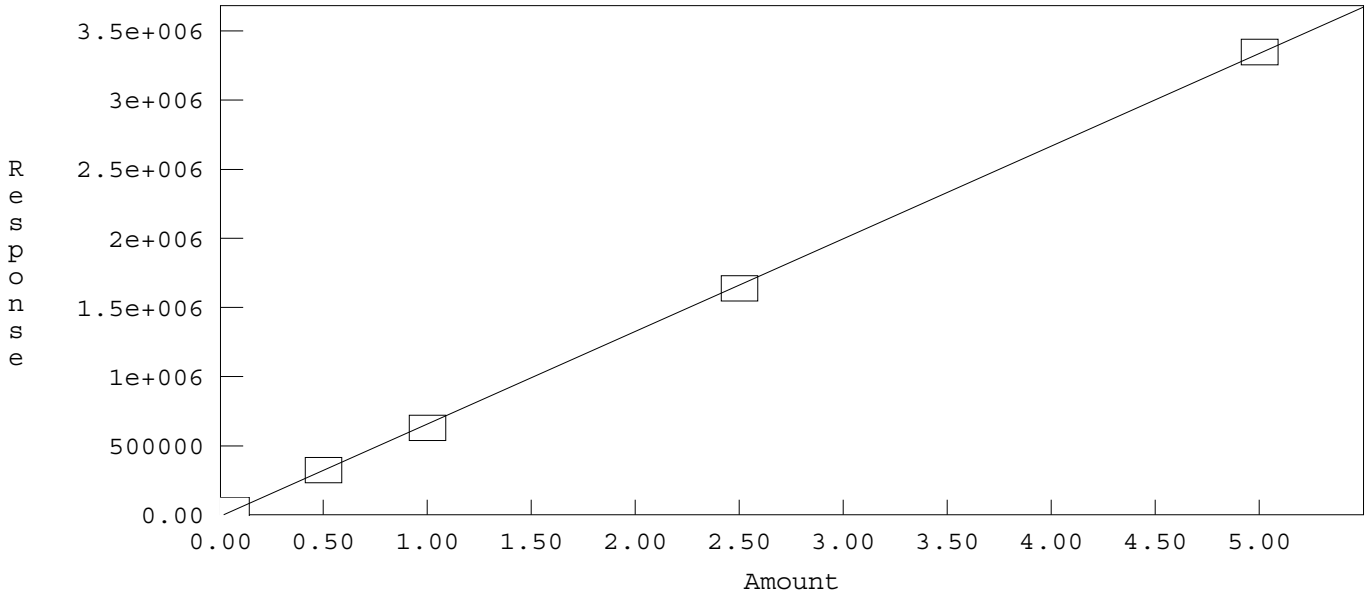
Component: Bromide
Fit Type: Linear
r² = 0.998550
Amt = Resp * 8.994e-006 + -0.06253
Resp = Amt * 1.112e+005 + 6953
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

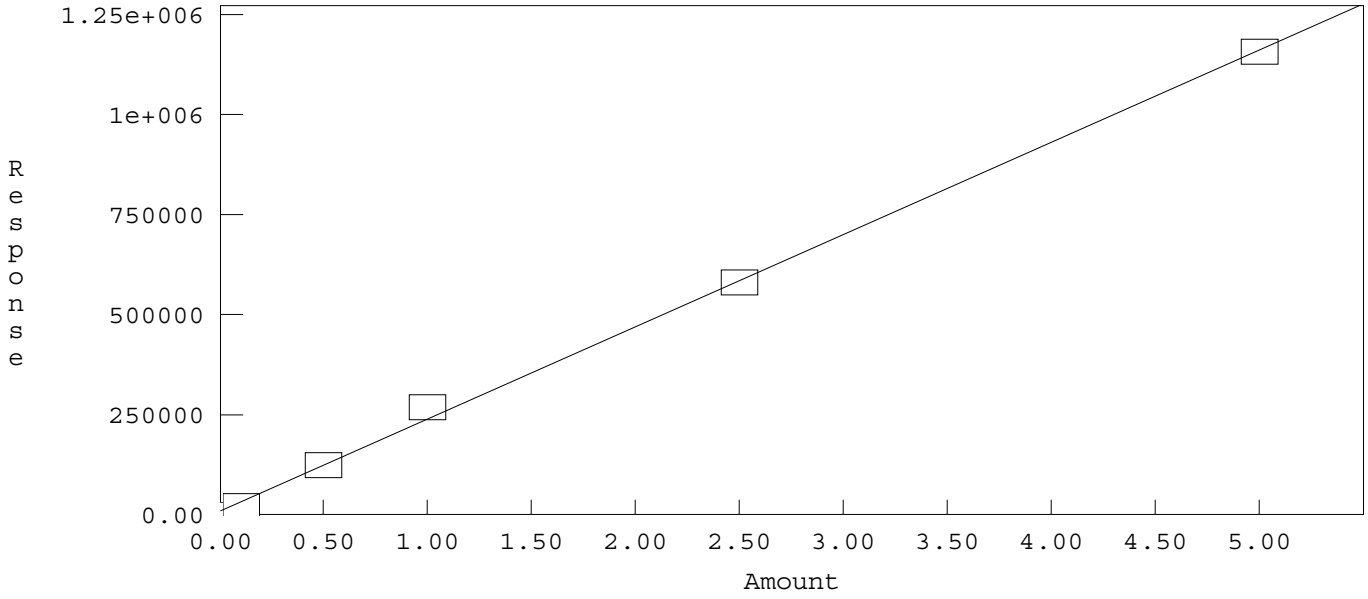
Component: Nitrate
Fit Type: Linear
r² = 0.999799
Amt = Resp * 1.494e-006 + 0.01818
Resp = Amt * 6.693e+005 + -1.217e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

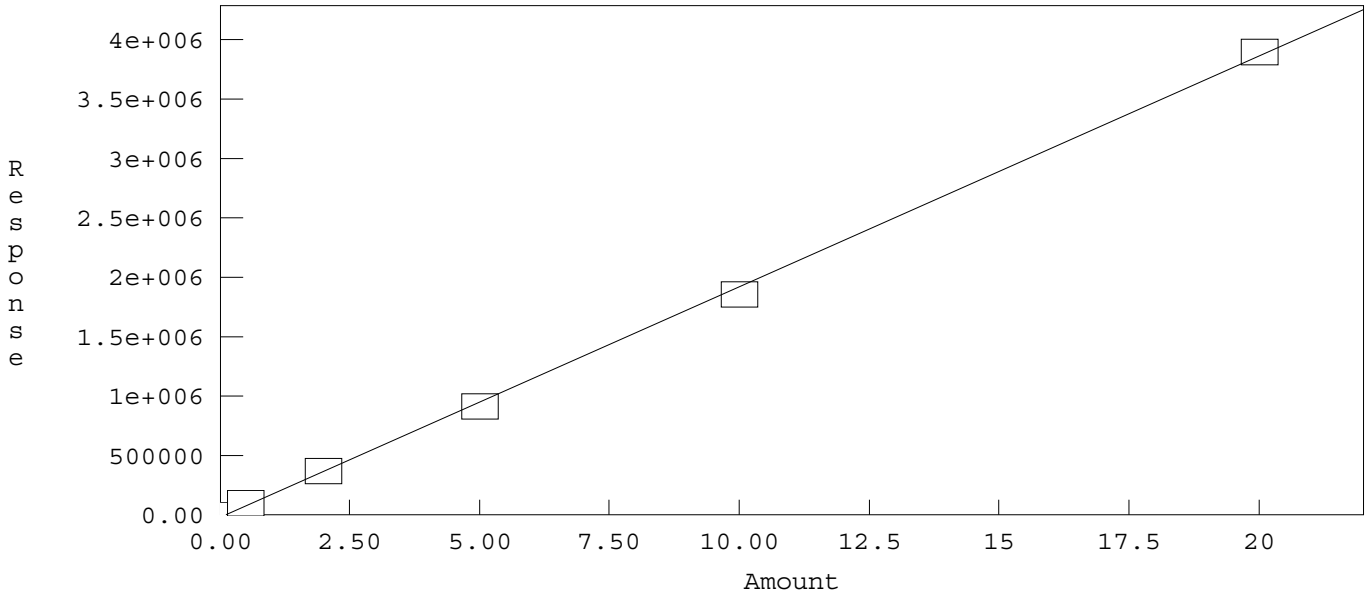
Component: Phosphate
Fit Type: Linear
r² = 0.998922
Amt = Resp * 4.344e-006 + -0.04161
Resp = Amt * 2.302e+005 + 9579
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999345
Amt = Resp * 5.147e-006 + 0.1238
Resp = Amt * 1.943e+005 + -2.405e+004
Standardization: External
Calibration: Area



4/21/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.328	0.50	2.500	0	93.1	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.609	0.50	2.500	0	104	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.445	0.50	2.500	0	97.8	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.336	0.50	2.500	0	93.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.650	0.50	2.500	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.306	0.50	2.500	0	92.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.437	0.50	2.500	0	97.5	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.516	0.50	2.500	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.467	0.50	2.500	0	98.7	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.400	0.50	2.500	0	96.0	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.485	0.50	2.500	0	99.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.380	0.50	2.500	0	95.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.815	0.50	5.000	0	96.3	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.039	0.50	5.000	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.900	0.50	5.000	0	98.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.803	0.50	5.000	0	96.1	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.791	0.50	5.000	0	95.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.783	0.50	5.000	0	95.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**CCB-5**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**108466**
Client ID:	**CCB**	Batch ID:	**R108466**	TestNo:	**EPA 300.0**			Analysis Date:	**5/10/2016**	SeqNo:	**2326716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	CCB	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/10/2016	SeqNo:	2326678

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 5/9/2016

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.83	
CCV-2	Chloride	3.83	
CCV-3	Chloride	3.83	
CCV-4	Chloride	3.77	
CCV-5	Chloride	3.75	
	Average	3.802	
	Lower Limit	3.602	
	Upper Limit	4.002	
MB-R108466_CL	Chloride	0	N.A
LCS-R108466_CL	Chloride	3.85	PASS
N019591-002CMS	Chloride	3.81	PASS
N019591-002CMSD	Chloride	3.79	PASS
N019606-001D	Chloride	3.83	PASS
N019606-002D	Chloride	3.79	PASS
N019606-003D	Chloride	3.8	PASS
N019592-006CMS	Chloride	3.75	PASS
N019610-009CDUP	Chloride	3.82	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 5/9/2016

Sample Name		Retention Time	Evaluation
CCV-1	Bromide	5.69	
CCV-2	Bromide	5.69	
CCV-3	Bromide	5.68	
CCV-4	Bromide	5.59	
CCV-5	Bromide	5.56	
	Average	5.642	
	Lower Limit	5.442	
	Upper Limit	5.842	
MB-R108466_BR	Bromide	0	N.A
LCS-R108466_BR	Bromide	5.75	PASS
N019606-001D	Bromide	5.61	PASS
N019606-001DDUP	Bromide	5.7	PASS
N019606-002D	Bromide	5.65	PASS
N019606-003D	Bromide	5.65	PASS
N019607-003DMS	Bromide	5.63	PASS
N019607-003DMSD	Bromide	5.69	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 5/9/2016

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.45	
CCV-2	Sulfate	9.4	
CCV-3	Sulfate	9.4	
CCV-4	Sulfate	9.33	
CCV-5	Sulfate	9.38	
	Average	9.392	
	Lower Limit	9.192	
	Upper Limit	9.592	
MB-R108466_SO4	Sulfate	0	N.A
LCS-R108466_SO4	Sulfate	9.5	PASS
N019606-001D	Sulfate	9.36	PASS
N019606-001DMS	Sulfate	9.31	PASS
N019606-001DMSD	Sulfate	9.33	PASS
N019606-002D	Sulfate	9.37	PASS
N019606-003D	Sulfate	9.31	PASS
N019610-009CDUP	Sulfate	9.44	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108493 **Analyst:** REB

ASSET #: N019606 **Date Analyzed:** 5/15/2016 , 5/17/16

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

Matrix spike(MS) failed in 05/15/16 run, high bias. However, reanalysis was done and passed criteria.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Reb 05/18/2016 Date: —

2nd Level Reviewer Mary 5/19/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N019606-001C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5254*20

= 10.508mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 11

Reb 05/18/2016

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

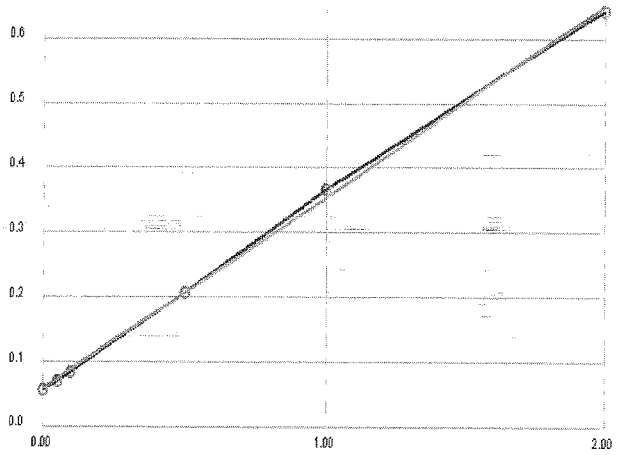
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2956x + 0.0582
Correlation	.999499

Calibrant	Energy	Set	Conc
1	0.0564	0.0000	-0.0060
2	0.0708	0.0500	0.0427
3	0.0830	0.1000	0.0839
4	0.2082	0.5000	0.5075
5	0.3673	1.0000	1.0457
6	0.6424	2.0000	1.9763



Notes:

2% CuSO4 - R160507A
R1 Buffer- R160507B
R2 Coloring Rgt. - R160507C

1° std- ISST-160211J
2° std- ISST-150730E

Reb 05/18/2016

366

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

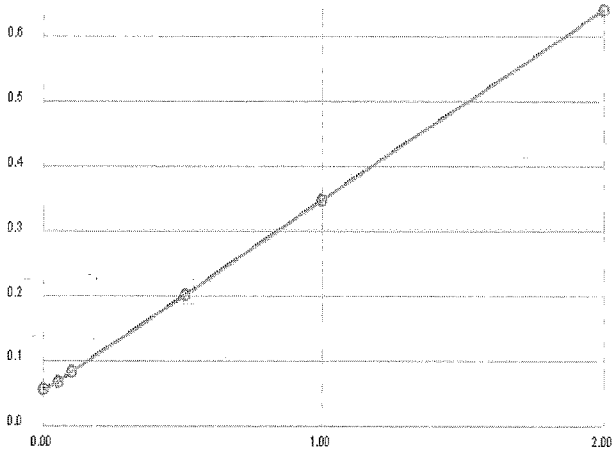
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2936x + 0.0545
Correlation	.999986



Calibrant	Energy	Set	Conc
1	0.0564	0.0000	0.0065
2	0.0673	0.0500	0.0436
3	0.0836	0.1000	0.0991
4	0.2016	0.5000	0.5011
5	0.3479	1.0000	0.9994
6	0.6417	2.0000	2.0002

Notes:

Reb 05/18/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **ICV**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2328759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.500	0.050	0.5000	0	99.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCV**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.517	0.050	0.5000	0	103	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCV**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.7	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCV**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **ICV**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.7	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **CCV**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.518	0.050	0.5000	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **ICB**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2328760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCB**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCB**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCB**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **ICB**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **CCB**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

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3151 W. Post Rd.
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702-307-2691
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Time start: 05-15-2016 15:50
Time end: 05-15-2016 18:42

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:02:22	0.0153		0.0627
2	<BLANK>	18:03:22	-0.0030		0.0573
3	<CAL1>	18:04:16	-0.0060	[0]	0.0564
4	<CAL2>	18:05:18	0.0427	[0.05]	0.0708
5	<CAL3>	18:06:13	0.0839	[0.1]	0.0830
6	<CAL4>	18:07:07	0.5075	[0.5]	0.2082
7	<CAL5>	18:08:09	1.0457	[1]	0.3673
8	<CAL6>	18:09:04	1.9763	[2]	0.6424
9	,BLANK,BLANK,1,	18:10:00	0.0180		0.0635
10	,ICV,ICV,1,	18:11:00	0.4997		0.2059
11	,ICB,ICB,1,	18:11:55	0.0000		0.0582
12	,MB-H2O,MBLK,1,	18:12:51	-0.0172		0.0531
13	,LCS-H2O,LCS,1,	18:13:51	0.4956		0.2047
14	,N019606-001C,SAMP,20,	18:14:46	0.5254		0.2135
15	,N019606-001CDUP,DUP,20,	18:15:42	0.5332		0.2158
16	,N019606-001CMS,MS,20,	18:16:43	1.1708		0.4043
17	,N019606-001CMSD,MSD,20,	18:17:37	1.0944		0.3817
18	,N019606-002C,SAMP,10,	18:18:39	0.6025		0.2363
19	,N019606-003C,SAMP,5,	18:19:35	1.2253		0.4204
20	,N019606-004C,SAMP,1,	18:20:29	0.0295		0.0669
21	,BLANK,BLANK,1	18:21:30	-0.0104		0.0551
22	,CCV-1,CCV,1,	18:22:25	0.5173		0.2111
23	,CCB-1,CCB,1,	18:23:21	-0.0115		0.0548
24	,N019606-005C,SAMP,1,	18:24:21	0.4131		0.1803
25	,N019606-006C,SAMP,1,	18:25:17	0.4388		0.1879
26	,N019606-007C,SAMP,1,	18:26:18	0.0285		0.0666

NR
NR

Reb 05/18/2016

375

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N019606-008C,SAMP,1,	18:27:00	0.0159		0.0629
28	,N019606-009C,SAMP,1,	18:27:50	0.5755		0.2283
29	,N019606-010C,SAMP,50,	18:28:33	0.5190		0.2116
30	,N019606-011C,SAMP,50,	18:29:15	0.5268		0.2139
31	,N019606-012C,SAMP,100,	18:30:05	0.6688		0.2559
32	,N019606-013C,SAMP,5,	18:30:47	0.4019		0.1770
33	,BLANK,BLANK,1	18:31:30	-0.0121		0.0546
34	,CCV-2,CCV,1,	18:32:18	0.4784		0.1996
35	,CCB-2,CCB,1,	18:33:01	-0.0148		0.0538
36	,N019606-014C,SAMP,1,	18:33:51	0.2416		0.1296
37	,N019628-001C,SAMP,1,	18:34:33	1.1089		0.3860
38	,N019628-002C,SAMP,5,	18:35:16	0.5376		0.2171
39	,N019628-003C,SAMP,1,	18:36:04	0.0011		0.0585
40	,N019628-004C,SAMP,10,	18:36:48	0.4530		0.1921
41	,N019628-005C,SAMP,20,	18:37:30	0.6276		0.2437
42	,N019628-006C,SAMP,1,	18:38:13	0.0126		0.0619
43	,BLANK,BLANK,1	18:39:01	-0.0233		0.0513
44	,CCV-3,CCV,1,	18:39:44	0.4740		0.1983
45	,CCB-3,CCB,1,	18:40:28	-0.0172		0.0531

Reb 05/18/2016

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Time start: 05-17-2016 15:09
Time end: 05-17-2016 17:36

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:02:56	0.0205		0.0605
2	<BLANK>	17:03:57	0.0143		0.0587
3	<CAL1>	17:04:51	0.0065	[0]	0.0564
4	<CAL2>	17:05:52	0.0436	[0.05]	0.0673
5	<CAL3>	17:06:48	0.0991	[0.1]	0.0836
6	<CAL4>	17:07:49	0.5011	[0.5]	0.2016
7	<CAL5>	17:08:43	0.9994	[1]	0.3479
8	<CAL6>	17:09:39	2.0002	[2]	0.6417
9	,BLANK,BLANK,1,	17:10:34	0.0269		0.0624
10	,ICV,ICV,1,	17:11:34	0.4837		0.1965
11	,ICB,ICB,1,	17:12:29	0.0102		0.0575
12	,MB-H2O,MBLK,1,	17:13:31	-0.0061		0.0527
13	,LCS-H2O,LCS,1,	17:14:26	0.4861		0.1972
14	,N019606-001C,SAMP,20,	17:15:20	0.5525		0.2167
15	,N019606-001CDUP,DUP,20,	17:16:22	0.5297		0.2100
16	,N019606-001CMS,MS,20,	17:17:17	1.0822		0.3722
17	,N019606-001CMSD,MSD,20,	17:18:17	1.0304		0.3570
18	,N019607-006C,SAMP,1,	17:19:13	0.0293		0.0631
19	,N019607-0010C,SAMP,5,	17:20:08	0.3131		0.1464
20	,N019743-003B,SAMP,1,	17:20:56	1.0498		0.3627
21	,BLANK,BLANK,1	17:21:40	0.0171		0.0595
22	,CCV-1,CCV,1,	17:22:29	0.5178		0.2065
23	,CCB-1,CCB,1,	17:23:11	0.0092		0.0572
24	,N019744-003C,SAMP,1,	17:23:54	0.0750		0.0765
25	,N019744-004C,SAMP,1,	17:24:42	0.0899		0.0809
26	,N019744-005C,SAMP,1,	17:25:26	0.0515		0.0696

NR

reported MS/MSD only

Reb 05/18/2016

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N019744-002B,SAMP,5,	17:26:14	0.0763		0.0769
28	,N019744-007C,SAMP,5,	17:26:57	0.3573		0.1594
29	,N019744-008C,SAMP,5,	17:27:40	1.1193		0.3831
30	,N019748-001E,SAMP,1,	17:28:28	0.6442		0.2436
31	,N019744-006C,SAMP,5,	17:29:12	0.1070		0.0859
32	,BLANK,BLANK,1	17:29:54	0.0096		0.0573
33	,BLANK,BLANK,1	17:30:43	-0.0051		0.0530
34	,CCV-2,CCV,1,	17:31:25	0.2977		0.1419
35	,CCV-2,CCV,1,	17:32:08	0.3039		0.1437
36	,CCV-2,CCV,1,	17:32:58	0.3175		0.1477
37	,CCB-2,CCB,1,	17:33:40	-0.0075		0.0523
38	,CCB-2,CCB,1,	17:34:23	-0.0129		0.0507

NR

Reb 05/18/2016

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/15/2016
Time Analyzed: 15:50 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R160507B
Color reagent: R160507C
2% Copper Sulfate: R160507A
Ammonium Hydroxide: CINV-160406F

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N019606-001C		8.18						
2)	N019606-002C		7.53						
3)	N019606-003C		8.39						
4)	N019606-004C		6.65						
5)	N019606-005C		7.80						
6)	N019606-006C		8.08						
7)	N019606-007C		7.85						
8)	N019606-008C		7.76						
9)	N019606-009C		8.04						
10)	N019606-010C		7.74						
11)	N019606-011C		7.50						
12)	N019606-012C		7.59						
13)	N019606-013C		8.23						
14)	N019606-014C		7.88						
15)	N019628-001C		6.97						
16)	N019628-002C		7.33						
17)	N019628-003C		6.53						
18)	N019628-004C		8.15						
19)	N019628-005C		8.71						
20)	N019628-006C		8.23						
21)									
22)									
23)									

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Book # 1

Reb 05/18/2016

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58387
ASSET #: N019606

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/14/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Mg in N019599-007C PS/MS/MSD & Ca in N019599-007C MSD failed. However LCS passed criteria

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/18/2016 Date: —

2nd Level Reviewer 5/19/2016 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58387
ASSET #: N019606

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/15/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only
%Rec of Na in N019606-001B PS/MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/18/2016 Date: —

2nd Level Reviewer 5/19/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in µg/L, in the original sample as follows:

Calcium ,µg/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate, mL / Amt. of Sample, mL

For Sample **N019606-001B** , the concentration in µg/L is calculated as follows:

Calcium ,µg/L = 113.192000000 * 1 * (25 / 25) * 1000

Calcium ,µg/L = 113192.000

Reporting results in two significant figures,

Calcium ,µg/L = 110000

% RSD SUMMARY

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.39	15	PASS
Standard1	ICAL	1	B	0.1	1.065	15	PASS
Standard3	ICAL	1	B	1	0.31	15	PASS
Standard4	ICAL	1	B	2.5	0.28	15	PASS
Standard5	ICAL	1	B	3.75	0.11	15	PASS
Standard6	ICAL	1	B	5	0.59	15	PASS
Standard7	ICAL	1	B	10	0.11	15	PASS
ICV	ICV	1	B	5.064	0.32	15	PASS
ICB	ICB	1	B	0.048	5.93	15	PASS
LLICV	CCV1	1	B	0.13	1.94	20	PASS
LLICV	CCV1	1	B	0.11	1.2	20	PASS
LLICV	CCV1	1	B	0.098	0.45	20	PASS
ICSA1	ICSA	1	B	0.053	1.35	15	PASS
ICSAB1	ICSAB	1	B	1.14	0.5	15	PASS
MB-58387	MBLK	1	B	0.0078	9.39	15	PASS
LCS1-58387	LCS	1	B	4.8	0.18	15	PASS
N019559-007C	SAMP	1	B	0.2	1.24	15	PASS
N019559-007C	SAMP	5	B	0.048	3.014	15	PASS
N019559-007C-PS	PS	1	B	5.27	0.39	15	PASS
N019559-007C-MS1	MS	1	B	5.27	0.65	15	PASS
N019559-007C-MSD1	MSD	1	B	5.29	0.64	15	PASS
N019606-001B	SAMP	1	B	0.82	1.27	15	PASS
N019606-002B	SAMP	1	B	0.51	0.91	15	PASS
N019606-003B	SAMP	1	B	0.51	0.21	15	PASS
CCV1	CCV	1	B	4.97	0.64	15	PASS
CCB1	CCB	1	B	0.044	0.84	15	PASS
N019607-003B	SAMP	1	B	1.075	0.84	15	PASS
CCV2	CCV	1	B	5.056	0.62	15	PASS
CCB2	CCB	1	B	0.065	5.38	15	PASS
CCV3	CCV	1	B	5.027	0.53	15	PASS
CCB3	CCB	1	B	0.048	5.36	15	PASS
CCV4	CCV	1	B	5.015	0.22	15	PASS
CCB4	CCB	1	B	0.049	6.0074	15	PASS
CCV5	CCV	1	B	4.96	1.04	15	PASS
CCB5	CCB	1	B	0.043	6.36	15	PASS
LLCCV1	CCV2	1	B	0.11	1.28	20	PASS
ICSA2	ICSA	1	B	0.065	2.89	15	PASS
ICSAB2	ICSAB	1	B	1.15	0.91	15	PASS
CCV6	CCV	1	B	4.95	0.82	15	PASS
CCB6	CCB	1	B	0.043	7.33	15	PASS
CCV7	CCV	1	B	5.022	0.16	15	PASS
CCB7	CCB	1	B	0.046	6.019	15	PASS

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLCCV2	CCV2	1	B	0.11	2.29	20	PASS
ICSA3	ICSA	1	B	0.071	2.75	15	PASS
ICSAB3	ICSAB	1	B	1.16	1.39	15	PASS
CalBlk	IBLK	1	Ca	0	10.36	15	PASS
Standard1	ICAL	1	Ca	0.2	14.28	15	PASS
Standard2	ICAL	1	Ca	1	0.93	15	PASS
Standard3	ICAL	1	Ca	2	0.18	15	PASS
Standard4	ICAL	1	Ca	5	0.3	15	PASS
Standard5	ICAL	1	Ca	7.5	0.11	15	PASS
Standard6	ICAL	1	Ca	10	0.83	15	PASS
Standard7	ICAL	1	Ca	20	0.55	15	PASS
ICV	ICV	1	Ca	9.87	0.53	15	PASS
ICB	ICB	1	Ca	0.011	65.13	15	<PQL
LLICV	CCV1	1	Ca	0.21	23.93	20	<PQL
LLICV	CCV1	1	Ca	0.19	24.2	20	<PQL
LLICV	CCV1	1	Ca	0.17	11.35	20	PASS
ICSA1	ICSA	1	Ca	441.53	0.44	15	PASS
ICSAB1	ICSAB	1	Ca	541.43	0.4	15	PASS
MB-58387	MBLK	1	Ca	-0.0069	48.69	15	<PQL
LCS1-58387	LCS	1	Ca	8.9	0.69	15	PASS
N019559-007C	SAMP	1	Ca	72.054	0.38	15	PASS
N019559-007C	SAMP	5	Ca	15.21	0.55	15	PASS
N019559-007C-PS	PS	1	Ca	80.56	0.4	15	PASS
N019559-007C-MS1	MS	1	Ca	80.58	0.46	15	PASS
N019559-007C-MSD1	MSD	1	Ca	85.75	0.49	15	PASS
N019606-001B	SAMP	1	Ca	113.19	0.87	15	PASS
N019606-002B	SAMP	1	Ca	116.27	0.25	15	PASS
N019606-003B	SAMP	1	Ca	121.22	0.27	15	PASS
CCV1	CCV	1	Ca	9.49	0.076	15	PASS
CCB1	CCB	1	Ca	-0.062	32.86	15	<PQL
N019607-003B	SAMP	1	Ca	104.28	1.14	15	PASS
CCV2	CCV	1	Ca	9.29	0.31	15	PASS
CCB2	CCB	1	Ca	0.0014	350.18	15	<PQL
CCV3	CCV	1	Ca	9.2	0.27	15	PASS
CCB3	CCB	1	Ca	-0.015	174.34	15	<PQL
CCV4	CCV	1	Ca	9.21	0.25	15	PASS
CCB4	CCB	1	Ca	0.016	184.67	15	<PQL
CCV5	CCV	1	Ca	9.093	0.66	15	PASS
CCB5	CCB	1	Ca	0.024	117.64	15	<PQL
LLCCV1	CCV2	1	Ca	0.14	14.69	20	PASS
ICSA2	ICSA	1	Ca	418.95	0.73	15	PASS
ICSAB2	ICSAB	1	Ca	512.06	0.62	15	PASS

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV6	CCV	1	Ca	9.034	0.43	15	PASS
CCB6	CCB	1	Ca	-0.0015	393.44	15	<PQL
CCV7	CCV	1	Ca	9.13	0.42	15	PASS
CCB7	CCB	1	Ca	-0.032	32.023	15	<PQL
LLCCV2	CCV2	1	Ca	0.13	20.49	20	<PQL
ICSA3	ICSA	1	Ca	415.75	0.37	15	PASS
ICSAB3	ICSAB	1	Ca	512.39	0.84	15	PASS
CalBlk	IBLK	1	Fe	0	1.41	15	PASS
Standard1	ICAL	1	Fe	0.02	2.75	15	PASS
Standard2	ICAL	1	Fe	0.05	0.96	15	PASS
Standard3	ICAL	1	Fe	2	0.39	15	PASS
Standard4	ICAL	1	Fe	5	0.081	15	PASS
Standard5	ICAL	1	Fe	7.5	0.22	15	PASS
Standard6	ICAL	1	Fe	10	0.55	15	PASS
Standard7	ICAL	1	Fe	20	0.16	15	PASS
ICV	ICV	1	Fe	10.18	0.37	15	PASS
ICB	ICB	1	Fe	0.00015	188.11	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.55	20	PASS
LLICV	CCV1	1	Fe	0.021	4.87	20	PASS
LLICV	CCV1	1	Fe	0.018	3.79	20	PASS
ICSA1	ICSA	1	Fe	165.23	0.046	15	PASS
ICSAB1	ICSAB	1	Fe	185.58	0.086	15	PASS
MB-58387	MBLK	1	Fe	0.0045	18.09	15	<PQL
LCS1-58387	LCS	1	Fe	0.098	0.94	15	PASS
N019559-007C	SAMP	1	Fe	0.042	1.28	15	PASS
N019559-007C	SAMP	5	Fe	0.01	2.96	15	PASS
N019559-007C-PS	PS	1	Fe	0.15	0.63	15	PASS
N019559-007C-MS1	MS	1	Fe	0.15	0.35	15	PASS
N019559-007C-MSD1	MSD	1	Fe	0.15	0.7	15	PASS
N019606-001B	SAMP	1	Fe	0.017	0.9	15	PASS
N019606-002B	SAMP	1	Fe	0.015	4.085	15	PASS
N019606-003B	SAMP	1	Fe	0.014	2.24	15	PASS
CCV1	CCV	1	Fe	9.86	0.58	15	PASS
CCB1	CCB	1	Fe	-0.0021	6.24	15	PASS
N019607-003B	SAMP	1	Fe	0.021	1.32	15	PASS
CCV2	CCV	1	Fe	9.94	0.34	15	PASS
CCB2	CCB	1	Fe	0.0005	50.028	15	<PQL
CCV3	CCV	1	Fe	9.9	0.49	15	PASS
CCB3	CCB	1	Fe	0.00054	42.48	15	<PQL
CCV4	CCV	1	Fe	9.85	0.22	15	PASS
CCB4	CCB	1	Fe	0.00052	122.27	15	<PQL
CCV5	CCV	1	Fe	9.72	0.61	15	PASS

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB5	CCB	1	Fe	0.00016	187.057	15	<PQL
LLCCV1	CCV2	1	Fe	0.018	1.055	20	PASS
ICSA2	ICSA	1	Fe	160.96	0.099	15	PASS
ICSAB2	ICSAB	1	Fe	181.16	0.11	15	PASS
CCV6	CCV	1	Fe	9.66	0.76	15	PASS
CCB6	CCB	1	Fe	0.00029	74.59	15	<PQL
CCV7	CCV	1	Fe	9.77	0.31	15	PASS
CCB7	CCB	1	Fe	0.00054	37.91	15	<PQL
LLCCV2	CCV2	1	Fe	0.018	2.41	20	PASS
ICSA3	ICSA	1	Fe	160.3	0.12	15	PASS
ICSAB3	ICSAB	1	Fe	180.08	0.12	15	PASS
CalBlk	IBLK	1	Mg	0	11.15	15	PASS
Standard1	ICAL	1	Mg	0.1	0.98	15	PASS
Standard2	ICAL	1	Mg	1	0.81	15	PASS
Standard3	ICAL	1	Mg	2	0.55	15	PASS
Standard4	ICAL	1	Mg	5	0.17	15	PASS
Standard5	ICAL	1	Mg	7.5	0.25	15	PASS
Standard6	ICAL	1	Mg	10	0.38	15	PASS
Standard7	ICAL	1	Mg	20	0.47	15	PASS
ICV	ICV	1	Mg	10	0.38	15	PASS
ICB	ICB	1	Mg	-0.0013	32.2	15	<PQL
LLICV	CCV1	1	Mg	0.11	0.55	20	PASS
LLICV	CCV1	1	Mg	0.1	1.37	20	PASS
LLICV	CCV1	1	Mg	0.091	2.034	20	PASS
ICSA1	ICSA	1	Mg	426.51	0.2	15	PASS
ICSAB1	ICSAB	1	Mg	492.82	0.14	15	PASS
MB-58387	MBLK	1	Mg	0.0039	41.82	15	<PQL
LCS1-58387	LCS	1	Mg	9.64	0.3	15	PASS
N019559-007C	SAMP	1	Mg	23.28	0.36	15	PASS
N019559-007C	SAMP	5	Mg	4.82	0.055	15	PASS
N019559-007C-PS	PS	1	Mg	30.82	0.15	15	PASS
N019559-007C-MS1	MS	1	Mg	30.65	0.28	15	PASS
N019559-007C-MSD1	MSD	1	Mg	30.73	0.22	15	PASS
N019606-001B	SAMP	1	Mg	27.13	0.97	15	PASS
N019606-002B	SAMP	1	Mg	17.91	0.63	15	PASS
N019606-003B	SAMP	1	Mg	18.59	0.42	15	PASS
CCV1	CCV	1	Mg	9.014	0.53	15	PASS
CCB1	CCB	1	Mg	-0.0014	3.43	15	PASS
N019607-003B	SAMP	1	Mg	15.96	1.16	15	PASS
CCV2	CCV	1	Mg	9.066	0.18	15	PASS
CCB2	CCB	1	Mg	-0.00092	110.4	15	<PQL
CCV3	CCV	1	Mg	9.035	0.23	15	PASS

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB3	CCB	1	Mg	-0.0008	67.44	15	<PQL
CCV4	CCV	1	Mg	9.19	0.43	15	PASS
CCB4	CCB	1	Mg	-0.00065	135.026	15	<PQL
CCV5	CCV	1	Mg	9.038	0.65	15	PASS
CCB5	CCB	1	Mg	-0.00012	321.92	15	<PQL
LLCCV1	CCV2	1	Mg	0.087	0.22	20	PASS
ICSA2	ICSA	1	Mg	408.81	0.16	15	PASS
ICSAB2	ICSAB	1	Mg	476.19	0.078	15	PASS
CCV6	CCV	1	Mg	8.91	0.61	15	PASS
CCB6	CCB	1	Mg	0.00077	11.61	15	PASS
CCV7	CCV	1	Mg	9.079	0.68	15	PASS
CCB7	CCB	1	Mg	0.001	90.56	15	<PQL
LLCCV2	CCV2	1	Mg	0.087	0.96	20	PASS
ICSA3	ICSA	1	Mg	408.4	0.18	15	PASS
ICSAB3	ICSAB	1	Mg	475.99	0.12	15	PASS

RSD SUMMARY: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	26.94	15	<PQL
Standard1	ICAL	1	Na	0.1	4.64	15	PASS
Standard2	ICAL	1	Na	1	0.8	15	PASS
Standard3	ICAL	1	Na	5	0.18	15	PASS
Standard4	ICAL	1	Na	10	0.15	15	PASS
Standard5	ICAL	1	Na	20	0.12	15	PASS
Standard6	ICAL	1	Na	40	0.11	15	PASS
ICV	ICV	1	Na	10.1	0.047	15	PASS
ICB	ICB	1	Na	0.018	28.26	15	<PQL
ICSA1	ICSA	1	Na	0.0065	59.65	15	<PQL
ICSAB1	ICSAB	1	Na	10.045	0.062	15	PASS
MB-58387	MBLK	1	Na	0.066	7.083	15	PASS
LCS2-58387	LCS	1	Na	20.67	0.11	15	PASS
N019606-001B	SAMP	5	Na	94.94	0.61	15	PASS
N019606-002B	SAMP	5	Na	61.74	0.062	15	PASS
CCV1	CCV	1	Na	10.045	0.3	15	PASS
CCB1	CCB	1	Na	0.036	9.14	15	PASS
N019606-003B	SAMP	5	Na	64.53	0.16	15	PASS
N019607-003B	SAMP	5	Na	91.75	0.97	15	PASS
CCV2	CCV	1	Na	9.77	0.078	15	PASS
CCB2	CCB	1	Na	0.023	22.15	15	<PQL
CCV3	CCV	1	Na	9.83	0.15	15	PASS
CCB3	CCB	1	Na	0.048	10.88	15	PASS
CCV4	CCV	1	Na	11.3	1.044	15	PASS
CCB4	CCB	1	Na	1.33	1.48	15	PASS
CCV4	CCV	1	Na	10.61	0.21	15	PASS
CCB4	CCB	1	Na	0.66	0.46	15	PASS
CCB4	CCB	1	Na	0.54	0.85	15	PASS
CCB4	CCB	1	Na	0.45	1.055	15	PASS
CCV5	CCV	1	Na	22.54	94.68	15	NR!
CCV5	CCV	1	Na	10.3	0.24	15	PASS
CCB5	CCB	1	Na	0.38	2.38	15	PASS
ICSA2	ICSA	1	Na	0.41	1.029	15	PASS
ICSAB2	ICSAB	1	Na	10.35	0.21	15	PASS
CCV6	CCV	1	Na	10.21	0.12	15	PASS
CCB6	CCB	1	Na	0.29	1.37	15	PASS
N019606-001B	SAMP	25	Na	19.27	0.13	15	PASS
N019606-001B	SAMP	125	Na	4.16	0.28	15	PASS
N019606-001B-PS	PS	25	Na	19.63	0.094	15	PASS
N019606-001B-MS2	MS	25	Na	19.34	0.15	15	PASS
N019606-001B-MSD2	MSD	25	Na	19.47	0.23	15	PASS
N019606-002B	SAMP	25	Na	12.39	0.14	15	PASS

RSD SUMMARY: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N019606-003B	SAMP	25	Na	13.091	0.15	15	PASS
N019607-003B	SAMP	25	Na	18.8	0.27	15	PASS
CCV7	CCV	1	Na	10.19	0.35	15	PASS
CCB7	CCB	1	Na	0.26	0.3	15	PASS
CCV8	CCV	1	Na	10.16	0.095	15	PASS
CCB8	CCB	1	Na	0.23	2.48	15	PASS
CCV9	CCV	1	Na	10.053	0.36	15	PASS
CCB9	CCB	1	Na	0.22	1.27	15	PASS
CCV10	CCV	1	Na	10.085	0.18	15	PASS
CCB10	CCB	1	Na	0.18	1.51	15	PASS
ICSA3	ICSA	1	Na	0.18	1.72	15	PASS
ICSAB3	ICSAB	1	Na	10	0.2	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160514A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/14/2016	01:19:37 PM
2	Standard1	ICAL	1	05/14/2016	01:24:29 PM
3	Standard2	ICAL	1	05/14/2016	01:29:48 PM
4	Standard3	ICAL	1	05/14/2016	01:35:07 PM
5	Standard4	ICAL	1	05/14/2016	01:40:30 PM
6	Standard5	ICAL	1	05/14/2016	01:46:53 PM
7	Standard6	ICAL	1	05/14/2016	01:53:14 PM
8	Standard7	ICAL	1	05/14/2016	01:59:35 PM
9	ICV	ICV	1	05/14/2016	02:03:51 PM
1	ICB	ICB	1	05/14/2016	02:17:44 PM
2	LLICV	CCV1	1	05/14/2016	02:23:23 PM
2	LLICV	CCV1	1	05/14/2016	02:31:45 PM
2	LLICV	CCV1	1	05/14/2016	02:36:09 PM
4	ICSA1	ICSA	1	05/14/2016	02:41:48 PM
5	ICSAB1	ICSAB	1	05/14/2016	02:48:35 PM
38	MB-58387	MBLK	1	05/14/2016	02:55:23 PM
39	LCS1-58387	LCS	1	05/14/2016	03:00:32 PM
40	N019559-007C	SAMP	1	05/14/2016	03:07:13 PM
41	N019559-007C	SAMP	5	05/14/2016	03:12:54 PM
42	N019559-007C-PS	PS	1	05/14/2016	03:18:34 PM
43	N019559-007C-MS1	MS	1	05/14/2016	03:25:05 PM
44	N019559-007C-MSD1	MSD	1	05/14/2016	03:31:46 PM
45	N019606-001B	SAMP	1	05/14/2016	03:38:26 PM
46	N019606-002B	SAMP	1	05/14/2016	03:45:08 PM
47	N019606-003B	SAMP	1	05/14/2016	03:51:49 PM
7	CCV1	CCV	1	05/14/2016	03:58:31 PM
1	CCB1	CCB	1	05/14/2016	04:05:11 PM
48	N019607-003B	SAMP	1	05/14/2016	04:10:20 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
49	MB-57298	MBLK	1	05/14/2016	04:17:02 PM
50	LCS1-57298	LCS	1	05/14/2016	04:22:44 PM
51	N019614-002C	SAMP	1	05/14/2016	04:29:26 PM
52	N019593-001B	SAMP	1	05/14/2016	04:36:07 PM
53	N019593-001B	SAMP	5	05/14/2016	04:41:48 PM
54	N019593-001B-PS	PS	1	05/14/2016	04:47:13 PM
55	N019593-001B-MS1	MS	1	05/14/2016	04:53:55 PM
56	N019593-001B-MSD1	MSD	1	05/14/2016	05:00:36 PM
57	MB-58401	MBLK	1	05/14/2016	05:07:19 PM
7	CCV2	CCV	1	05/14/2016	05:12:58 PM
1	CCB2	CCB	1	05/14/2016	05:19:39 PM
58	LCS1-58401	LCS	1	05/14/2016	05:25:18 PM
59	N019731-001B	SAMP	1	05/14/2016	05:32:00 PM
60	N019731-001B	SAMP	5	05/14/2016	05:37:42 PM
61	N019731-001B-PS	PS	1	05/14/2016	05:43:24 PM
62	N019731-001B-MS	MS	1	05/14/2016	05:50:09 PM
63	N019731-001B-MSD	MSD	1	05/14/2016	05:56:52 PM
64	N019748-001D	SAMP	1	05/14/2016	06:03:34 PM
65	N019748-002A	SAMP	1	05/14/2016	06:09:16 PM
66	N019748-003A	SAMP	1	05/14/2016	06:14:57 PM
67	MB-58328	MBLK	1	05/14/2016	06:20:38 PM
7	CCV3	CCV	1	05/14/2016	06:25:49 PM
1	CCB3	CCB	1	05/14/2016	06:32:30 PM
68	LCS1-58328	LCS	1	05/14/2016	06:38:09 PM
69	N019637-001C	SAMP	1	05/14/2016	06:44:51 PM
70	N019637-001C	SAMP	5	05/14/2016	06:50:32 PM
71	N019637-001C-PS	PS	1	05/14/2016	06:56:14 PM
72	N019637-001C-MS1	MS	1	05/14/2016	07:02:56 PM
73	N019637-001C-MSD1	MSD	1	05/14/2016	07:09:39 PM
74	N019637-002C	SAMP	1	05/14/2016	07:16:21 PM
75	N019637-003C	SAMP	1	05/14/2016	07:22:02 PM
76	N019637-004C	SAMP	1	05/14/2016	07:28:44 PM
77	N019637-005C	SAMP	1	05/14/2016	07:35:26 PM
7	CCV4	CCV	1	05/14/2016	07:42:08 PM
1	CCB4	CCB	1	05/14/2016	07:48:49 PM
78	N019639-001B	SAMP	1	05/14/2016	07:54:27 PM
79	N019639-002B	SAMP	1	05/14/2016	08:00:08 PM
80	N019639-005B	SAMP	1	05/14/2016	08:06:50 PM
81	N019639-007B	SAMP	1	05/14/2016	08:13:31 PM
82	N019639-008B	SAMP	1	05/14/2016	08:19:11 PM
83	N019639-008B-MS1	MS	1	05/14/2016	08:24:51 PM
84	N019639-009B	SAMP	1	05/14/2016	08:31:34 PM
85	N019639-010B	SAMP	1	05/14/2016	08:37:15 PM
86	N019639-011B	SAMP	1	05/14/2016	08:42:57 PM
87	N019639-012B	SAMP	1	05/14/2016	08:49:39 PM
7	CCV5	CCV	1	05/14/2016	08:56:21 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CCB5	CCB	1	05/14/2016	09:03:03 PM
2	LLCCV1	CCV2	1	05/14/2016	09:08:43 PM
4	ICSA2	ICSA	1	05/14/2016	09:14:22 PM
5	ICSAB2	ICSAB	1	05/14/2016	09:21:10 PM
88	N019639-013B	SAMP	1	05/14/2016	09:27:58 PM
89	N019639-014B	SAMP	1	05/14/2016	09:34:39 PM
90	N019639-015B	SAMP	1	05/14/2016	09:41:21 PM
91	N019639-015B	SAMP	1	05/14/2016	09:47:03 PM
92	N019639-016B	SAMP	1	05/14/2016	09:52:45 PM
93	N019639-017B	SAMP	1	05/14/2016	09:58:26 PM
94	N019639-018B	SAMP	1	05/14/2016	10:04:07 PM
98	MB-58406	MBLK	1	05/14/2016	10:10:47 PM
99	LCS1-58406	LCS	1	05/14/2016	10:15:59 PM
100	N019639-019B	SAMP	1	05/14/2016	10:22:42 PM
7	CCV6	CCV	1	05/14/2016	10:29:24 PM
1	CCB6	CCB	1	05/14/2016	10:36:05 PM
101	N019639-019B	SAMP	5	05/14/2016	10:41:43 PM
102	N019639-019B-PS	PS	1	05/14/2016	10:47:25 PM
103	N019639-019B-MS1	MS	1	05/14/2016	10:54:08 PM
104	N019639-019B-MSD1	MSD	1	05/14/2016	11:00:51 PM
105	N019654-001B	SAMP	1	05/14/2016	11:07:35 PM
106	N019654-002B	SAMP	1	05/14/2016	11:14:17 PM
107	N019654-003B	SAMP	1	05/14/2016	11:19:58 PM
108	N019654-005B	SAMP	1	05/14/2016	11:25:40 PM
109	N019654-006B	SAMP	1	05/14/2016	11:31:22 PM
110	N019654-007B	SAMP	1	05/14/2016	11:37:04 PM
7	CCV7	CCV	1	05/14/2016	11:42:45 PM
1	CCB7	CCB	1	05/14/2016	11:49:26 PM
2	LLCCV2	CCV2	1	05/14/2016	11:55:04 PM
4	ICSA3	ICSA	1	05/15/2016	12:00:43 AM
5	ICSAB3	ICSAB	1	05/15/2016	12:07:29 AM

INJECTION LOG: 160515A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207G,0.025<50mL
Standard2	MWST-151207G,0.25<50mL
Standard3	MWST-151207G,1.25<50mL
Standard4	MWST-151207G,2.5<50mL
Standard5	MWST-151207G,5<50mL
Standard6	MWST-151207G,10<50mL
ICV	MSST-140120B/-111006A/-150717A
CCV	MWST-151207G,2.5<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207H
Int. Std. (Sc):	MSST-150923A
PS Spike	MSST-140120B/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/15/2016	03:23:53 PM
2	Standard1	ICAL	1	05/15/2016	03:27:24 PM
3	Standard2	ICAL	1	05/15/2016	03:30:44 PM
4	Standard3	ICAL	1	05/15/2016	03:34:03 PM
5	Standard4	ICAL	1	05/15/2016	03:37:54 PM
6	Standard5	ICAL	1	05/15/2016	03:41:49 PM
7	Standard6	ICAL	1	05/15/2016	03:45:40 PM
8	ICV	ICV	1	05/15/2016	03:49:53 PM
1	ICB	ICB	1	05/15/2016	03:53:45 PM
3	ICSA1	ICSA	1	05/15/2016	03:57:03 PM
4	ICSAB1	ICSAB	1	05/15/2016	04:00:21 PM
38	MB-58401	MBLK	1	05/15/2016	04:06:29 PM
39	LCS2-58401	LCS	1	05/15/2016	04:09:48 PM
40	N019748-001D	SAMP	1	05/15/2016	04:13:43 PM
41	N019748-002A	SAMP	1	05/15/2016	04:17:35 PM
42	N019748-003A	SAMP	1	05/15/2016	04:21:26 PM
43	MB-58387	MBLK	1	05/15/2016	04:26:16 PM
44	LCS2-58387	LCS	1	05/15/2016	04:29:34 PM
45	N019606-001B	SAMP	5	05/15/2016	04:32:54 PM
46	N019606-002B	SAMP	5	05/15/2016	04:36:44 PM
5	CCV1	CCV	1	05/15/2016	04:40:04 PM
1	CCB1	CCB	1	05/15/2016	04:43:57 PM
47	N019606-003B	SAMP	5	05/15/2016	04:47:15 PM
48	N019607-003B	SAMP	5	05/15/2016	04:51:06 PM
49	MB-58328	MBLK	1	05/15/2016	04:54:57 PM
50	LCS2-58328	LCS	1	05/15/2016	05:00:40 PM
51	N019637-001C	SAMP	5	05/15/2016	05:04:34 PM
52	N019637-002C	SAMP	5	05/15/2016	05:07:55 PM
53	N019637-003C	SAMP	5	05/15/2016	05:11:14 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N019637-004C	SAMP	5	05/15/2016	05:14:33 PM
55	N019637-005C	SAMP	5	05/15/2016	05:17:53 PM
56	MB-58406	MBLK	1	05/15/2016	05:21:12 PM
5	CCV2	CCV	1	05/15/2016	05:24:32 PM
1	CCB2	CCB	1	05/15/2016	05:28:25 PM
57	LCS2-58406	LCS	1	05/15/2016	05:31:41 PM
58	N019730-001B	SAMP	5	05/15/2016	05:35:02 PM
59	N019730-002B	SAMP	5	05/15/2016	05:38:02 PM
60	N019730-003B	SAMP	5	05/15/2016	05:42:53 PM
61	MB-58410	MBLK	1	05/15/2016	05:47:46 PM
62	LCS2-58410	LCS	1	05/15/2016	05:51:07 PM
63	N019742-001C	SAMP	5	05/15/2016	05:54:28 PM
64	N019742-002C	SAMP	5	05/15/2016	05:57:47 PM
65	N019743-001A	SAMP	5	05/15/2016	06:01:07 PM
66	N019743-002A	SAMP	5	05/15/2016	06:04:27 PM
5	CCV3	CCV	1	05/15/2016	06:07:46 PM
1	CCB3	CCB	1	05/15/2016	06:11:41 PM
67	N019743-003C	SAMP	5	05/15/2016	06:14:57 PM
68	N019743-004A	SAMP	5	05/15/2016	06:18:17 PM
69	N019743-005A	SAMP	5	05/15/2016	06:21:36 PM
70	N019743-006C	SAMP	5	05/15/2016	06:24:55 PM
71	N019744-001D	SAMP	5	05/15/2016	06:29:46 PM
72	N019744-002C	SAMP	5	05/15/2016	06:35:24 PM
73	N019744-003D	SAMP	5	05/15/2016	06:40:17 PM
74	N019744-004D	SAMP	5	05/15/2016	06:45:45 PM
75	N019744-005D	SAMP	5	05/15/2016	06:51:23 PM
76	N019744-006D	SAMP	5	05/15/2016	06:56:22 PM
5	CCV4	CCV	1	05/15/2016	07:01:51 PM
1	CCB4	CCB	1	05/15/2016	07:05:45 PM
5	CCV4	CCV	1	05/15/2016	07:12:13 PM
1	CCB4	CCB	1	05/15/2016	07:23:28 PM
1	CCB4	CCB	1	05/15/2016	07:33:18 PM
1	CCB4	CCB	1	05/15/2016	07:40:55 PM
77	N019744-007D	SAMP	100	05/15/2016	07:46:53 PM
78	N019744-008D	SAMP	100	05/15/2016	07:50:13 PM
79	MB-58396	MBLK	1	05/15/2016	07:53:34 PM
80	LCS2-58396	LCS	1	05/15/2016	07:56:54 PM
81	N019651-001C	SAMP	1	05/15/2016	08:00:51 PM
82	N019651-002C	SAMP	1	05/15/2016	08:04:10 PM
83	N019651-003B	SAMP	1	05/15/2016	08:07:30 PM
84	N019651-004B	SAMP	1	05/15/2016	08:10:50 PM
85	N019651-005A	SAMP	1	05/15/2016	08:14:10 PM
86	N019651-006A	SAMP	1	05/15/2016	08:17:31 PM
5	CCV5	CCV	1	05/15/2016	08:20:52 PM
5	CCV5	CCV	1	05/15/2016	08:24:10 PM
1	CCB5	CCB	1	05/15/2016	08:28:04 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
3	ICSA2	ICSA	1	05/15/2016	08:31:21 PM
4	ICSAB2	ICSAB	1	05/15/2016	08:34:38 PM
87	N019651-007A	SAMP	1	05/15/2016	08:38:32 PM
88	N019748-001D	SAMP	5	05/15/2016	08:41:52 PM
89	N019748-001D	SAMP	25	05/15/2016	08:45:12 PM
90	N019748-001D-PS	PS	1	05/15/2016	08:48:31 PM
91	N019748-001D-PS	PS	5	05/15/2016	08:53:22 PM
92	N019748-001D-MS2	MS	1	05/15/2016	08:56:42 PM
93	N019748-001D-MS2	MS	5	05/15/2016	09:01:34 PM
94	N019748-001D-MSD2	MSD	1	05/15/2016	09:04:54 PM
95	N019748-001D-MSD2	MSD	5	05/15/2016	09:09:47 PM
96	N019748-002A	SAMP	5	05/15/2016	09:13:07 PM
5	CCV6	CCV	1	05/15/2016	09:16:28 PM
1	CCB6	CCB	1	05/15/2016	09:20:22 PM
97	N019748-003A	SAMP	5	05/15/2016	09:23:40 PM
98	N019606-001B	SAMP	25	05/15/2016	09:27:02 PM
99	N019606-001B	SAMP	125	05/15/2016	09:30:23 PM
100	N019606-001B-PS	PS	25	05/15/2016	09:33:44 PM
101	N019606-001B-MS2	MS	25	05/15/2016	09:37:05 PM
102	N019606-001B-MSD2	MSD	25	05/15/2016	09:40:27 PM
103	N019606-002B	SAMP	25	05/15/2016	09:43:47 PM
104	N019606-003B	SAMP	25	05/15/2016	09:47:08 PM
105	N019607-003B	SAMP	25	05/15/2016	09:50:30 PM
106	N019637-004C	SAMP	25	05/15/2016	09:53:51 PM
5	CCV7	CCV	1	05/15/2016	09:57:12 PM
1	CCB7	CCB	1	05/15/2016	10:01:05 PM
107	N019637-004C-PS	PS	5	05/15/2016	10:04:22 PM
108	N019637-004C-MS2	MS	5	05/15/2016	10:08:14 PM
109	N019637-004C-MSD2	MSD	5	05/15/2016	10:12:08 PM
110	N019730-001B	SAMP	25	05/15/2016	10:16:02 PM
111	N019730-001B	SAMP	125	05/15/2016	10:19:23 PM
112	N019730-001B-PS	PS	25	05/15/2016	10:22:43 PM
113	N019730-001B-MS2	MS	25	05/15/2016	10:26:05 PM
114	N019730-001B-MSD2	MSD	25	05/15/2016	10:29:26 PM
115	N019730-002B	SAMP	50	05/15/2016	10:32:47 PM
116	N019730-003B	SAMP	50	05/15/2016	10:36:09 PM
5	CCV8	CCV	1	05/15/2016	10:39:31 PM
1	CCB8	CCB	1	05/15/2016	10:43:25 PM
117	N019743-006C	SAMP	50	05/15/2016	10:46:42 PM
118	N019743-006C	SAMP	250	05/15/2016	10:50:02 PM
119	N019743-006C-PS	PS	50	05/15/2016	10:53:24 PM
120	N019743-006C-MS2	MS	50	05/15/2016	10:56:44 PM
121	N019743-006C-MSD2	MSD	50	05/15/2016	11:00:04 PM
122	N019744-001D	SAMP	500	05/15/2016	11:03:24 PM
123	N019744-002C	SAMP	100	05/15/2016	11:06:46 PM
124	N019744-003D	SAMP	500	05/15/2016	11:10:07 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
125	N019744-004D	SAMP	500	05/15/2016	11:13:28 PM
126	N019744-005D	SAMP	500	05/15/2016	11:16:49 PM
5	CCV9	CCV	1	05/15/2016	11:20:09 PM
1	CCB9	CCB	1	05/15/2016	11:24:03 PM
127	N019744-006D	SAMP	500	05/15/2016	11:27:22 PM
128	N019744-007D	SAMP	500	05/15/2016	11:32:13 PM
129	N019744-008D	SAMP	200	05/15/2016	11:35:34 PM
130	MB-58396	MBLK	1	05/15/2016	11:38:55 PM
131	LCS2-58396	LCS	1	05/15/2016	11:42:16 PM
132	N019651-007A	SAMP	5	05/15/2016	11:45:40 PM
133	N019651-007A-PS	PS	5	05/15/2016	11:49:01 PM
134	N019651-007A-MS	MS	5	05/15/2016	11:52:54 PM
135	N019651-007A-MSD	MSD	5	05/15/2016	11:56:48 PM
38	MB-58355	MBLK	1	05/16/2016	12:00:41 AM
5	CCV10	CCV	1	05/16/2016	12:03:59 AM
1	CCB10	CCB	1	05/16/2016	12:07:54 AM
3	ICSA3	ICSA	1	05/16/2016	12:11:10 AM
4	ICSAB3	ICSAB	1	05/16/2016	12:14:27 AM
39	LCS2-58355	LCS	1	05/16/2016	12:18:21 AM
40	N019619-001A	SAMP	10	05/16/2016	12:21:41 AM
41	N019620-001A	SAMP	10	05/16/2016	12:25:00 AM
42	N019621-001A	SAMP	10	05/16/2016	12:28:19 AM
43	N019622-001A	SAMP	10	05/16/2016	12:31:38 AM
44	N019623-001A	SAMP	10	05/16/2016	12:34:57 AM
45	N019640-001A	SAMP	10	05/16/2016	12:38:16 AM
46	N019641-001A	SAMP	1	05/16/2016	12:41:35 AM
47	N019642-001A	SAMP	10	05/16/2016	12:44:55 AM
48	N019667-001A	SAMP	10	05/16/2016	12:48:16 AM
5	CCV11	CCV	1	05/16/2016	12:51:36 AM
1	CCB11	CCB	1	05/16/2016	12:55:30 AM
49	N019668-001A	SAMP	10	05/16/2016	12:58:47 AM
50	N019669-001A	SAMP	10	05/16/2016	01:02:07 AM
51	N019670-001A	SAMP	10	05/16/2016	01:05:26 AM
52	N019671-001A	SAMP	10	05/16/2016	01:08:45 AM
53	N019687-001A	SAMP	10	05/16/2016	01:12:05 AM
54	N019688-001A	SAMP	10	05/16/2016	01:15:24 AM
55	N019689-001A	SAMP	10	05/16/2016	01:18:43 AM
56	N019690-001A	SAMP	10	05/16/2016	01:22:02 AM
57	N019691-001A	SAMP	10	05/16/2016	01:25:22 AM
58	N019692-001A	SAMP	1	05/16/2016	01:28:41 AM
5	CCV12	CCV	1	05/16/2016	01:32:01 AM
1	CCB12	CCB	1	05/16/2016	01:35:55 AM
59	N019693-001A	SAMP	10	05/16/2016	01:39:12 AM
60	N019668-001A	SAMP	50	05/16/2016	01:42:33 AM
61	N019668-001A-PS	PS	10	05/16/2016	01:45:53 AM
62	N019668-001A-MS2	MS	10	05/16/2016	01:49:14 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
63	N019668-001A-MSD2	MSD	10	05/16/2016	01:52:35 AM
5	CCV13	CCV	1	05/16/2016	01:55:55 AM
1	CCB13	CCB	1	05/16/2016	01:59:49 AM
3	ICSA4	ICSA	1	05/16/2016	02:03:07 AM
4	ICSAB4	ICSAB	1	05/16/2016	02:06:26 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2016 8:46:45**
Prep End Date: **5/11/2016 2:10:00**

Initials/ Date: 5/18/2016

Prep Batch **58387** Prep Code: **3010_W** Technician **Amy Mata**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-58387	Aqueous		25	☐	0	0	25	1.000		
LCS2-58387	Aqueous		25	☐	0	0	25	1.000		
MB-58387	Aqueous		25	☐	0	0	25	1.000		
N019559-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-007C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-007C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8408	HYDROCHLORIC ACID
8445	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2016 8:46:45**
Prep End Date: **5/11/2016 2:10:00**

Initials/ Date: 5/18/2016

Prep Factor Units
mL / mL

Prep Batch **58387** Prep Code: **3010_W** Technician **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019606-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8408	HYDROCHLORIC ACID
8445	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160514A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	05/14/2016	01:19:37 PM	B	249.677	4579	0.00	mg/L	
Standard1	05/14/2016	01:24:29 PM	B	249.677	3036	0.1000	mg/L	
Standard3	05/14/2016	01:35:07 PM	B	249.677	31056	1.000	mg/L	
Standard4	05/14/2016	01:40:30 PM	B	249.677	81185	2.500	mg/L	
Standard5	05/14/2016	01:46:53 PM	B	249.677	119018	3.750	mg/L	
Standard6	05/14/2016	01:53:14 PM	B	249.677	161129	5.000	mg/L	
Standard7	05/14/2016	01:59:35 PM	B	249.677	319206	10.000	mg/L	1.0000
Magnesium								
CalBlk	05/14/2016	01:19:37 PM	Mg	279.079	13	0.00	mg/L	
Standard1	05/14/2016	01:24:29 PM	Mg	279.079	1265	0.1000	mg/L	
Standard2	05/14/2016	01:29:48 PM	Mg	279.079	10925	1.000	mg/L	
Standard3	05/14/2016	01:35:07 PM	Mg	279.079	21931	2.000	mg/L	
Standard4	05/14/2016	01:40:30 PM	Mg	279.079	55029	5.000	mg/L	
Standard5	05/14/2016	01:46:53 PM	Mg	279.079	79795	7.500	mg/L	
Standard6	05/14/2016	01:53:14 PM	Mg	279.079	105736	10.000	mg/L	
Standard7	05/14/2016	01:59:35 PM	Mg	279.079	203338	20.000	mg/L	0.9997
Calcium								
CalBlk	05/14/2016	01:19:37 PM	Ca	227.546	-57	0.00	mg/L	
Standard1	05/14/2016	01:24:29 PM	Ca	227.546	47	0.2000	mg/L	
Standard2	05/14/2016	01:29:48 PM	Ca	227.546	216	1.000	mg/L	
Standard3	05/14/2016	01:35:07 PM	Ca	227.546	455	2.000	mg/L	
Standard4	05/14/2016	01:40:30 PM	Ca	227.546	1137	5.000	mg/L	
Standard5	05/14/2016	01:46:53 PM	Ca	227.546	1659	7.500	mg/L	
Standard6	05/14/2016	01:53:14 PM	Ca	227.546	2192	10.000	mg/L	
Standard7	05/14/2016	01:59:35 PM	Ca	227.546	4421	20.000	mg/L	1.0000
Iron								
CalBlk	05/14/2016	01:19:37 PM	Fe	273.953	-136	0.00	mg/L	
Standard1	05/14/2016	01:24:29 PM	Fe	273.953	559	0.0200	mg/L	
Standard2	05/14/2016	01:29:48 PM	Fe	273.953	1390	0.050	mg/L	
Standard3	05/14/2016	01:35:07 PM	Fe	273.953	52934	2.000	mg/L	
Standard4	05/14/2016	01:40:30 PM	Fe	273.953	134015	5.000	mg/L	
Standard5	05/14/2016	01:46:53 PM	Fe	273.953	195365	7.500	mg/L	
Standard6	05/14/2016	01:53:14 PM	Fe	273.953	261022	10.000	mg/L	
Standard7	05/14/2016	01:59:35 PM	Fe	273.953	501171	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 160515A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	05/15/2016	03:23:53 PM	Na	589.594	39	0.00	mg/L	
Standard1	05/15/2016	03:27:24 PM	Na	589.594	376	0.1000	mg/L	
Standard2	05/15/2016	03:30:44 PM	Na	589.594	3663	1.000	mg/L	
Standard3	05/15/2016	03:34:03 PM	Na	589.594	18344	5.000	mg/L	
Standard4	05/15/2016	03:37:54 PM	Na	589.594	36307	10.000	mg/L	
Standard5	05/15/2016	03:41:49 PM	Na	589.594	71839	20.000	mg/L	
Standard6	05/15/2016	03:45:40 PM	Na	589.594	143432	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **ICV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5064.462	100	5000	0	101	90	110				
Calcium	9866.652	500	10000	0	98.7	90	110				
Iron	10175.838	20	10000	0	102	90	110				
Magnesium	9999.441	100	10000	0	100	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **ZZZZZZ** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	98.387	100	100.0	0	98.4	80	120				
Calcium	169.720	500	200.0	0	84.9	80	120				
Iron	18.083	20	20.00	0	90.4	80	120				
Magnesium	90.530	100	100.0	0	90.5	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4972.423	100	5000	0	99.4	90	110				
Calcium	9487.723	500	10000	0	94.9	90	110				
Iron	9863.020	20	10000	0	98.6	90	110				
Magnesium	9014.225	100	10000	0	90.1	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5055.729	100	5000	0	101	90	110				
Calcium	9284.990	500	10000	0	92.8	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCV**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9944.729	20	10000	0	99.4	90	110				
Magnesium	9066.068	100	10000	0	90.7	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCV**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5027.372	100	5000	0	101	90	110				
Calcium	9203.693	500	10000	0	92.0	90	110				
Iron	9903.755	20	10000	0	99.0	90	110				
Magnesium	9035.424	100	10000	0	90.4	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCV**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5015.283	100	5000	0	100	90	110				
Calcium	9210.427	500	10000	0	92.1	90	110				
Iron	9849.884	20	10000	0	98.5	90	110				
Magnesium	9188.530	100	10000	0	91.9	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCV**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4963.776	100	5000	0	99.3	90	110				
Calcium	9093.282	500	10000	0	90.9	90	110				
Iron	9720.432	20	10000	0	97.2	90	110				
Magnesium	9037.629	100	10000	0	90.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ZZZZZZ	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327488

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	107.695	100	100.0	0	108	70	130				
Calcium	143.233	500	200.0	0	71.6	70	130				
Iron	17.781	20	20.00	0	88.9	70	130				
Magnesium	86.583	100	100.0	0	86.6	70	130				

Sample ID	CCV6	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	CCV	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327501

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4950.759	100	5000	0	99.0	90	110				
Calcium	9033.843	500	10000	0	90.3	90	110				
Iron	9657.344	20	10000	0	96.6	90	110				
Magnesium	8914.942	100	10000	0	89.1	90	110				S

Sample ID	CCV7	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	CCV	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327513

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5021.804	100	5000	0	100	90	110				
Calcium	9130.623	500	10000	0	91.3	90	110				
Iron	9770.109	20	10000	0	97.7	90	110				
Magnesium	9079.406	100	10000	0	90.8	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ZZZZZZ	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	113.307	100	100.0	0	113	70	130				
Calcium	131.333	500	200.0	0	65.7	70	130				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Mg on CCV6 and Ca on LLCCV2 are outside criteria, however, samples N019606 were closed by CCV5/CCB5/LLCCV1/ICSA3/ICSAB3.

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **ZZZZZZ**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	17.626	20	20.00	0	88.1	70	130				
Magnesium	87.053	100	100.0	0	87.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **ICV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10099.875	500	10000	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10044.932	500	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9766.248	500	10000	0	97.7	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9826.980	500	10000	0	98.3	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10610.002	500	10000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10302.550	500	10000	0	103	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10208.664	500	10000	0	102	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10190.094	500	10000	0	102	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10164.984	500	10000	0	102	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10052.831	500	10000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/16/2016**	SeqNo: **2328009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10085.363	500	10000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **ICB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	48.252	100									
Calcium	11.302	500									
Iron	0.155	20									
Magnesium	-1.343195	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	44.489	100									
Calcium	-61.751523	500									
Iron	-2.070867	20									
Magnesium	-1.411112	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	65.010	100									
Calcium	1.413	500									
Iron	0.496	20									
Magnesium	-0.920406	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	48.269	100									
Calcium	-14.902209	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.537	20									
Magnesium	-0.802027	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	48.573	100									
Calcium	15.982	500									
Iron	0.518	20									
Magnesium	-0.647086	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	42.989	100									
Calcium	23.828	500									
Iron	0.161	20									
Magnesium	-0.118994	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	43.439	100									
Calcium	-1.472796	500									
Iron	0.289	20									
Magnesium	0.767	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	46.255	100									
Calcium	-31.743263	500									
Iron	0.544	20									
Magnesium	1.037	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **ICB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	17.569	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	35.521	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.292	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	47.640	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	448.003	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB5	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	CCB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	383.953	500									

Sample ID	CCB6	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	CCB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	290.661	500									

Sample ID	CCB7	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	CCB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327974

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	260.955	500									

Sample ID	CCB8	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	CCB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327986

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	227.403	500									

Sample ID	CCB9	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	CCB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327998

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	221.344	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID:	**CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/16/2016**	SeqNo: **2328010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	176.441	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ICSA	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327426

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	441420.487	50	500000	0	88.3	80	120				
Boron	53.136	100									
Calcium	441525.620	500	500000	0	88.3	80	120				
Iron	165234.196	20	200000	0	82.6	80	120				
Magnesium	426513.433	100	500000	0	85.3	80	120				

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ICSAB	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327427

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541501.779	50	500000	0	108	80	120				
Boron	1135.920	100	1000	0	114	80	120				
Calcium	541426.036	500	500000	0	108	80	120				
Iron	185583.385	20	200000	0	92.8	80	120				
Magnesium	492818.115	100	500000	0	98.6	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ICSA	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	439973.788	50	500000	0	88.0	80	120				
Boron	65.101	100									
Calcium	418953.363	500	500000	0	83.8	80	120				
Iron	160958.684	20	200000	0	80.5	80	120				
Magnesium	408813.626	100	500000	0	81.8	80	120				

Qualifiers:

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Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ICSAB	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327490

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	540147.629	50	500000	0	108	80	120				
Boron	1150.755	100	1000	0	115	80	120				
Calcium	512060.827	500	500000	0	102	80	120				
Iron	181159.757	20	200000	0	90.6	80	120				
Magnesium	476192.562	100	500000	0	95.2	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ICSA	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	440459.683	50	500000	0	88.1	80	120				
Boron	70.564	100									
Calcium	415745.372	500	500000	0	83.1	80	120				
Iron	160300.585	20	200000	0	80.2	80	120				
Magnesium	408397.695	100	500000	0	81.7	80	120				

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ICSAB	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	539711.586	50	500000	0	108	80	120				
Boron	1162.219	100	1000	0	116	80	120				
Calcium	512388.024	500	500000	0	102	80	120				
Iron	180084.213	20	200000	0	90.0	80	120				
Magnesium	475993.818	100	500000	0	95.2	80	120				

Qualifiers:

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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSA	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	6.535	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSAB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10045.063	500	10000	0	100	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSA	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	414.189	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSAB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327950

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10345.215	500	10000	0	103	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSA	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/16/2016	SeqNo:	2328011

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	181.054	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **ICSAB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/16/2016**	SeqNo: **2328012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9999.211	500	10000	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.98	65-125	PASS
Standard2	ICAL	1	1.1	110.26	65-125	PASS
Standard3	ICAL	1	1.13	112.7	65-125	PASS
Standard4	ICAL	1	1.022	102.21	65-125	PASS
Standard5	ICAL	1	1.057	105.71	65-125	PASS
Standard6	ICAL	1	0.98	98.49	65-125	PASS
Standard7	ICAL	1	0.97	97.24	65-125	PASS
ICV	ICV	1	0.99	98.94	65-125	PASS
ICB	ICB	1	1.01	101.02	65-125	PASS
LLICV	CCV1	1	1.011	101.1	65-125	PASS
LLICV	CCV1	1	1.0084	100.84	65-125	PASS
LLICV	CCV1	1	1.0082	100.82	65-125	PASS
ICSA1	ICSA	1	1.082	108.24	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.28	65-125	PASS
MB-58387	MBLK	1	1.0087	100.87	65-125	PASS
LCS1-58387	LCS	1	1.071	107.08	65-125	PASS
N019559-007C	SAMP	1	1.034	103.38	65-125	PASS
N019559-007C	SAMP	5	1.067	106.68	65-125	PASS
N019559-007C-PS	PS	1	0.95	95.22	65-125	PASS
N019559-007C-MS1	MS	1	0.95	95.053	65-125	PASS
N019559-007C-MSD1	MSD	1	0.96	95.57	65-125	PASS
N019606-001B	SAMP	1	0.97	97.24	65-125	PASS
N019606-002B	SAMP	1	0.98	98.19	65-125	PASS
N019606-003B	SAMP	1	1.0023	100.23	65-125	PASS
CCV1	CCV	1	1.016	101.58	65-125	PASS
CCB1	CCB	1	0.96	95.8	65-125	PASS
N019607-003B	SAMP	1	0.93	93.18	65-125	PASS
CCV2	CCV	1	0.99	99.18	65-125	PASS
CCB2	CCB	1	1.0069	100.69	65-125	PASS
CCV3	CCV	1	0.98	98.31	65-125	PASS
CCB3	CCB	1	1.0029	100.29	65-125	PASS
CCV4	CCV	1	0.98	98.023	65-125	PASS
CCB4	CCB	1	1.0046	100.46	65-125	PASS
CCV5	CCV	1	0.99	99.12	65-125	PASS
CCB5	CCB	1	1.0073	100.73	65-125	PASS
LLCCV1	CCV2	1	1.0079	100.79	65-125	PASS
ICSA2	ICSA	1	1.084	108.39	65-125	PASS
ICSAB2	ICSAB	1	0.86	85.63	65-125	PASS
CCV6	CCV	1	1	99.75	65-125	PASS
CCB6	CCB	1	1.0093	100.93	65-125	PASS

INTERNAL STANDARD: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV7	CCV	1	0.99	99.31	65-125	PASS
CCB7	CCB	1	1.0062	100.62	65-125	PASS
LLCCV2	CCV2	1	1.0075	100.75	65-125	PASS
ICSA3	ICSA	1	1.082	108.18	65-125	PASS
ICSAB3	ICSAB	1	0.85	85.46	65-125	PASS

INTERNAL STANDARD: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.029	102.88	65-125	PASS
Standard2	ICAL	1	1.032	103.21	65-125	PASS
Standard3	ICAL	1	1.033	103.33	65-125	PASS
Standard4	ICAL	1	1.024	102.42	65-125	PASS
Standard5	ICAL	1	1.023	102.31	65-125	PASS
Standard6	ICAL	1	1.011	101.07	65-125	PASS
ICV	ICV	1	1.02	102.02	65-125	PASS
ICB	ICB	1	1.015	101.5	65-125	PASS
ICSA1	ICSA	1	1.012	101.22	65-125	PASS
ICSAB1	ICSAB	1	1.012	101.15	65-125	PASS
MB-58387	MBLK	1	1.021	102.12	65-125	PASS
LCS2-58387	LCS	1	1.032	103.18	65-125	PASS
N019606-001B	SAMP	5	1.0049	100.49	65-125	PASS
N019606-002B	SAMP	5	1.0071	100.71	65-125	PASS
CCV1	CCV	1	1.03	102.98	65-125	PASS
CCB1	CCB	1	1.032	103.15	65-125	PASS
N019606-003B	SAMP	5	1.018	101.81	65-125	PASS
N019607-003B	SAMP	5	1.01	101.02	65-125	PASS
CCV2	CCV	1	1.029	102.86	65-125	PASS
CCB2	CCB	1	1.027	102.69	65-125	PASS
CCV3	CCV	1	1.058	105.85	65-125	PASS
CCB3	CCB	1	1.056	105.58	65-125	PASS
CCV4	CCV	1	1.027	102.69	65-125	PASS
CCB4	CCB	1	1.0049	100.49	65-125	PASS
CCV4	CCV	1	1.05	105	65-125	PASS
CCB4	CCB	1	1.046	104.59	65-125	PASS
CCB4	CCB	1	1.044	104.38	65-125	PASS
CCB4	CCB	1	1.17	116.76	65-125	PASS
CCV5	CCV	1	0.71	71.19	65-125	PASS
CCV5	CCV	1	1.048	104.75	65-125	PASS
CCB5	CCB	1	1.11	110.91	65-125	PASS
ICSA2	ICSA	1	1.044	104.43	65-125	PASS
ICSAB2	ICSAB	1	1.05	104.97	65-125	PASS
CCV6	CCV	1	1.064	106.37	65-125	PASS
CCB6	CCB	1	1.14	114.21	65-125	PASS
N019606-001B	SAMP	25	1.051	105.13	65-125	PASS
N019606-001B	SAMP	125	1.044	104.39	65-125	PASS
N019606-001B-PS	PS	25	1.044	104.36	65-125	PASS
N019606-001B-MS2	MS	25	1.039	103.91	65-125	PASS
N019606-001B-MSD2	MSD	25	1.044	104.43	65-125	PASS

INTERNAL STANDARD: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N019606-002B	SAMP	25	1.04	103.96	65-125	PASS
N019606-003B	SAMP	25	1.022	102.22	65-125	PASS
N019607-003B	SAMP	25	1.013	101.27	65-125	PASS
CCV7	CCV	1	1.022	102.18	65-125	PASS
CCB7	CCB	1	1.11	110.67	65-125	PASS
CCV8	CCV	1	1.045	104.47	65-125	PASS
CCB8	CCB	1	1.12	112.27	65-125	PASS
CCV9	CCV	1	1.033	103.26	65-125	PASS
CCB9	CCB	1	1.046	104.58	65-125	PASS
CCV10	CCV	1	1.042	104.17	65-125	PASS
CCB10	CCB	1	1.037	103.72	65-125	PASS
ICSA3	ICSA	1	1.021	102.08	65-125	PASS
ICSAB3	ICSAB	1	1.045	104.5	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019606
Test Method: EPA 6010B
Analysis Date: 05/14/16

Matrix: Groundwater
Batch No.: 58387

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019559-007C DT 5X	Boron	ug/L	242.3701	NA	199.4623	21.51%	10
N019559-007C DT 5X	Calcium	ug/L	76038.74	PASS	72053.68	5.53%	10
N019559-007C DT 5X	Iron	ug/L	49.85686	NA	42.35882	17.70%	10
N019559-007C DT 5X	Magnesium	ug/L	24081.24	PASS	23282.93	3.43%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019606
Test Method: EPA 6010B
Analysis Date: 05/15/16

Matrix: Groundwater
Batch No.: 58387

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Na. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019606-001B DT 125X	Sodium	ug/L	519549.5	NA	481632.1	7.87%	10

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N019606-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/15/2016	SeqNo:	2327966

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	490733.923	12000	20000	481600	45.5	80	120				S

Sample ID	N019559-007C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2328322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5266.642	100	5000	199.5	101	80	120				
Calcium	80562.357	500	10000	72050	85.1	80	120				
Iron	147.892	20	100.0	42.36	106	80	120				
Magnesium	30819.194	100	10000	23280	75.4	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58305
ASSET #: N019606

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/10/2016

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).		X				
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of IS in N019606-005B failed. As, Mo & Se for rerun.
%Rec of IS in N019606-007B, 008B, 009B & 013B. Mo for rerun.
%RSD of Se in N019606-006B failed > 15%. Se for rerun.
%Rec of Cr in N019606-001B PS/MS/MSD, N019606-011B MS & Se & Mo in N019606-011B MS failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/19/2016 Date: —

2nd Level Reviewer 5/19/2016 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58305
ASSET #: N019606

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/13/2016

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For As, Mo & Se in N019606-005B, Mo in N019606-007B, 008B, 009B, 013B & Se in N019606-006B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/19/2016 Date: —

2nd Level Reviewer 5/19/2016 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N019606-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 110.722 * 1 * (25/25)

Chromium , ug/L = 110.722000

Reporting results in two significant figures,

Chromium , ug/L = 110

% RSD SUMMARY

PERCENT RSD SUMMARY: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	9.17	15	PASS	0.12	4.036	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.53	4.85	15	PASS	0.55	4.8	15	PASS
Std3-5/50 ppb	ICAL	1	5.036	1.1	15	PASS	5.22	1.81	15	PASS
Std4-10/100 ppb	ICAL	1	10.019	1.71	15	PASS	10.082	1.013	15	PASS
Std5-20/200 ppb	ICAL	1	19.92	1.99	15	PASS	20.5	1.046	15	PASS
Std6-40/400 ppb	ICAL	1	39.98	0.65	15	PASS	41.12	0.67	15	PASS
Std7-100/1000 ppb	ICAL	1	99.25	0.57	15	PASS	100.76	0.83	15	PASS
Std8-200/2000 ppb	ICAL	1	200.38	0.28	15	PASS	199.34	0.44	15	PASS
ICV	ICV	1	9.67	0.58	15	PASS	93.76	0.4	15	PASS
ICB	ICB	1	0.049	24.84	15	<PQL	0.0026	268.88	15	<PQL
LLICV	CCV1	1	1.004	2.38	20	PASS	0.54	8	20	PASS
ICSA1	ICSA	1	0.24	17.72	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.67	0.81	15	PASS	17.52	1.88	15	PASS
CCV1	CCV	1	19.85	1.36	15	PASS	20.2	2.16	15	PASS
CCB1	CCB	1	0.026	75.4	15	<PQL	0.026	21.63	15	<PQL
CCV2	CCV	1	19.72	0.28	15	PASS	19.96	0.17	15	PASS
CCB2	CCB	1	0.025	68.59	15	<PQL	0.039	55.068	15	<PQL
MB-58305	MBLK	1	0.18	8.24	15	PASS	0.067	24.015	15	<PQL
CCV3	CCV	1	20.21	0.53	15	PASS	20.23	0.78	15	PASS
CCB3	CCB	1	0.017	28.86	15	<PQL	0.049	16.072	15	<PQL
LCS-58305	LCS	1	9.73	2.21	15	PASS	99.25	1.27	15	PASS
N019606-001B	SAMP	1	190.67	1.35	15	PASS	<0.000	N/A	15	<PQL
N019606-002B	SAMP	1	110.72	0.87	15	PASS	<0.000	N/A	15	<PQL
N019606-003B	SAMP	1	110.095	1.23	15	PASS	<0.000	N/A	15	<PQL
N019606-004B	SAMP	1	0.12	12.67	15	PASS	17.89	0.3	15	PASS
N019606-005B	SAMP	1	12.045	0.58	15	PASS	94.98	0.97	15	PASS
N019606-006B	SAMP	1	12.2	1.063	15	PASS	98.47	1.69	15	PASS
N019606-007B	SAMP	1	17.27	1.076	15	PASS	56.39	0.32	15	PASS
N019606-008B	SAMP	1	17.56	1.18	15	PASS	74.39	1.32	15	PASS
N019606-009B	SAMP	1	612.83	0.85	15	PASS	142.13	0.55	15	PASS
CCV4	CCV	1	19.67	1.26	15	PASS	20.04	0.83	15	PASS
CCB4	CCB	1	0.061	22.68	15	<PQL	0.057	25.67	15	<PQL
LLCCV1	CCV2	1	1.099	2.11	20	PASS	0.57	9.36	20	PASS
ICSA2	ICSA	1	0.22	16.18	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.42	1.15	15	PASS	17.8	1	15	PASS
N019606-010B	SAMP	1	2937.38	1.54	15	PASS	11.29	3.58	15	PASS
N019606-011B	SAMP	1	2977.24	0.21	15	PASS	11.22	0.9	15	PASS
N019606-012B	SAMP	1	1623.63	0.64	15	PASS	<0.000	N/A	15	<PQL
N019606-013B	SAMP	1	128.44	0.61	15	PASS	48.95	0.89	15	PASS
N019606-014B	SAMP	1	0.19	9.0049	15	PASS	206.32	1.21	15	PASS

PERCENT RSD SUMMARY: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019612-001B	SAMP	1	95.59	1.11	15	PASS	72.54	0.89	15	PASS
N019612-002B	SAMP	1	75.0073	0.84	15	PASS	27.26	0.91	15	PASS
N019612-003B	SAMP	1	2.43	4.46	15	PASS	3	4.6	15	PASS
N019606-001B	SAMP	5	40.46	1.5	15	PASS	<0.000	N/A	15	<PQL
N019606-001B	SAMP	25	8.29	1.58	15	PASS	<0.000	N/A	15	<PQL
CCV5	CCV	1	19.67	0.83	15	PASS	20.21	0.4	15	PASS
CCB5	CCB	1	0.061	33.99	15	<PQL	0.051	32.38	15	<PQL
N019606-001B-PS	PS	1	187.82	1.038	15	PASS	92.18	0.45	15	PASS
N019606-001B-PS	PS	5	39.17	1.04	15	PASS	19.48	1.53	15	PASS
N019606-001B-MS	MS	1	189.27	0.7	15	PASS	87.99	0.64	15	PASS
N019606-001B-MS	MS	5	40.86	1.031	15	PASS	18.97	0.9	15	PASS
N019606-001B-MSD	MSD	1	187.75	0.74	15	PASS	87.54	0.75	15	PASS
N019606-001B-MSD	MSD	5	40.67	0.65	15	PASS	18.9	2.22	15	PASS
N019606-011B	SAMP	5	635.49	1.82	15	PASS	2.41	1.3	15	PASS
N019606-011B	SAMP	25	132.89	0.65	15	PASS	0.53	5.34	15	PASS
N019606-011B-MS	MS	1	2823.18	0.49	15	PASS	100.28	0.29	15	PASS
N019606-011B-MS	MS	5	610.88	1.68	15	PASS	21.54	1.16	15	PASS
CCV6	CCV	1	19.82	0.35	15	PASS	20.027	1.046	15	PASS
CCB6	CCB	1	0.095	7.64	15	PASS	0.0044	92.099	15	<PQL
N019606-011B-MS	MS	25	124.64	1.13	15	PASS	4.38	1.91	15	PASS
N019606-005B	SAMP	5	2.77	4.24	15	PASS	21.15	1.35	15	PASS
N019606-006B	SAMP	5	2.65	4.66	15	PASS	21.24	1.73	15	PASS
N019606-007B	SAMP	5	3.76	1.74	15	PASS	12.37	1.28	15	PASS
N019606-008B	SAMP	5	3.9	1.86	15	PASS	16.53	2.35	15	PASS
N019606-009B	SAMP	5	134.34	0.94	15	PASS	31.32	0.8	15	PASS
N019606-010B	SAMP	5	626.99	0.68	15	PASS	2.44	0.9	15	PASS
N019606-010B	SAMP	25	130.88	1.33	15	PASS	0.54	5.11	15	PASS
N019606-012B	SAMP	5	355.11	1.74	15	PASS	<0.000	N/A	15	<PQL
N019606-012B	SAMP	25	72.84	0.052	15	PASS	<0.000	N/A	15	<PQL
CCV7	CCV	1	19.52	0.79	15	PASS	20.11	0.37	15	PASS
CCB7	CCB	1	0.045	46.74	15	<PQL	0.0052	121.33	15	<PQL
N019606-013B	SAMP	5	27.28	1.61	15	PASS	10.55	0.46	15	PASS
N019606-014B	SAMP	5	0.029	2.92	15	PASS	43.2	0.43	15	PASS
CCV8	CCV	1	19.52	1.38	15	PASS	20.041	0.87	15	PASS
CCB8	CCB	1	0.043	41.88	15	<PQL	0.015	66.49	15	<PQL
LLCCV2	CCV2	1	1.016	0.082	20	PASS	0.55	1.5	20	PASS
ICSA3	ICSA	1	0.22	6.52	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.11	1.19	15	PASS	17.068	0.039	15	PASS

PERCENT RSD SUMMARY: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.089	12.89	15	PASS	0.12	15.65	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.44	7.85	15	PASS	0.47	25.0079	15	<PQL
Std3-5/50 ppb	ICAL	1	4.95	4.19	15	PASS	4.8	2.32	15	PASS
Std4-10/100 ppb	ICAL	1	10	1.97	15	PASS	10.0092	4.96	15	PASS
Std5-20/200 ppb	ICAL	1	20.14	0.78	15	PASS	20.019	4.2	15	PASS
Std6-40/400 ppb	ICAL	1	40.23	0.59	15	PASS	40.16	1.033	15	PASS
Std7-100/1000 ppb	ICAL	1	99.67	1.34	15	PASS	104.36	0.72	15	PASS
Std8-200/2000 ppb	ICAL	1	200.1	1.33	15	PASS	197.79	1.76	15	PASS
ICV	ICV	1	9.89	0.54	15	PASS	9.13	5	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.09	12.81	20	PASS	0.41	5.21	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.015	122.67	15	<PQL
ICSAB1	ICSAB	1	21.00098	0.6	15	PASS	19.69	1.9	15	PASS
CCV1	CCV	1	19.81	2.23	15	PASS	19.84	2.61	15	PASS
CCB1	CCB	1	0.0038	108.3	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.99	1.052	15	PASS	20.0027	2.026	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0032	216.65	15	<PQL
MB-58305	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.23	1.16	15	PASS	19.61	1.14	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-58305	LCS	1	9.87	1.1	15	PASS	9.24	6.59	15	PASS
N019606-001B	SAMP	1	1.84	6.45	15	PASS	5.72	4.15	15	PASS
N019606-002B	SAMP	1	1.54	3.63	15	PASS	4.67	8.31	15	PASS
N019606-003B	SAMP	1	1.5	5.1	15	PASS	4.85	8.36	15	PASS
N019606-004B	SAMP	1	0.05	40.79	15	<PQL	0.014	201.47	15	<PQL
N019606-005B	SAMP	1	2.81	4.68	15	PASS	2.34	22.51	15	NR!
N019606-006B	SAMP	1	2.93	3.48	15	PASS	2.37	12.65	15	PASS
N019606-007B	SAMP	1	7.32	0.95	15	PASS	0.15	44.63	15	<PQL
N019606-008B	SAMP	1	7.63	2.11	15	PASS	0.18	27.18	15	<PQL
N019606-009B	SAMP	1	8.56	2.6	15	PASS	0.84	15.23	15	NR!
CCV4	CCV	1	20.12	0.95	15	PASS	18.97	0.98	15	PASS
CCB4	CCB	1	0.0081	81.92	15	<PQL	0.012	260.33	15	<PQL
LLCCV1	CCV2	1	0.095	11.016	20	PASS	0.45	16.0082	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0053	423.4	15	<PQL
ICSAB2	ICSAB	1	21.24	1.91	15	PASS	18.73	4.31	15	PASS
N019606-010B	SAMP	1	3.56	0.93	15	PASS	85.85	1.82	15	PASS
N019606-011B	SAMP	1	3.69	1.61	15	PASS	86.13	2.17	15	PASS
N019606-012B	SAMP	1	1.064	13.47	15	PASS	305.92	1.27	15	PASS
N019606-013B	SAMP	1	2.78	3.17	15	PASS	1.84	6.64	15	PASS
N019606-014B	SAMP	1	12.64	1.73	15	PASS	0.21	13.72	15	PASS

PERCENT RSD SUMMARY: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019612-001B	SAMP	1	3.37	5.69	15	PASS	0.35	32.54	15	<PQL
N019612-002B	SAMP	1	2.27	3.89	15	PASS	0.16	57.93	15	<PQL
N019612-003B	SAMP	1	0.47	13.46	15	PASS	1.35	18.61	15	NR!
N019606-001B	SAMP	5	0.42	7.49	15	PASS	1.17	13.82	15	PASS
N019606-001B	SAMP	25	0.056	27.77	15	<PQL	0.28	42.87	15	<PQL
CCV5	CCV	1	20.031	1.62	15	PASS	19.77	2.53	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019606-001B-PS	PS	1	11.92	1.92	15	PASS	14.09	4.081	15	PASS
N019606-001B-PS	PS	5	2.38	3.93	15	PASS	3.38	3.16	15	PASS
N019606-001B-MS	MS	1	11.62	3.52	15	PASS	13.72	2.36	15	PASS
N019606-001B-MS	MS	5	2.46	2.86	15	PASS	3.0041	6.24	15	PASS
N019606-001B-MSD	MSD	1	11.6	0.59	15	PASS	14.25	1.21	15	PASS
N019606-001B-MSD	MSD	5	2.44	1.34	15	PASS	2.74	9.57	15	PASS
N019606-011B	SAMP	5	0.74	3.16	15	PASS	18.27	3.28	15	PASS
N019606-011B	SAMP	25	0.13	6.54	15	PASS	3.84	3.9	15	PASS
N019606-011B-MS	MS	1	13.44	1.65	15	PASS	92.41	3.58	15	PASS
N019606-011B-MS	MS	5	2.9	3.9	15	PASS	19.23	4.37	15	PASS
CCV6	CCV	1	20.023	1.63	15	PASS	18.99	5.85	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.00067	3049.91	15	<PQL
N019606-011B-MS	MS	25	0.54	5.82	15	PASS	3.96	6.11	15	PASS
N019606-005B	SAMP	5	0.6	2.92	15	PASS	0.53	27.72	15	NR!
N019606-006B	SAMP	5	0.63	6.63	15	PASS	0.56	28.34	15	NR!
N019606-007B	SAMP	5	1.53	3.46	15	PASS	0.02	201.37	15	<PQL
N019606-008B	SAMP	5	1.58	6.16	15	PASS	0.014	2.35	15	PASS
N019606-009B	SAMP	5	1.86	1.77	15	PASS	0.18	19.28	15	<PQL
N019606-010B	SAMP	5	0.75	7.4	15	PASS	18.17	1.37	15	PASS
N019606-010B	SAMP	25	0.16	17.22	15	NR!	3.56	5.21	15	PASS
N019606-012B	SAMP	5	0.22	1.71	15	PASS	67.63	2.14	15	PASS
N019606-012B	SAMP	25	0.044	35.063	15	<PQL	14.16	1.74	15	PASS
CCV7	CCV	1	20.45	1.79	15	PASS	19.6	1.35	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.0015	1382.68	15	<PQL
N019606-013B	SAMP	5	0.57	6.052	15	PASS	0.36	7.92	15	PASS
N019606-014B	SAMP	5	2.59	3.71	15	PASS	0.055	45.96	15	<PQL
CCV8	CCV	1	20.33	1.33	15	PASS	20.088	4.37	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.0023	970.54	15	<PQL
LLCCV2	CCV2	1	0.087	11.51	20	PASS	0.5	10.31	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.012	238.53	15	<PQL
ICSAB3	ICSAB	1	21.12	0.89	15	PASS	18.79	1.37	15	PASS

PERCENT RSD SUMMARY: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	10.47	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	2.25	15	PASS
Std3-5/50 ppb	ICAL	1	4.93	1.27	15	PASS
Std4-10/100 ppb	ICAL	1	9.91	1.9	15	PASS
Std5-20/200 ppb	ICAL	1	20.038	2.15	15	PASS
Std6-40/400 ppb	ICAL	1	39.57	0.078	15	PASS
Std7-100/1000 ppb	ICAL	1	100.05	0.5	15	PASS
Std8-200/2000 ppb	ICAL	1	200.064	0.38	15	PASS
ICV	ICV	1	9.76	0.61	15	PASS
ICB	ICB	1	0.042	2.75	15	PASS
LLICV	CCV1	1	0.46	3.29	20	PASS
ICSA1	ICSA	1	0.12	6.58	15	PASS
ICSAB1	ICSAB	1	22.97	0.65	15	PASS
CCV1	CCV	1	20.18	1.75	15	PASS
CCB1	CCB	1	0.066	17.5	15	<PQL
CCV2	CCV	1	20.22	0.87	15	PASS
CCB2	CCB	1	0.07	2.58	15	PASS
MB-58305	MBLK	1	0.014	15.64	15	<PQL
CCV3	CCV	1	20.35	1.52	15	PASS
CCB3	CCB	1	0.055	12.26	15	PASS
LCS-58305	LCS	1	10.1	1.88	15	PASS
N019606-001B	SAMP	1	4.48	1.074	15	PASS
N019606-002B	SAMP	1	6.34	1.68	15	PASS
N019606-003B	SAMP	1	6.32	0.42	15	PASS
N019606-004B	SAMP	1	132.84	0.72	15	PASS
N019606-005B	SAMP	1	63.11	0.24	15	PASS
N019606-006B	SAMP	1	65.42	1.15	15	PASS
N019606-007B	SAMP	1	89.9	0.93	15	PASS
N019606-008B	SAMP	1	91.99	1.38	15	PASS
N019606-009B	SAMP	1	93.77	0.64	15	PASS
CCV4	CCV	1	20.66	1.65	15	PASS
CCB4	CCB	1	0.14	5.077	15	PASS
LLCCV1	CCV2	1	0.6	3.33	20	PASS
ICSA2	ICSA	1	0.055	7.75	15	PASS
ICSAB2	ICSAB	1	23.2	1.65	15	PASS
N019606-010B	SAMP	1	44.99	0.92	15	PASS
N019606-011B	SAMP	1	46.83	1.28	15	PASS
N019606-012B	SAMP	1	9.34	0.75	15	PASS
N019606-013B	SAMP	1	57.12	0.4	15	PASS
N019606-014B	SAMP	1	39.36	1.057	15	PASS

PERCENT RSD SUMMARY: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N019612-001B	SAMP	1	9.45	2.37	15	PASS
N019612-002B	SAMP	1	3.093	2.89	15	PASS
N019612-003B	SAMP	1	0.84	2.12	15	PASS
N019606-001B	SAMP	5	0.89	3.77	15	PASS
N019606-001B	SAMP	25	0.16	12.23	15	PASS
CCV5	CCV	1	20.4	0.51	15	PASS
CCB5	CCB	1	0.067	15.49	15	<PQL
N019606-001B-PS	PS	1	15.55	0.49	15	PASS
N019606-001B-PS	PS	5	3.091	1.33	15	PASS
N019606-001B-MS	MS	1	15.34	1.6	15	PASS
N019606-001B-MS	MS	5	2.99	3.34	15	PASS
N019606-001B-MSD	MSD	1	15.15	1.033	15	PASS
N019606-001B-MSD	MSD	5	3.012	2.16	15	PASS
N019606-011B	SAMP	5	9.066	1.26	15	PASS
N019606-011B	SAMP	25	1.81	0.73	15	PASS
N019606-011B-MS	MS	1	55.23	0.073	15	PASS
N019606-011B-MS	MS	5	11.037	1.76	15	PASS
CCV6	CCV	1	20.47	1.51	15	PASS
CCB6	CCB	1	0.079	19.33	15	<PQL
N019606-011B-MS	MS	25	2.086	1.14	15	PASS
N019606-005B	SAMP	5	12.082	2.52	15	PASS
N019606-006B	SAMP	5	12.47	1.076	15	PASS
N019606-007B	SAMP	5	17.53	0.68	15	PASS
N019606-008B	SAMP	5	17.77	0.92	15	PASS
N019606-009B	SAMP	5	18.52	0.22	15	PASS
N019606-010B	SAMP	5	8.89	1.032	15	PASS
N019606-010B	SAMP	25	1.8	4.053	15	PASS
N019606-012B	SAMP	5	1.78	2.94	15	PASS
N019606-012B	SAMP	25	0.37	9.7	15	PASS
CCV7	CCV	1	20.2	0.54	15	PASS
CCB7	CCB	1	0.068	8.27	15	PASS
N019606-013B	SAMP	5	10.93	1.78	15	PASS
N019606-014B	SAMP	5	7.6	0.46	15	PASS
CCV8	CCV	1	20.64	0.73	15	PASS
CCB8	CCB	1	0.083	24.72	15	<PQL
LLCCV2	CCV2	1	0.47	3.4	20	PASS
ICSA3	ICSA	1	0.031	40.77	15	<PQL
ICSAB3	ICSAB	1	23.29	1.58	15	PASS

PERCENT RSD SUMMARY: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.098	9.27	15	PASS	0.069	6.6	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.47	7.079	15	PASS	0.46	34.38	15	<PQL
Std3-5/50 ppb	ICAL	1	4.98	2.1	15	PASS	4.78	2.64	15	PASS
Std4-10/100 ppb	ICAL	1	10.054	1.96	15	PASS	10.16	5.77	15	PASS
Std5-20/200 ppb	ICAL	1	20.31	0.44	15	PASS	20.6	1.084	15	PASS
Std6-40/400 ppb	ICAL	1	40.41	0.45	15	PASS	40.73	0.95	15	PASS
Std7-100/1000 ppb	ICAL	1	100.89	0.97	15	PASS	101.11	1.41	15	PASS
Std8-200/2000 ppb	ICAL	1	199.44	1.081	15	PASS	199.24	1.08	15	PASS
ICV	ICV	1	9.36	2.62	15	PASS	9.52	3.32	15	PASS
ICB	ICB	1	0.0091	132.75	15	<PQL	0.0098	99.95	15	<PQL
LLICV	CCV1	1	0.094	2.11	20	PASS	0.43	35.93	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.014	124.47	15	<PQL
ICSAB1	ICSAB	1	19.99	0.61	15	PASS	17.47	1.78	15	PASS
N019606-005B	SAMP	25	0.11	15.62	15	NR!	0.13	21.83	15	<PQL
N019606-006B	SAMP	5	0.66	4.26	15	PASS	0.45	33.29	15	<PQL
N019606-007B	SAMP	25	0.31	10.89	15	PASS	0.0026	173.21	15	<PQL
N019606-008B	SAMP	25	0.3	10.5	15	PASS	0.018	25.81	15	<PQL
N019606-009B	SAMP	25	0.35	8.78	15	PASS	0.062	73.26	15	<PQL
N019606-013B	SAMP	25	0.12	4.44	15	PASS	0.074	23.83	15	<PQL
CCV1	CCV	1	20.51	0.79	15	PASS	19.79	3.23	15	PASS
CCB1	CCB	1	0.003	308.53	15	<PQL	0.008	0.38	15	PASS
CCV2	CCV	1	20.4	1.3	15	PASS	18.77	3.53	15	PASS
CCB2	CCB	1	0.0068	49.7	15	<PQL	0.0052	86.6	15	<PQL
CCV3	CCV	1	20.47	0.27	15	PASS	18.98	2.27	15	PASS
CCB3	CCB	1	0.0089	82.35	15	<PQL	0.0071	1.82	15	PASS
CCV4	CCV	1	20.26	0.95	15	PASS	18.11	3.58	15	PASS
CCB4	CCB	1	0.0082	50	15	<PQL	0.007	100.23	15	<PQL
LLCCV1	CCV2	1	0.11	4.24	20	PASS	0.47	18.53	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.033	52.58	15	<PQL
ICSAB2	ICSAB	1	19.92	2.3	15	PASS	16.57	4.68	15	PASS
CCV5	CCV	1	20.34	1.3	15	PASS	19.49	3.52	15	PASS
CCB5	CCB	1	0.012	27.97	15	<PQL	0.0077	100.44	15	<PQL
CCV6	CCV	1	20.31	0.38	15	PASS	19.27	0.33	15	PASS
CCB6	CCB	1	0.0036	77.41	15	<PQL	0	N/A	15	<PQL
LLCCV2	CCV2	1	0.11	13.46	20	PASS	0.4	18.81	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.018	64.97	15	<PQL
ICSAB3	ICSAB	1	20.15	0.96	15	PASS	16.83	4.26	15	PASS

PERCENT RSD SUMMARY: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.096	14.86	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	5.8	15	PASS
Std3-5/50 ppb	ICAL	1	4.96	1.16	15	PASS
Std4-10/100 ppb	ICAL	1	9.91	1.2	15	PASS
Std5-20/200 ppb	ICAL	1	19.64	0.42	15	PASS
Std6-40/400 ppb	ICAL	1	39.27	0.73	15	PASS
Std7-100/1000 ppb	ICAL	1	99.45	0.32	15	PASS
Std8-200/2000 ppb	ICAL	1	200.46	0.64	15	PASS
ICV	ICV	1	9.55	2.47	15	PASS
ICB	ICB	1	0.0044	106.61	15	<PQL
LLICV	CCV1	1	0.43	3.96	20	PASS
ICSA1	ICSA	1	0.026	22.85	15	<PQL
ICSAB1	ICSAB	1	23.16	1.32	15	PASS
N019606-005B	SAMP	25	2.35	3.04	15	PASS
N019606-006B	SAMP	5	12.88	2.064	15	PASS
N019606-007B	SAMP	25	3.43	1.47	15	PASS
N019606-008B	SAMP	25	3.38	1.98	15	PASS
N019606-009B	SAMP	25	3.53	3.33	15	PASS
N019606-013B	SAMP	25	2.096	2.6	15	PASS
CCV1	CCV	1	19.82	0.11	15	PASS
CCB1	CCB	1	0.022	14.81	15	PASS
CCV2	CCV	1	20.68	0.95	15	PASS
CCB2	CCB	1	0.025	22.58	15	<PQL
CCV3	CCV	1	20.37	0.32	15	PASS
CCB3	CCB	1	0.023	32.63	15	<PQL
CCV4	CCV	1	20.54	1.099	15	PASS
CCB4	CCB	1	0.02	22.053	15	<PQL
LLCCV1	CCV2	1	0.43	2.48	20	PASS
ICSA2	ICSA	1	0.034	34.068	15	<PQL
ICSAB2	ICSAB	1	23.45	0.9	15	PASS
CCV5	CCV	1	20.59	1.12	15	PASS
CCB5	CCB	1	0.022	7.87	15	PASS
CCV6	CCV	1	20.46	1.39	15	PASS
CCB6	CCB	1	0.024	18.28	15	<PQL
LLCCV2	CCV2	1	0.48	2.85	20	PASS
ICSA3	ICSA	1	0.036	39.91	15	<PQL
ICSAB3	ICSAB	1	23.14	1.42	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160510A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0510001.D	RINSE	RINSE	1	05/10/16 10:22 AM
A0510002.D	Cal Blank	IBLK	1	05/10/16 10:28 AM
A0510003.D	Std1-0.1/1 ppb	ICAL	1	05/10/16 10:33 AM
A0510004.D	Std2-0.5/5 ppb	ICAL	1	05/10/16 10:39 AM
A0510005.D	Std3-5/50 ppb	ICAL	1	05/10/16 10:45 AM
A0510006.D	Std4-10/100 ppb	ICAL	1	05/10/16 10:50 AM
A0510007.D	Std5-20/200 ppb	ICAL	1	05/10/16 10:56 AM
A0510008.D	Std6-40/400 ppb	ICAL	1	05/10/16 11:01 AM
A0510009.D	Std7-100/1000 ppb	ICAL	1	05/10/16 11:07 AM
A0510010.D	Std8-200/2000 ppb	ICAL	1	05/10/16 11:12 AM
A0510011.D	ICV	ICV	1	05/10/16 11:16 AM
A0510012.D	ICB	ICB	1	05/10/16 11:21 AM
A0510013.D	LLICV	CCV1	1	05/10/16 11:27 AM
A0510014.D	ICSA1	ICSA	1	05/10/16 11:36 AM
A0510015.D	ICSAB1	ICSAB	1	05/10/16 11:42 AM
A0510016.D	N019559-008B	SAMP	1	05/10/16 11:47 AM
A0510017.D	N019560-002B	SAMP	1	05/10/16 11:53 AM
A0510018.D	N019560-002B	SAMP	5	05/10/16 11:58 AM
A0510019.D	N019560-002B	SAMP	25	05/10/16 12:04 PM
A0510020.D	N019560-002B-PS	PS	5	05/10/16 12:09 PM
A0510021.D	N019560-002B-MS	MS	5	05/10/16 12:15 PM
A0510022.D	N019560-002B-MSD	MSD	5	05/10/16 12:20 PM
A0510023.D	N019560-004B	SAMP	5	05/10/16 12:26 PM
A0510024.D	N019560-005B	SAMP	1	05/10/16 12:31 PM
A0510025.D	N019560-006B	SAMP	10	05/10/16 12:37 PM
A0510026.D	CCV1	CCV	1	05/10/16 12:43 PM
A0510027.D	CCB1	CCB	1	05/10/16 12:49 PM
A0510028.D	N019560-007B	SAMP	25	05/10/16 12:54 PM
A0510029.D	N019560-008B	SAMP	5	05/10/16 1:00 PM
A0510030.D	N019560-009B	SAMP	5	05/10/16 1:05 PM
A0510031.D	N019560-010B	SAMP	5	05/10/16 1:11 PM
A0510032.D	N019560-012B	SAMP	5	05/10/16 1:16 PM
A0510033.D	N019560-012B-MS	MS	5	05/10/16 1:22 PM
A0510034.D	N019560-012B	SAMP	10	05/10/16 1:27 PM
A0510035.D	N019560-012B-MS	MS	10	05/10/16 1:33 PM
A0510036.D	N019590-001B	SAMP	5	05/10/16 1:38 PM
A0510037.D	N019590-002B	SAMP	5	05/10/16 1:44 PM
A0510038.D	CCV2	CCV	1	05/10/16 1:50 PM
A0510039.D	CCB2	CCB	1	05/10/16 1:55 PM
A0510040.D	N019590-003B	SAMP	5	05/10/16 2:01 PM
A0510041.D	N019590-005B	SAMP	25	05/10/16 2:06 PM
A0510042.D	N019590-007B	SAMP	5	05/10/16 2:12 PM

INJECTION LOG: 160510A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0510043.D	N019590-007B	SAMP	10	05/10/16 2:17 PM
A0510044.D	N019591-005B	SAMP	10	05/10/16 2:23 PM
A0510045.D	N019591-011B	SAMP	5	05/10/16 2:28 PM
A0510046.D	N019591-013B	SAMP	5	05/10/16 2:34 PM
A0510047.D	N019560-012B	SAMP	25	05/10/16 2:41 PM
A0510048.D	N019560-012B-MS	MS	25	05/10/16 2:46 PM
A0510049.D	MB-58305	MBLK	1	05/10/16 2:57 PM
A0510050.D	CCV3	CCV	1	05/10/16 3:03 PM
A0510051.D	CCB3	CCB	1	05/10/16 3:08 PM
A0510052.D	LCS-58305	LCS	1	05/10/16 3:14 PM
A0510053.D	N019606-001B	SAMP	1	05/10/16 3:19 PM
A0510054.D	N019606-002B	SAMP	1	05/10/16 3:25 PM
A0510055.D	N019606-003B	SAMP	1	05/10/16 3:31 PM
A0510056.D	N019606-004B	SAMP	1	05/10/16 3:36 PM
A0510057.D	N019606-005B	SAMP	1	05/10/16 3:42 PM
A0510058.D	N019606-006B	SAMP	1	05/10/16 3:47 PM
A0510059.D	N019606-007B	SAMP	1	05/10/16 3:53 PM
A0510060.D	N019606-008B	SAMP	1	05/10/16 3:58 PM
A0510061.D	N019606-009B	SAMP	1	05/10/16 4:04 PM
A0510062.D	CCV4	CCV	1	05/10/16 4:10 PM
A0510063.D	CCB4	CCB	1	05/10/16 4:15 PM
A0510064.D	LLCCV1	CCV2	1	05/10/16 4:21 PM
A0510065.D	ICSA2	ICSA	1	05/10/16 4:26 PM
A0510066.D	ICSAB2	ICSAB	1	05/10/16 4:32 PM
A0510067.D	N019606-010B	SAMP	1	05/10/16 4:37 PM
A0510068.D	N019606-011B	SAMP	1	05/10/16 4:43 PM
A0510069.D	N019606-012B	SAMP	1	05/10/16 4:48 PM
A0510070.D	N019606-013B	SAMP	1	05/10/16 4:54 PM
A0510071.D	N019606-014B	SAMP	1	05/10/16 4:59 PM
A0510072.D	N019612-001B	SAMP	1	05/10/16 5:05 PM
A0510073.D	N019612-002B	SAMP	1	05/10/16 5:11 PM
A0510074.D	N019612-003B	SAMP	1	05/10/16 5:18 PM
A0510075.D	N019606-001B	SAMP	5	05/10/16 5:23 PM
A0510076.D	N019606-001B	SAMP	25	05/10/16 5:29 PM
A0510077.D	CCV5	CCV	1	05/10/16 5:34 PM
A0510078.D	CCB5	CCB	1	05/10/16 5:40 PM
A0510079.D	N019606-001B-PS	PS	1	05/10/16 5:46 PM
A0510080.D	N019606-001B-PS	PS	5	05/10/16 5:51 PM
A0510081.D	N019606-001B-MS	MS	1	05/10/16 5:57 PM
A0510082.D	N019606-001B-MS	MS	5	05/10/16 6:02 PM
A0510083.D	N019606-001B-MSD	MSD	1	05/10/16 6:08 PM
A0510084.D	N019606-001B-MSD	MSD	5	05/10/16 6:13 PM

INJECTION LOG: 160510A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0510085.D	N019606-011B	SAMP	5	05/10/16 6:20 PM
A0510086.D	N019606-011B	SAMP	25	05/10/16 6:25 PM
A0510087.D	N019606-011B-MS	MS	1	05/10/16 6:31 PM
A0510088.D	N019606-011B-MS	MS	5	05/10/16 6:36 PM
A0510089.D	CCV6	CCV	1	05/10/16 6:42 PM
A0510090.D	CCB6	CCB	1	05/10/16 6:48 PM
A0510091.D	N019606-011B-MS	MS	25	05/10/16 6:53 PM
A0510092.D	N019606-005B	SAMP	5	05/10/16 6:59 PM
A0510093.D	N019606-006B	SAMP	5	05/10/16 7:04 PM
A0510094.D	N019606-007B	SAMP	5	05/10/16 7:10 PM
A0510095.D	N019606-008B	SAMP	5	05/10/16 7:15 PM
A0510096.D	N019606-009B	SAMP	5	05/10/16 7:21 PM
A0510097.D	N019606-010B	SAMP	5	05/10/16 7:27 PM
A0510098.D	N019606-010B	SAMP	25	05/10/16 7:32 PM
A0510099.D	N019606-012B	SAMP	5	05/10/16 7:38 PM
A0510100.D	N019606-012B	SAMP	25	05/10/16 7:43 PM
A0510101.D	CCV7	CCV	1	05/10/16 7:49 PM
A0510102.D	CCB7	CCB	1	05/10/16 7:55 PM
A0510103.D	N019606-013B	SAMP	5	05/10/16 8:00 PM
A0510104.D	N019606-014B	SAMP	5	05/10/16 8:06 PM
A0510105.D	MB-58375	MBLK	1	05/10/16 8:11 PM
A0510106.D	LCS-58375	LCS	1	05/10/16 8:17 PM
A0510107.D	N019699-001B	SAMP	1	05/10/16 8:23 PM
A0510108.D	N019699-001B	SAMP	5	05/10/16 8:28 PM
A0510109.D	N019699-001B-PS	PS	1	05/10/16 8:34 PM
A0510110.D	N019699-001B-MS	MS	1	05/10/16 8:39 PM
A0510111.D	N019699-001B-MSD	MSD	1	05/10/16 8:45 PM
A0510112.D	CCV8	CCV	1	05/10/16 8:51 PM
A0510113.D	CCB8	CCB	1	05/10/16 8:56 PM
A0510114.D	LLCCV2	CCV2	1	05/10/16 9:02 PM
A0510115.D	ICSA3	ICSA	1	05/10/16 9:07 PM
A0510116.D	ICSAB3	ICSAB	1	05/10/16 9:13 PM

INJECTION LOG: 160513B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0513001.D	RINSE	RINSE	1	05/13/16 11:50 PM
B0513002.D	Cal Blank	IBLK	1	05/13/16 11:56 PM
B0513003.D	Std1-0.1/1 ppb	ICAL	1	05/14/16 12:01 AM
B0513004.D	Std2-0.5/5 ppb	ICAL	1	05/14/16 12:07 AM
B0513005.D	Std3-5/50 ppb	ICAL	1	05/14/16 12:12 AM
B0513006.D	Std4-10/100 ppb	ICAL	1	05/14/16 12:18 AM
B0513007.D	Std5-20/200 ppb	ICAL	1	05/14/16 12:23 AM
B0513008.D	Std6-40/400 ppb	ICAL	1	05/14/16 12:29 AM
B0513009.D	Std7-100/1000 ppb	ICAL	1	05/14/16 12:34 AM
B0513010.D	Std8-200/2000 ppb	ICAL	1	05/14/16 12:40 AM
B0513011.D	ICV	ICV	1	05/14/16 12:45 AM
B0513012.D	ICB	ICB	1	05/14/16 12:50 AM
B0513013.D	LLICV	CCV1	1	05/14/16 12:56 AM
B0513014.D	ICSA1	ICSA	1	05/14/16 1:01 AM
B0513015.D	ICSAB1	ICSAB	1	05/14/16 1:08 AM
B0513016.D	N019606-005B	SAMP	25	05/14/16 1:13 AM
B0513017.D	N019606-006B	SAMP	5	05/14/16 1:19 AM
B0513018.D	N019606-007B	SAMP	25	05/14/16 1:24 AM
B0513019.D	N019606-008B	SAMP	25	05/14/16 1:30 AM
B0513020.D	N019606-009B	SAMP	25	05/14/16 1:35 AM
B0513021.D	N019606-013B	SAMP	25	05/14/16 1:41 AM
B0513022.D	MB-58340	MBLK	1	05/14/16 1:46 AM
B0513023.D	LCS-58340	LCS	1	05/14/16 1:52 AM
B0513024.D	N019636-001B	SAMP	1	05/14/16 1:57 AM
B0513025.D	N019636-001B	SAMP	5	05/14/16 2:03 AM
B0513026.D	CCV1	CCV	1	05/14/16 2:08 AM
B0513027.D	CCB1	CCB	1	05/14/16 2:14 AM
B0513028.D	N019636-001B-PS	PS	1	05/14/16 2:19 AM
B0513029.D	N019636-001B-MS	MS	1	05/14/16 2:25 AM
B0513030.D	N019636-001B-MSD	MSD	1	05/14/16 2:30 AM
B0513031.D	N019638-001B	SAMP	1	05/14/16 2:36 AM
B0513032.D	N019638-001B-MS	MS	1	05/14/16 2:41 AM
B0513033.D	N019607-001B	SAMP	1	05/14/16 2:47 AM
B0513034.D	N019607-001B	SAMP	5	05/14/16 2:53 AM
B0513035.D	N019607-002B	SAMP	1	05/14/16 2:58 AM
B0513036.D	N019607-002B	SAMP	5	05/14/16 3:04 AM
B0513037.D	N019607-002B	SAMP	25	05/14/16 3:09 AM
B0513038.D	CCV2	CCV	1	05/14/16 3:15 AM
B0513039.D	CCB2	CCB	1	05/14/16 3:21 AM
B0513040.D	N019607-003B	SAMP	1	05/14/16 3:26 AM
B0513041.D	N019607-003B	SAMP	5	05/14/16 3:32 AM
B0513042.D	N019607-003B	SAMP	25	05/14/16 3:37 AM

INJECTION LOG: 160513B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0513043.D	N019607-005B	SAMP	1	05/14/16 3:43 AM
B0513044.D	N019607-005B	SAMP	5	05/14/16 3:48 AM
B0513045.D	N019607-005B	SAMP	25	05/14/16 3:54 AM
B0513046.D	N019607-006B	SAMP	1	05/14/16 3:59 AM
B0513047.D	N019607-006B	SAMP	5	05/14/16 4:05 AM
B0513048.D	N019607-006B	SAMP	25	05/14/16 4:10 AM
B0513049.D	N019607-007B	SAMP	1	05/14/16 4:16 AM
B0513050.D	CCV3	CCV	1	05/14/16 4:22 AM
B0513051.D	CCB3	CCB	1	05/14/16 4:27 AM
B0513052.D	N019607-007B	SAMP	5	05/14/16 4:33 AM
B0513053.D	N019607-008B	SAMP	1	05/14/16 4:38 AM
B0513054.D	N019607-008B	SAMP	5	05/14/16 4:44 AM
B0513055.D	N019607-008B	SAMP	25	05/14/16 4:49 AM
B0513056.D	N019607-009B	SAMP	1	05/14/16 4:55 AM
B0513057.D	N019607-009B	SAMP	5	05/14/16 5:00 AM
B0513058.D	N019607-009B	SAMP	25	05/14/16 5:06 AM
B0513059.D	N019607-010B	SAMP	1	05/14/16 5:11 AM
B0513060.D	N019607-010B	SAMP	5	05/14/16 5:17 AM
B0513061.D	N019607-010B	SAMP	25	05/14/16 5:22 AM
B0513062.D	CCV4	CCV	1	05/14/16 5:28 AM
B0513063.D	CCB4	CCB	1	05/14/16 5:34 AM
B0513064.D	LLCCV1	CCV2	1	05/14/16 5:38 AM
B0513065.D	ICSA2	ICSA	1	05/14/16 5:45 AM
B0513066.D	ICSAB2	ICSAB	1	05/14/16 5:50 AM
B0513067.D	N019611-008B	SAMP	1	05/14/16 5:56 AM
B0513068.D	N019611-008B	SAMP	5	05/14/16 6:01 AM
B0513069.D	N019611-010B	SAMP	1	05/14/16 6:07 AM
B0513070.D	N019611-010B	SAMP	5	05/14/16 6:12 AM
B0513071.D	N019611-011B	SAMP	1	05/14/16 6:18 AM
B0513072.D	N019611-011B	SAMP	5	05/14/16 6:23 AM
B0513073.D	N019611-012B	SAMP	1	05/14/16 6:29 AM
B0513074.D	N019611-012B	SAMP	5	05/14/16 6:34 AM
B0513075.D	N019611-013B	SAMP	1	05/14/16 6:40 AM
B0513076.D	N019611-013B	SAMP	5	05/14/16 6:45 AM
B0513077.D	CCV5	CCV	1	05/14/16 6:51 AM
B0513078.D	CCB5	CCB	1	05/14/16 6:57 AM
B0513079.D	N019611-014B	SAMP	1	05/14/16 7:02 AM
B0513080.D	N019611-014B	SAMP	5	05/14/16 7:08 AM
B0513081.D	N019611-015B	SAMP	1	05/14/16 7:13 AM
B0513082.D	N019611-015B	SAMP	5	05/14/16 7:19 AM
B0513083.D	CCV6	CCV	1	05/14/16 7:24 AM
B0513084.D	CCB6	CCB	1	05/14/16 7:30 AM

INJECTION LOG: 160513B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0513085.D	LLCCV2	CCV2	1	05/14/16 7:35 AM
B0513086.D	ICSA3	ICSA	1	05/14/16 7:41 AM
B0513087.D	ICSAB3	ICSAB	1	05/14/16 7:46 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/5/2016 7:45:19 A**
Prep End Date: **5/5/2016 12:15:00 P**
Initials/ Date: 5/19/2016

Prep Batch **58305** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-25**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58305	Aqueous		25	☐	0	0	25	1.000		
MB-58305	Aqueous		25	☐	0	0	25	1.000		
N019606-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/5/2016 7:45:19 A**
Prep End Date: **5/5/2016 12:15:00 P**

Initials/ Date: 5/19/2016

Prep Batch **58305** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-25**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019606-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-011B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N019612-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019612-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019612-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 10 May 2016 09:54:01 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	102624.00	0.00	
24 Mg	555040.00	0.00	
25 Mg	72741.10	0.00	
26 Mg	84940.10	0.00	
59 Co	635241.00	0.00	
115 In	1318530.00	0.00	
206 Pb	332757.00	0.00	
207 Pb	288378.00	0.00	
208 Pb	713088.00	0.00	

RSD (%)

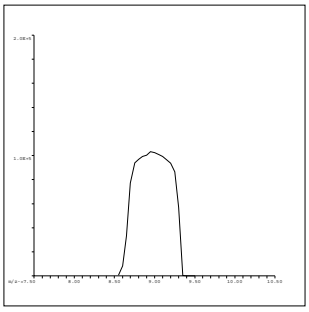
Element	Actual	Required	Flag
9 Be	1.24	5.00	
24 Mg	0.32	5.00	
25 Mg	1.96	5.00	
26 Mg	0.62	5.00	
59 Co	0.25	5.00	
115 In	0.46	5.00	
206 Pb	0.42	5.00	
207 Pb	0.46	5.00	
208 Pb	0.48	5.00	

Ion Ratio

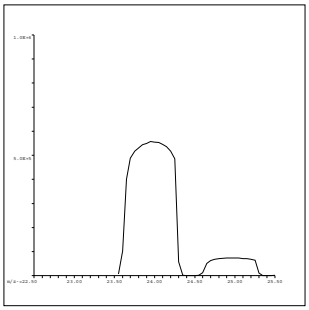
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

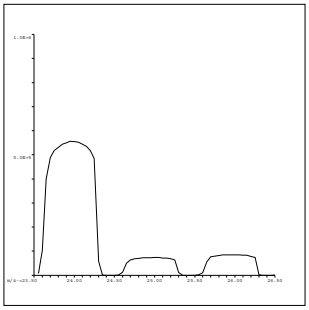
Element	Actual	Required	Flag



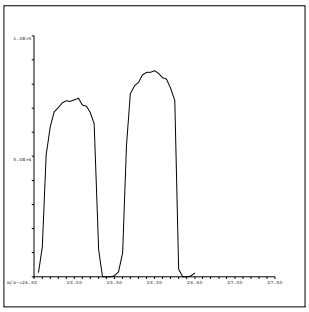
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



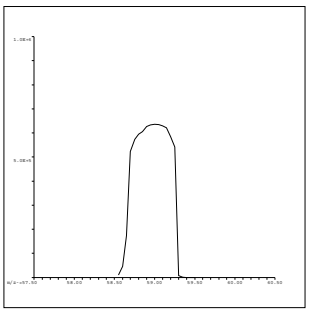
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



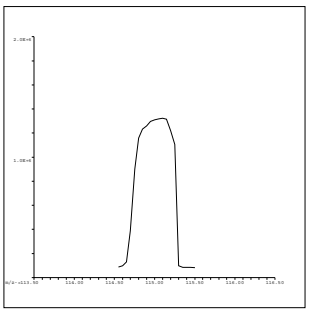
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



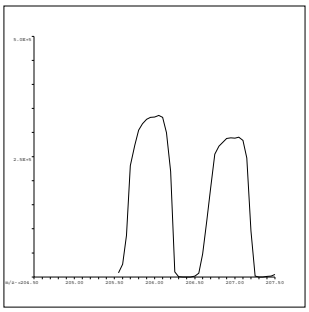
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



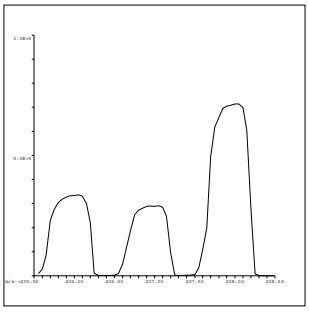
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



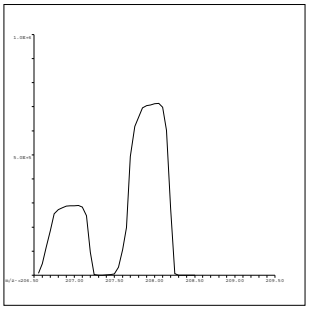
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 May 2016 09:52:28 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	114369.00	0.00	
24 Mg	380105.00	0.00	
25 Mg	50408.00	0.00	
26 Mg	58874.90	0.00	
59 Co	544743.00	0.00	
115 In	1042260.00	0.00	
206 Pb	356095.00	0.00	
207 Pb	309230.00	0.00	
208 Pb	763882.00	0.00	

RSD (%)

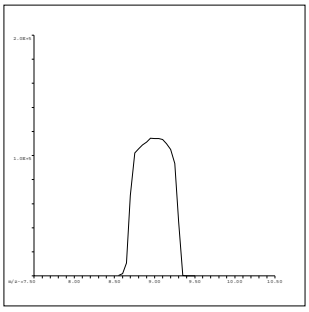
Element	Actual	Required	Flag
9 Be	0.64	5.00	
24 Mg	0.98	5.00	
25 Mg	1.85	5.00	
26 Mg	1.71	5.00	
59 Co	0.89	5.00	
115 In	0.74	5.00	
206 Pb	0.76	5.00	
207 Pb	1.23	5.00	
208 Pb	0.91	5.00	

Ion Ratio

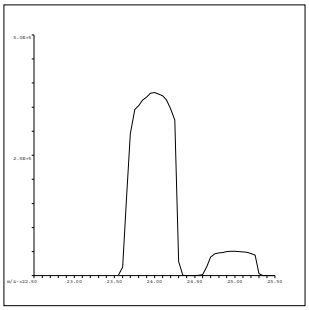
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

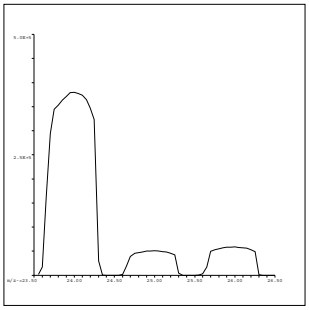
Element	Actual	Required	Flag



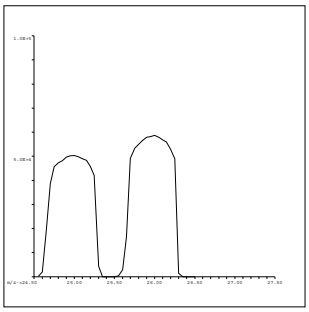
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



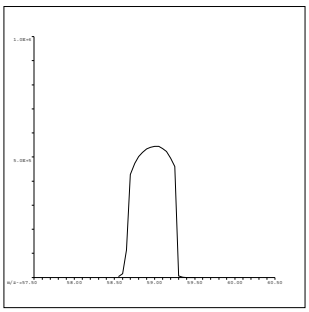
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



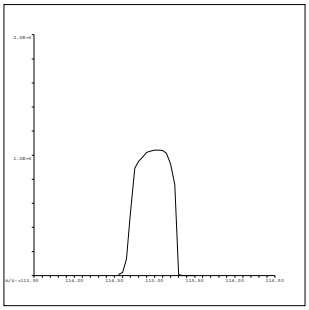
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



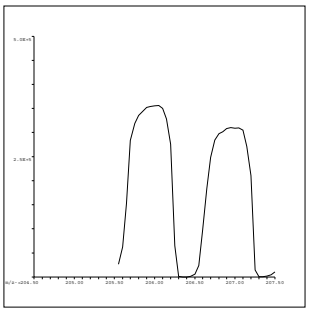
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



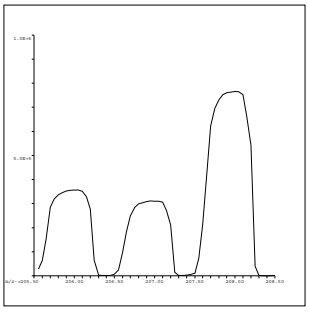
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



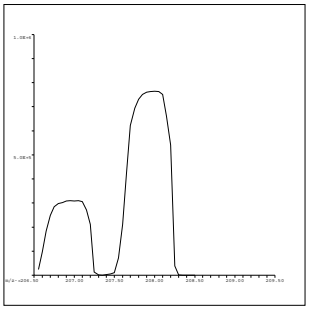
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160510A

Instrument ID: ICPMS-02

Analyte	Data File	A0510002.D	A0510003.D	A0510004.D	A0510005.D	A0510006.D	A0510007.D	A0510008.D	A0510009.D	A0510010.D	
	Acq. Date-Time	05/10/2016 10:28 AM	05/10/2016 10:33 AM	05/10/2016 10:39 AM	05/10/2016 10:45 AM	05/10/2016 10:50 AM	05/10/2016 10:56 AM	05/10/2016 11:01 AM	05/10/2016 11:07 AM	05/10/2016 11:12 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	90285.4		88085.3	87538.5	87068.1	86125.5	87464.4	87050.4	87921.6	
55 Mn [2]	CPS	130.1		2023.5	18032.9	34516.2	69267.6	140989.9	343701.2	686638.2	1.0000
52 Cr [2]	CPS	748.8		4129.4	33013.2	64589	126328	256797.2	633383.7	1290849.5	1.0000
72 Ge (ISTD) [1]	CPS	64095.1		64201.2	63793	62364.1	61838.8	63586.5	60987	62645.7	
78 Se [1]	CPS	4.4		127.8	1259	2559.2	5073.2	10461.6	26072.9	50758	0.9997
72 Ge (ISTD) [2]	CPS	65444.8	66137.9	65504.1	64742.2	63992.6	63349.1	63683.5	63575.6	63794.2	
75 As [2]	CPS	18.7	91.1	374.2	3938.7	7847.7	15632.9	31379.5	77570.8	156266.4	1.0000
103 Rh (ISTD) [2]	CPS	1902481.8		1894095.8	1866041.4	1858195.2	1848409.2	1880479.8	1867429.4	1863489.2	
95 Mo [2]	CPS	84.5		2306.9	21552.9	43047.6	86516	173692.5	436033.4	870014.3	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 160513B

Instrument ID: ICPMS-02

Analyte	Data File	B0513002.D	B0513003.D	B0513004.D	B0513005.D	B0513006.D	B0513007.D	B0513008.D	B0513009.D	B0513010.D	
	Acq. Date-Time	05/13/2016 11:56 PM	05/14/2016 12:01 AM	05/14/2016 12:07 AM	05/14/2016 12:12 AM	05/14/2016 12:18 AM	05/14/2016 12:23 AM	05/14/2016 12:29 AM	05/14/2016 12:34 AM	05/14/2016 12:40 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	87729.7		86778.6	82495.2	79125.8	77655	76818.8	74492.6	75201.8	
78 Se [1]	CPS	0		205.6	2011.3	4095.2	8151.3	15944	38376.3	76343.1	1.0000
72 Ge (ISTD) [2]	CPS	74947.7	77551	73034.8	69173.6	66283.1	64696.8	64261.7	62591.9	63595.6	
75 As [2]	CPS	9.3	95.6	395.6	3913.4	7558.3	14894.5	29430.9	71546.4	143685.3	1.0000
103 Rh (ISTD) [2]	CPS	2257002.8		2264191.1	2163179.1	2091152.7	2062663.1	2043626.1	1999894.8	2003015.1	
95 Mo [2]	CPS	25.6		2605.9	24835.7	47945.9	93691.9	185554.3	459811.5	928302.7	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.887	0.10	10.00	0	98.9	90	110				
Manganese	93.760	0.50	100.0	0	93.8	90	110				
Molybdenum	9.765	0.50	10.00	0	97.6	90	110				
Selenium	9.129	0.50	10.00	0	91.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.090	0.10	0.1000	0	89.6	80	120				
Manganese	0.544	0.50	0.5000	0	109	80	120				
Molybdenum	0.456	0.50	0.5000	0	91.1	80	120				
Selenium	0.410	0.50	0.5000	0	82.0	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.805	0.10	20.00	0	99.0	90	110				
Manganese	20.199	0.50	20.00	0	101	90	110				
Molybdenum	20.179	0.50	20.00	0	101	90	110				
Selenium	19.842	0.50	20.00	0	99.2	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.987	0.10	20.00	0	99.9	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **108371**
Client ID: **CCV** Batch ID: **R108371** TestNo: **EPA 6020** Analysis Date: **5/10/2016** SeqNo: **2322201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.959	0.50	20.00	0	99.8	90	110				
Molybdenum	20.215	0.50	20.00	0	101	90	110				
Selenium	20.003	0.50	20.00	0	100	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **108371**
Client ID: **CCV** Batch ID: **R108371** TestNo: **EPA 6020** Analysis Date: **5/10/2016** SeqNo: **2322213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.230	0.10	20.00	0	101	90	110				
Manganese	20.232	0.50	20.00	0	101	90	110				
Molybdenum	20.353	0.50	20.00	0	102	90	110				
Selenium	19.605	0.50	20.00	0	98.0	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **108371**
Client ID: **CCV** Batch ID: **R108371** TestNo: **EPA 6020** Analysis Date: **5/10/2016** SeqNo: **2322225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.122	0.10	20.00	0	101	90	110				
Manganese	20.040	0.50	20.00	0	100	90	110				
Molybdenum	20.656	0.50	20.00	0	103	90	110				
Selenium	18.965	0.50	20.00	0	94.8	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **108371**
Client ID: **ZZZZZZ** Batch ID: **R108371** TestNo: **EPA 6020** Analysis Date: **5/10/2016** SeqNo: **2322227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	95.4	70	130				
Manganese	0.568	0.50	0.5000	0	114	70	130				
Molybdenum	0.602	0.50	0.5000	0	120	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.454	0.50	0.5000	0	90.9	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.031	0.10	20.00	0	100	90	110				
Manganese	20.211	0.50	20.00	0	101	90	110				
Molybdenum	20.400	0.50	20.00	0	102	90	110				
Selenium	19.767	0.50	20.00	0	98.8	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.023	0.10	20.00	0	100	90	110				
Manganese	20.027	0.50	20.00	0	100	90	110				
Molybdenum	20.472	0.50	20.00	0	102	90	110				
Selenium	18.992	0.50	20.00	0	95.0	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.454	0.10	20.00	0	102	90	110				
Manganese	20.111	0.50	20.00	0	101	90	110				
Molybdenum	20.196	0.50	20.00	0	101	90	110				
Selenium	19.605	0.50	20.00	0	98.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCV**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.326	0.10	20.00	0	102	90	110				
Manganese	20.041	0.50	20.00	0	100	90	110				
Molybdenum	20.640	0.50	20.00	0	103	90	110				
Selenium	20.088	0.50	20.00	0	100	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ZZZZZZ**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.087	0.10	0.1000	0	87.3	70	130				
Manganese	0.546	0.50	0.5000	0	109	70	130				
Molybdenum	0.473	0.50	0.5000	0	94.5	70	130				
Selenium	0.498	0.50	0.5000	0	99.6	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.358	0.10	10.00	0	93.6	90	110				
Molybdenum	9.549	0.50	10.00	0	95.5	90	110				
Selenium	9.517	0.50	10.00	0	95.2	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ZZZZZZ**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.094	0.10	0.1000	0	93.8	80	120				
Molybdenum	0.425	0.50	0.5000	0	85.1	80	120				
Selenium	0.431	0.50	0.5000	0	86.2	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.513	0.10	20.00	0	103	90	110				
Molybdenum	19.823	0.50	20.00	0	99.1	90	110				
Selenium	19.787	0.50	20.00	0	98.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.400	0.10	20.00	0	102	90	110				
Molybdenum	20.682	0.50	20.00	0	103	90	110				
Selenium	18.767	0.50	20.00	0	93.8	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.468	0.10	20.00	0	102	90	110				
Molybdenum	20.366	0.50	20.00	0	102	90	110				
Selenium	18.984	0.50	20.00	0	94.9	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.263	0.10	20.00	0	101	90	110				
Molybdenum	20.541	0.50	20.00	0	103	90	110				
Selenium	18.109	0.50	20.00	0	90.5	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ZZZZZZ**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.109	0.10	0.1000	0	109	70	130				
Molybdenum	0.435	0.50	0.5000	0	86.9	70	130				
Selenium	0.473	0.50	0.5000	0	94.7	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.338	0.10	20.00	0	102	90	110				
Molybdenum	20.585	0.50	20.00	0	103	90	110				
Selenium	19.489	0.50	20.00	0	97.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.305	0.10	20.00	0	102	90	110				
Molybdenum	20.463	0.50	20.00	0	102	90	110				
Selenium	19.272	0.50	20.00	0	96.4	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ZZZZZZ**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	70	130				
Molybdenum	0.477	0.50	0.5000	0	95.3	70	130				
Selenium	0.401	0.50	0.5000	0	80.2	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **ICV**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.666	1.0	10.00	0	96.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **ZZZZZZ**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.004	1.0	1.000	0	100	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCV**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.854	1.0	20.00	0	99.3	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCV**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.722	1.0	20.00	0	98.6	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCV**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.205	1.0	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCV**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.675	1.0	20.00	0	98.4	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **ZZZZZZ**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.099	1.0	1.000	0	110	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCV**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.674	1.0	20.00	0	98.4	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCV**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.823	1.0	20.00	0	99.1	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCV**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.518	1.0	20.00	0	97.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCV**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.516	1.0	20.00	0	97.6	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **ZZZZZZ**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.016	1.0	1.000	0	102	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.042	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.066	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.070	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.055	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.057	0.50									
Molybdenum	0.143	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.067	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.079	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.068	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **CCB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **ICB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.049	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.026	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.025	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.061	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.061	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.095	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.045	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **CCB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.043	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSA**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.121	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSAB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.001	0.10	20.00	0	105	80	120				
Manganese	17.516	0.50	20.00	0	87.6	80	120				
Molybdenum	22.969	0.50	20.00	0	115	80	120				
Selenium	19.687	0.50	20.00	0	98.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSA**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.055	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSAB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.243	0.10	20.00	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSAB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.798	0.50	20.00	0	89.0	80	120				
Molybdenum	23.196	0.50	20.00	0	116	80	120				
Selenium	18.727	0.50	20.00	0	93.6	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSA**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID: **ICSAB**	Batch ID: **R108371**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.122	0.10	20.00	0	106	80	120				
Manganese	17.068	0.50	20.00	0	85.3	80	120				
Molybdenum	23.292	0.50	20.00	0	116	80	120				
Selenium	18.786	0.50	20.00	0	93.9	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSA**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSAB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.995	0.10	20.00	0	100	80	120				
Molybdenum	23.156	0.50	20.00	0	116	80	120				
Selenium	17.472	0.50	20.00	0	87.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSA**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	0.033	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSAB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.918	0.10	20.00	0	99.6	80	120				
Molybdenum	23.450	0.50	20.00	0	117	80	120				
Selenium	16.570	0.50	20.00	0	82.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSA**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSAB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.150	0.10	20.00	0	101	80	120				
Molybdenum	23.139	0.50	20.00	0	116	80	120				
Selenium	16.833	0.50	20.00	0	84.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108369
Client ID:	ICSA	Batch ID:	R108369	TestNo:	EPA 6020			Analysis Date:	5/10/2016	SeqNo:	2322029

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.244	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108369
Client ID:	ICSAB	Batch ID:	R108369	TestNo:	EPA 6020			Analysis Date:	5/10/2016	SeqNo:	2322030

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.673	1.0	20.00	0	103	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108369
Client ID:	ICSA	Batch ID:	R108369	TestNo:	EPA 6020			Analysis Date:	5/10/2016	SeqNo:	2322080

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.219	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108369
Client ID:	ICSAB	Batch ID:	R108369	TestNo:	EPA 6020			Analysis Date:	5/10/2016	SeqNo:	2322081

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.419	1.0	20.00	0	102	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108369
Client ID:	ICSA	Batch ID:	R108369	TestNo:	EPA 6020			Analysis Date:	5/10/2016	SeqNo:	2322130

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.219	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108369**
Client ID: **ICSAB**	Batch ID: **R108369**	TestNo: **EPA 6020**		Analysis Date: **5/10/2016**	SeqNo: **2322131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.108	1.0	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	90285.4	90285.4	100	PASS	70-130	65444.8	65444.8	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	89276.3	90285.4	98.88	PASS	70-130	66137.9	65444.8	101.06	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	88085.3	90285.4	97.56	PASS	70-130	65504.1	65444.8	100.09	PASS	70-130
Std3-5/50 ppb	ICAL	1	87538.5	90285.4	96.96	PASS	70-130	64742.2	65444.8	98.93	PASS	70-130
Std4-10/100 ppb	ICAL	1	87068.1	90285.4	96.44	PASS	70-130	63992.6	65444.8	97.78	PASS	70-130
Std5-20/200 ppb	ICAL	1	86125.5	90285.4	95.39	PASS	70-130	63349.1	65444.8	96.8	PASS	70-130
Std6-40/400 ppb	ICAL	1	87464.4	90285.4	96.88	PASS	70-130	63683.5	65444.8	97.31	PASS	70-130
Std7-100/1000 ppb	ICAL	1	87050.4	90285.4	96.42	PASS	70-130	63575.6	65444.8	97.14	PASS	70-130
Std8-200/2000 ppb	ICAL	1	87921.6	90285.4	97.38	PASS	70-130	63794.2	65444.8	97.48	PASS	70-130
ICV	ICV	1	79565.4	90285.4	88.13	PASS	70-130	57330.4	65444.8	87.6	PASS	70-130
ICB	ICB	1	88005.5	90285.4	97.47	PASS	70-130	65283.2	65444.8	99.75	PASS	70-130
LLICV	CCV1	1	95530.7	90285.4	105.81	PASS	70-130	70683.3	65444.8	108	PASS	70-130
ICSA1	ICSA	1	104258.3	90285.4	115.48	PASS	70-130	72059.1	65444.8	110.11	PASS	70-130
ICSAB1	ICSAB	1	95853.5	90285.4	106.17	PASS	70-130	66490.6	65444.8	101.6	PASS	70-130
CCV1	CCV	1	93671.6	90285.4	103.75	PASS	70-130	68452.7	65444.8	104.6	PASS	70-130
CCB1	CCB	1	92209	90285.4	102.13	PASS	70-130	68232.1	65444.8	104.26	PASS	70-130
CCV2	CCV	1	95501.7	90285.4	105.78	PASS	70-130	68688.1	65444.8	104.96	PASS	70-130
CCB2	CCB	1	89999.3	90285.4	99.68	PASS	70-130	66498	65444.8	101.61	PASS	70-130
MB-58305	MBLK	1	79320	90285.4	87.85	PASS	70-130	58075.1	65444.8	88.74	PASS	70-130
CCV3	CCV	1	83106.1	90285.4	92.048	PASS	70-130	61323.5	65444.8	93.7	PASS	70-130
CCB3	CCB	1	81282.6	90285.4	90.029	PASS	70-130	60994.6	65444.8	93.2	PASS	70-130
LCS-58305	LCS	1	84397	90285.4	93.48	PASS	70-130	62783.5	65444.8	95.93	PASS	70-130
N019606-001B	SAMP	1	78692.9	90285.4	87.16	PASS	70-130	55670.2	65444.8	85.064	PASS	70-130
N019606-002B	SAMP	1	79750.8	90285.4	88.33	PASS	70-130	56479.6	65444.8	86.3	PASS	70-130
N019606-003B	SAMP	1	77059.6	90285.4	85.35	PASS	70-130	53822.8	65444.8	82.24	PASS	70-130
N019606-004B	SAMP	1	82677	90285.4	91.57	PASS	70-130	59888.3	65444.8	91.51	PASS	70-130
N019606-005B	SAMP	1	66631.7	90285.4	73.8	PASS	70-130	42244.5	65444.8	64.55	NR!	70-130
N019606-006B	SAMP	1	68087.7	90285.4	75.41	PASS	70-130	43234.9	65444.8	66.063	NR!	70-130
N019606-007B	SAMP	1	68107.5	90285.4	75.44	PASS	70-130	43197	65444.8	66.005	NR!	70-130
N019606-008B	SAMP	1	67759.8	90285.4	75.051	PASS	70-130	42486.5	65444.8	64.92	NR!	70-130
N019606-009B	SAMP	1	72554.3	90285.4	80.36	PASS	70-130	45428.5	65444.8	69.41	NR!	70-130
CCV4	CCV	1	94356.2	90285.4	104.51	PASS	70-130	69374.4	65444.8	106	PASS	70-130
CCB4	CCB	1	95377.4	90285.4	105.64	PASS	70-130	69282.8	65444.8	105.86	PASS	70-130
LLCCV1	CCV2	1	100957.9	90285.4	111.82	PASS	70-130	73445.1	65444.8	112.22	PASS	70-130
ICSA2	ICSA	1	106018.9	90285.4	117.43	PASS	70-130	72757.9	65444.8	111.17	PASS	70-130
ICSAB2	ICSAB	1	87730.8	90285.4	97.17	PASS	70-130	60897.7	65444.8	93.052	PASS	70-130
N019606-010B	SAMP	1	68686.6	90285.4	76.077	PASS	70-130	46256.4	65444.8	70.68	PASS	70-130
N019606-011B	SAMP	1	69226.8	90285.4	76.68	PASS	70-130	46623.1	65444.8	71.24	PASS	70-130
N019606-012B	SAMP	1	75644	90285.4	83.78	PASS	70-130	51026.1	65444.8	77.97	PASS	70-130
N019606-013B	SAMP	1	64028.3	90285.4	70.92	PASS	70-130	41171.9	65444.8	62.91	NR!	70-130
N019606-014B	SAMP	1	84076.4	90285.4	93.12	PASS	70-130	59087.5	65444.8	90.29	PASS	70-130

INTERNAL STANDARD: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019612-001B	SAMP	1	79426	90285.4	87.97	PASS	70-130	57886.5	65444.8	88.45	PASS	70-130
N019612-002B	SAMP	1	80341.3	90285.4	88.99	PASS	70-130	57545.5	65444.8	87.93	PASS	70-130
N019612-003B	SAMP	1	74312.7	90285.4	82.31	PASS	70-130	51964.8	65444.8	79.4	PASS	70-130
N019606-001B	SAMP	5	77579.7	90285.4	85.93	PASS	70-130	56179.8	65444.8	85.84	PASS	70-130
N019606-001B	SAMP	25	81885.9	90285.4	90.7	PASS	70-130	60410.3	65444.8	92.31	PASS	70-130
CCV5	CCV	1	82058.6	90285.4	90.89	PASS	70-130	60409.2	65444.8	92.31	PASS	70-130
CCB5	CCB	1	84393.7	90285.4	93.47	PASS	70-130	62089.9	65444.8	94.87	PASS	70-130
N019606-001B-PS	PS	1	77900.1	90285.4	86.28	PASS	70-130	55031.4	65444.8	84.088	PASS	70-130
N019606-001B-PS	PS	5	81792.6	90285.4	90.59	PASS	70-130	59145.6	65444.8	90.37	PASS	70-130
N019606-001B-MS	MS	1	79719.9	90285.4	88.3	PASS	70-130	55064.7	65444.8	84.14	PASS	70-130
N019606-001B-MS	MS	5	80300.1	90285.4	88.94	PASS	70-130	57830.8	65444.8	88.37	PASS	70-130
N019606-001B-MSD	MSD	1	78168	90285.4	86.58	PASS	70-130	54424.9	65444.8	83.16	PASS	70-130
N019606-001B-MSD	MSD	5	79766.6	90285.4	88.35	PASS	70-130	57475.3	65444.8	87.82	PASS	70-130
N019606-011B	SAMP	5	74995.8	90285.4	83.065	PASS	70-130	53398.3	65444.8	81.59	PASS	70-130
N019606-011B	SAMP	25	84670.2	90285.4	93.78	PASS	70-130	62010.7	65444.8	94.75	PASS	70-130
N019606-011B-MS	MS	1	55716.5	90285.4	61.71	NR!	70-130	39039.9	65444.8	59.65	NR!	70-130
N019606-011B-MS	MS	5	64992	90285.4	71.99	PASS	70-130	46532.9	65444.8	71.1	PASS	70-130
CCV6	CCV	1	77306.3	90285.4	85.62	PASS	70-130	56963.7	65444.8	87.041	PASS	70-130
CCB6	CCB	1	80537	90285.4	89.2	PASS	70-130	59850.2	65444.8	91.45	PASS	70-130
N019606-011B-MS	MS	25	82440.2	90285.4	91.31	PASS	70-130	60325.4	65444.8	92.18	PASS	70-130
N019606-005B	SAMP	5	63078.3	90285.4	69.87	NR!	70-130	44625.4	65444.8	68.19	NR!	70-130
N019606-006B	SAMP	5	76722.6	90285.4	84.98	PASS	70-130	52820.6	65444.8	80.71	PASS	70-130
N019606-007B	SAMP	5	72073.2	90285.4	79.83	PASS	70-130	50009.5	65444.8	76.41	PASS	70-130
N019606-008B	SAMP	5	68861.7	90285.4	76.27	PASS	70-130	47768.5	65444.8	72.99	PASS	70-130
N019606-009B	SAMP	5	74634.4	90285.4	82.66	PASS	70-130	51659.3	65444.8	78.94	PASS	70-130
N019606-010B	SAMP	5	76775	90285.4	85.036	PASS	70-130	54669.9	65444.8	83.54	PASS	70-130
N019606-010B	SAMP	25	77813.7	90285.4	86.19	PASS	70-130	57005.8	65444.8	87.11	PASS	70-130
N019606-012B	SAMP	5	74502.2	90285.4	82.52	PASS	70-130	53528.7	65444.8	81.79	PASS	70-130
N019606-012B	SAMP	25	78294	90285.4	86.72	PASS	70-130	57326	65444.8	87.59	PASS	70-130
CCV7	CCV	1	80137.3	90285.4	88.76	PASS	70-130	58435.4	65444.8	89.29	PASS	70-130
CCB7	CCB	1	76042.7	90285.4	84.22	PASS	70-130	57164.2	65444.8	87.35	PASS	70-130
N019606-013B	SAMP	5	65925.8	90285.4	73.019	PASS	70-130	46672	65444.8	71.32	PASS	70-130
N019606-014B	SAMP	5	74654.5	90285.4	82.69	PASS	70-130	55525.1	65444.8	84.84	PASS	70-130
CCV8	CCV	1	77895.7	90285.4	86.28	PASS	70-130	57524.4	65444.8	87.9	PASS	70-130
CCB8	CCB	1	74884.1	90285.4	82.94	PASS	70-130	55877.3	65444.8	85.38	PASS	70-130
LLCCV2	CCV2	1	82442.6	90285.4	91.31	PASS	70-130	60728.4	65444.8	92.79	PASS	70-130
ICSA3	ICSA	1	80251.2	90285.4	88.89	PASS	70-130	56149.4	65444.8	85.8	PASS	70-130
ICSAB3	ICSAB	1	78151.3	90285.4	86.56	PASS	70-130	54750.4	65444.8	83.66	PASS	70-130

INTERNAL STANDARD: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	64095.1	64095.1	100	PASS	70-130	1902481.8	1902481.8	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	65161.6	64095.1	101.66	PASS	70-130	1902150.7	1902481.8	99.98	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	64201.2	64095.1	100.17	PASS	70-130	1894095.8	1902481.8	99.56	PASS	70-130
Std3-5/50 ppb	ICAL	1	63793	64095.1	99.53	PASS	70-130	1866041.4	1902481.8	98.085	PASS	70-130
Std4-10/100 ppb	ICAL	1	62364.1	64095.1	97.3	PASS	70-130	1858195.2	1902481.8	97.67	PASS	70-130
Std5-20/200 ppb	ICAL	1	61838.8	64095.1	96.48	PASS	70-130	1848409.2	1902481.8	97.16	PASS	70-130
Std6-40/400 ppb	ICAL	1	63586.5	64095.1	99.21	PASS	70-130	1880479.8	1902481.8	98.84	PASS	70-130
Std7-100/1000 ppb	ICAL	1	60987	64095.1	95.15	PASS	70-130	1867429.4	1902481.8	98.16	PASS	70-130
Std8-200/2000 ppb	ICAL	1	62645.7	64095.1	97.74	PASS	70-130	1863489.2	1902481.8	97.95	PASS	70-130
ICV	ICV	1	60410.3	64095.1	94.25	PASS	70-130	1609055.9	1902481.8	84.58	PASS	70-130
ICB	ICB	1	67768.8	64095.1	105.73	PASS	70-130	1781709.9	1902481.8	93.65	PASS	70-130
LLICV	CCV1	1	72413.3	64095.1	112.98	PASS	70-130	1938677.5	1902481.8	101.9	PASS	70-130
ICSA1	ICSA	1	67452.1	64095.1	105.24	PASS	70-130	1915437.5	1902481.8	100.68	PASS	70-130
ICSAB1	ICSAB	1	65165.3	64095.1	101.67	PASS	70-130	1741053	1902481.8	91.51	PASS	70-130
CCV1	CCV	1	67675.4	64095.1	105.59	PASS	70-130	1913448.2	1902481.8	100.58	PASS	70-130
CCB1	CCB	1	67012.5	64095.1	104.55	PASS	70-130	1924197.4	1902481.8	101.14	PASS	70-130
CCV2	CCV	1	70212.4	64095.1	109.54	PASS	70-130	1931299.1	1902481.8	101.51	PASS	70-130
CCB2	CCB	1	66598.5	64095.1	103.91	PASS	70-130	1889826.9	1902481.8	99.33	PASS	70-130
MB-58305	MBLK	1	57635.8	64095.1	89.92	PASS	70-130	1687518.4	1902481.8	88.7	PASS	70-130
CCV3	CCV	1	62349.6	64095.1	97.28	PASS	70-130	1759175.6	1902481.8	92.47	PASS	70-130
CCB3	CCB	1	59695.2	64095.1	93.14	PASS	70-130	1747130.8	1902481.8	91.83	PASS	70-130
LCS-58305	LCS	1	63046.7	64095.1	98.36	PASS	70-130	1776129.4	1902481.8	93.36	PASS	70-130
N019606-001B	SAMP	1	56014.6	64095.1	87.39	PASS	70-130	1437313.4	1902481.8	75.55	PASS	70-130
N019606-002B	SAMP	1	57326.8	64095.1	89.44	PASS	70-130	1452601.3	1902481.8	76.35	PASS	70-130
N019606-003B	SAMP	1	55810.6	64095.1	87.075	PASS	70-130	1413096.5	1902481.8	74.28	PASS	70-130
N019606-004B	SAMP	1	61527.6	64095.1	95.99	PASS	70-130	1516217.3	1902481.8	79.7	PASS	70-130
N019606-005B	SAMP	1	40844.2	64095.1	63.72	NR!	70-130	1024666.1	1902481.8	53.86	NR!	70-130
N019606-006B	SAMP	1	41224	64095.1	64.32	NR!	70-130	1038644.6	1902481.8	54.59	NR!	70-130
N019606-007B	SAMP	1	43891	64095.1	68.48	NR!	70-130	1026304.6	1902481.8	53.95	NR!	70-130
N019606-008B	SAMP	1	37810.3	64095.1	58.99	NR!	70-130	1015598.6	1902481.8	53.38	NR!	70-130
N019606-009B	SAMP	1	44406.8	64095.1	69.28	NR!	70-130	1118109.8	1902481.8	58.77	NR!	70-130
CCV4	CCV	1	72194.7	64095.1	112.64	PASS	70-130	1897417.2	1902481.8	99.73	PASS	70-130
CCB4	CCB	1	73926.3	64095.1	115.34	PASS	70-130	1929542.2	1902481.8	101.42	PASS	70-130
LLCCV1	CCV2	1	77682.8	64095.1	121.2	PASS	70-130	2039352.2	1902481.8	107.19	PASS	70-130
ICSA2	ICSA	1	72756.9	64095.1	113.51	PASS	70-130	1877541.5	1902481.8	98.69	PASS	70-130
ICSAB2	ICSAB	1	64203.3	64095.1	100.17	PASS	70-130	1542676.1	1902481.8	81.088	PASS	70-130
N019606-010B	SAMP	1	47988.1	64095.1	74.87	PASS	70-130	1175843.5	1902481.8	61.81	NR!	70-130
N019606-011B	SAMP	1	48234.4	64095.1	75.25	PASS	70-130	1152085.2	1902481.8	60.56	NR!	70-130
N019606-012B	SAMP	1	51524.4	64095.1	80.39	PASS	70-130	1260682.2	1902481.8	66.27	NR!	70-130
N019606-013B	SAMP	1	40678.5	64095.1	63.47	NR!	70-130	1000261.5	1902481.8	52.58	NR!	70-130
N019606-014B	SAMP	1	62562.7	64095.1	97.61	PASS	70-130	1542067.6	1902481.8	81.056	PASS	70-130

INTERNAL STANDARD: 160510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019612-001B	SAMP	1	61418.3	64095.1	95.82	PASS	70-130	1513935.7	1902481.8	79.58	PASS	70-130
N019612-002B	SAMP	1	61699.4	64095.1	96.26	PASS	70-130	1514593.8	1902481.8	79.61	PASS	70-130
N019612-003B	SAMP	1	53750.3	64095.1	83.86	PASS	70-130	1303307.2	1902481.8	68.51	NR!	70-130
N019606-001B	SAMP	5	56608.7	64095.1	88.32	PASS	70-130	1470724.5	1902481.8	77.31	PASS	70-130
N019606-001B	SAMP	25	60623.3	64095.1	94.58	PASS	70-130	1633200.6	1902481.8	85.85	PASS	70-130
CCV5	CCV	1	60997.1	64095.1	95.17	PASS	70-130	1665551.8	1902481.8	87.55	PASS	70-130
CCB5	CCB	1	60509.6	64095.1	94.41	PASS	70-130	1711618.8	1902481.8	89.97	PASS	70-130
N019606-001B-PS	PS	1	54098.3	64095.1	84.4	PASS	70-130	1403536.3	1902481.8	73.77	PASS	70-130
N019606-001B-PS	PS	5	58631.6	64095.1	91.48	PASS	70-130	1535794.9	1902481.8	80.73	PASS	70-130
N019606-001B-MS	MS	1	55769.4	64095.1	87.01	PASS	70-130	1423424.3	1902481.8	74.82	PASS	70-130
N019606-001B-MS	MS	5	58275	64095.1	90.92	PASS	70-130	1535262.2	1902481.8	80.7	PASS	70-130
N019606-001B-MSD	MSD	1	55846.1	64095.1	87.13	PASS	70-130	1399218.8	1902481.8	73.55	PASS	70-130
N019606-001B-MSD	MSD	5	58325.1	64095.1	91	PASS	70-130	1526655.6	1902481.8	80.25	PASS	70-130
N019606-011B	SAMP	5	57495.1	64095.1	89.7	PASS	70-130	1397719.8	1902481.8	73.47	PASS	70-130
N019606-011B	SAMP	25	61602.6	64095.1	96.11	PASS	70-130	1646456.7	1902481.8	86.54	PASS	70-130
N019606-011B-MS	MS	1	45130.2	64095.1	70.41	PASS	70-130	957987.2	1902481.8	50.35	NR!	70-130
N019606-011B-MS	MS	5	49994	64095.1	78	PASS	70-130	1205509.8	1902481.8	63.37	NR!	70-130
CCV6	CCV	1	58459.9	64095.1	91.21	PASS	70-130	1555476.3	1902481.8	81.76	PASS	70-130
CCB6	CCB	1	60996.8	64095.1	95.17	PASS	70-130	1644046.1	1902481.8	86.42	PASS	70-130
N019606-011B-MS	MS	25	60018.7	64095.1	93.64	PASS	70-130	1611825.6	1902481.8	84.72	PASS	70-130
N019606-005B	SAMP	5	43826.5	64095.1	68.38	NR!	70-130	1133864.5	1902481.8	59.6	NR!	70-130
N019606-006B	SAMP	5	54586.4	64095.1	85.16	PASS	70-130	1363278.4	1902481.8	71.66	PASS	70-130
N019606-007B	SAMP	5	50747.5	64095.1	79.18	PASS	70-130	1272632.2	1902481.8	66.89	NR!	70-130
N019606-008B	SAMP	5	51750.6	64095.1	80.74	PASS	70-130	1222102.4	1902481.8	64.24	NR!	70-130
N019606-009B	SAMP	5	50665.1	64095.1	79.047	PASS	70-130	1314186.8	1902481.8	69.077	NR!	70-130
N019606-010B	SAMP	5	56314.4	64095.1	87.86	PASS	70-130	1429172.7	1902481.8	75.12	PASS	70-130
N019606-010B	SAMP	25	59648.5	64095.1	93.062	PASS	70-130	1522642	1902481.8	80.035	PASS	70-130
N019606-012B	SAMP	5	55720.1	64095.1	86.93	PASS	70-130	1393346.5	1902481.8	73.24	PASS	70-130
N019606-012B	SAMP	25	57341.3	64095.1	89.46	PASS	70-130	1526193.9	1902481.8	80.22	PASS	70-130
CCV7	CCV	1	59629.7	64095.1	93.033	PASS	70-130	1639879.5	1902481.8	86.2	PASS	70-130
CCB7	CCB	1	57674.5	64095.1	89.98	PASS	70-130	1582765.4	1902481.8	83.19	PASS	70-130
N019606-013B	SAMP	5	49313.2	64095.1	76.94	PASS	70-130	1196510.6	1902481.8	62.89	NR!	70-130
N019606-014B	SAMP	5	56720.2	64095.1	88.49	PASS	70-130	1481859.1	1902481.8	77.89	PASS	70-130
CCV8	CCV	1	57419.6	64095.1	89.59	PASS	70-130	1581546.1	1902481.8	83.13	PASS	70-130
CCB8	CCB	1	55720.5	64095.1	86.93	PASS	70-130	1562333.7	1902481.8	82.12	PASS	70-130
LLCCV2	CCV2	1	60541.6	64095.1	94.46	PASS	70-130	1694966.5	1902481.8	89.092	PASS	70-130
ICSA3	ICSA	1	54983.3	64095.1	85.78	PASS	70-130	1466486.1	1902481.8	77.083	PASS	70-130
ICSAB3	ICSAB	1	53667.9	64095.1	83.73	PASS	70-130	1403150.8	1902481.8	73.75	PASS	70-130

INTERNAL STANDARD: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	74947.7	74947.7	100	PASS	70-130	87729.7	87729.7	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	77551	74947.7	103.47	PASS	70-130	91352.2	87729.7	104.13	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	73034.8	74947.7	97.45	PASS	70-130	86778.6	87729.7	98.92	PASS	70-130
Std3-5/50 ppb	ICAL	1	69173.6	74947.7	92.3	PASS	70-130	82495.2	87729.7	94.033	PASS	70-130
Std4-10/100 ppb	ICAL	1	66283.1	74947.7	88.44	PASS	70-130	79125.8	87729.7	90.19	PASS	70-130
Std5-20/200 ppb	ICAL	1	64696.8	74947.7	86.32	PASS	70-130	77655	87729.7	88.52	PASS	70-130
Std6-40/400 ppb	ICAL	1	64261.7	74947.7	85.74	PASS	70-130	76818.8	87729.7	87.56	PASS	70-130
Std7-100/1000 ppb	ICAL	1	62591.9	74947.7	83.51	PASS	70-130	74492.6	87729.7	84.91	PASS	70-130
Std8-200/2000 ppb	ICAL	1	63595.6	74947.7	84.85	PASS	70-130	75201.8	87729.7	85.72	PASS	70-130
ICV	ICV	1	61347.3	74947.7	81.85	PASS	70-130	63788.7	87729.7	72.71	PASS	70-130
ICB	ICB	1	58188.2	74947.7	77.64	PASS	70-130	66609.8	87729.7	75.93	PASS	70-130
LLICV	CCV1	1	58032	74947.7	77.43	PASS	70-130	67238.9	87729.7	76.64	PASS	70-130
ICSA1	ICSA	1	67019.4	74947.7	89.42	PASS	70-130	76813.2	87729.7	87.56	PASS	70-130
ICSAB1	ICSAB	1	75080.7	74947.7	100.18	PASS	70-130	89289.4	87729.7	101.78	PASS	70-130
N019606-005B	SAMP	25	70055.4	74947.7	93.47	PASS	70-130	85824.6	87729.7	97.83	PASS	70-130
N019606-006B	SAMP	5	61037.1	74947.7	81.44	PASS	70-130	72321.8	87729.7	82.44	PASS	70-130
N019606-007B	SAMP	25	69603.6	74947.7	92.87	PASS	70-130	85995.3	87729.7	98.023	PASS	70-130
N019606-008B	SAMP	25	65174.3	74947.7	86.96	PASS	70-130	84151.5	87729.7	95.92	PASS	70-130
N019606-009B	SAMP	25	67528.4	74947.7	90.1	PASS	70-130	81376.4	87729.7	92.76	PASS	70-130
N019606-013B	SAMP	25	69868.9	74947.7	93.22	PASS	70-130	85538.4	87729.7	97.5	PASS	70-130
CCV1	CCV	1	69272.1	74947.7	92.43	PASS	70-130	84859.2	87729.7	96.73	PASS	70-130
CCB1	CCB	1	67409	74947.7	89.94	PASS	70-130	81930.5	87729.7	93.39	PASS	70-130
CCV2	CCV	1	78912	74947.7	105.29	PASS	70-130	97651.2	87729.7	111.31	PASS	70-130
CCB2	CCB	1	70356.7	74947.7	93.87	PASS	70-130	83692.2	87729.7	95.4	PASS	70-130
CCV3	CCV	1	80130.4	74947.7	106.92	PASS	70-130	97476.7	87729.7	111.11	PASS	70-130
CCB3	CCB	1	74992.6	74947.7	100.06	PASS	70-130	91797.9	87729.7	104.64	PASS	70-130
CCV4	CCV	1	79938.2	74947.7	106.66	PASS	70-130	96573	87729.7	110.08	PASS	70-130
CCB4	CCB	1	75630.9	74947.7	100.91	PASS	70-130	93185.5	87729.7	106.22	PASS	70-130
LLCCV1	CCV2	1	61510.1	74947.7	82.071	PASS	70-130	65370.7	87729.7	74.51	PASS	70-130
ICSA2	ICSA	1	75410	74947.7	100.62	PASS	70-130	86318.2	87729.7	98.39	PASS	70-130
ICSAB2	ICSAB	1	75300.6	74947.7	100.47	PASS	70-130	89557.4	87729.7	102.08	PASS	70-130
CCV5	CCV	1	71992.6	74947.7	96.057	PASS	70-130	87975.8	87729.7	100.28	PASS	70-130
CCB5	CCB	1	69116.9	74947.7	92.22	PASS	70-130	84773.2	87729.7	96.63	PASS	70-130
CCV6	CCV	1	73625.4	74947.7	98.24	PASS	70-130	89240.5	87729.7	101.72	PASS	70-130
CCB6	CCB	1	72551.9	74947.7	96.8	PASS	70-130	88489.1	87729.7	100.87	PASS	70-130
LLCCV2	CCV2	1	91657.8	74947.7	122.3	PASS	70-130	112145.6	87729.7	127.83	PASS	70-130
ICSA3	ICSA	1	73135.2	74947.7	97.58	PASS	70-130	84756.5	87729.7	96.61	PASS	70-130
ICSAB3	ICSAB	1	77650.6	74947.7	103.61	PASS	70-130	94459.6	87729.7	107.67	PASS	70-130

INTERNAL STANDARD: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2257002.8	2257002.8	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	2370992.7	2257002.8	105.05	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	2264191.1	2257002.8	100.32	PASS	70-130
Std3-5/50 ppb	ICAL	1	2163179.1	2257002.8	95.84	PASS	70-130
Std4-10/100 ppb	ICAL	1	2091152.7	2257002.8	92.65	PASS	70-130
Std5-20/200 ppb	ICAL	1	2062663.1	2257002.8	91.39	PASS	70-130
Std6-40/400 ppb	ICAL	1	2043626.1	2257002.8	90.55	PASS	70-130
Std7-100/1000 ppb	ICAL	1	1999894.8	2257002.8	88.61	PASS	70-130
Std8-200/2000 ppb	ICAL	1	2003015.1	2257002.8	88.75	PASS	70-130
ICV	ICV	1	2064788.1	2257002.8	91.48	PASS	70-130
ICB	ICB	1	1866119.8	2257002.8	82.68	PASS	70-130
LLICV	CCV1	1	1853801.1	2257002.8	82.14	PASS	70-130
ICSA1	ICSA	1	1885833.1	2257002.8	83.55	PASS	70-130
ICSAB1	ICSAB	1	2091308.4	2257002.8	92.66	PASS	70-130
N019606-005B	SAMP	25	1982865.5	2257002.8	87.85	PASS	70-130
N019606-006B	SAMP	5	1631954.7	2257002.8	72.31	PASS	70-130
N019606-007B	SAMP	25	1940041.3	2257002.8	85.96	PASS	70-130
N019606-008B	SAMP	25	1816852.8	2257002.8	80.5	PASS	70-130
N019606-009B	SAMP	25	1908737.5	2257002.8	84.57	PASS	70-130
N019606-013B	SAMP	25	1975767.5	2257002.8	87.54	PASS	70-130
CCV1	CCV	1	2192774.7	2257002.8	97.15	PASS	70-130
CCB1	CCB	1	2125992.8	2257002.8	94.2	PASS	70-130
CCV2	CCV	1	2265392.9	2257002.8	100.37	PASS	70-130
CCB2	CCB	1	2026894.2	2257002.8	89.8	PASS	70-130
CCV3	CCV	1	2315597.2	2257002.8	102.6	PASS	70-130
CCB3	CCB	1	2182922.7	2257002.8	96.72	PASS	70-130
CCV4	CCV	1	2282826.5	2257002.8	101.14	PASS	70-130
CCB4	CCB	1	2177867.9	2257002.8	96.49	PASS	70-130
LLCCV1	CCV2	1	2025282.7	2257002.8	89.73	PASS	70-130
ICSA2	ICSA	1	2054370.2	2257002.8	91.022	PASS	70-130
ICSAB2	ICSAB	1	1971864.1	2257002.8	87.37	PASS	70-130
CCV5	CCV	1	2078307.6	2257002.8	92.083	PASS	70-130
CCB5	CCB	1	2036325.2	2257002.8	90.22	PASS	70-130
CCV6	CCV	1	2153401	2257002.8	95.41	PASS	70-130
CCB6	CCB	1	2128896.4	2257002.8	94.32	PASS	70-130
LLCCV2	CCV2	1	2729722.7	2257002.8	120.94	PASS	70-130
ICSA3	ICSA	1	1979881.4	2257002.8	87.72	PASS	70-130
ICSAB3	ICSAB	1	2094242	2257002.8	92.79	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N019606
Test Method: EPA 6020
Analysis Date: 5/10/2016

Matrix: Groundwater
Batch No.: 58305

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn, Mo & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N019606-001B DT 5X	Arsenic	ug/L	2.105025	NA	1.841511	14.31%	10
N019606-001B DT 25X	Chromium	ug/L	207.3287	PASS	202.3045	2.48%	10
N019606-001B DT 5X	Manganese	ug/L	0	NA	0		10
N019606-001B DT 5X	Molybdenum	ug/L	4.461621	NA	4.47527	0.30%	10
N019606-001B DT 5X	Selenium	ug/L	5.859506	NA	5.720311	2.43%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N019606-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108371**
Client ID:	**ZZZZZZ**	Batch ID: **58305**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2016**	SeqNo: **2322242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.923	0.10	10.00	1.842	101	80	120				
Manganese	92.178	0.50	100.0	0	92.2	80	120				
Molybdenum	15.550	0.50	10.00	4.475	111	80	120				
Selenium	14.090	0.50	10.00	5.720	83.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019606
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N019606-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108369
Client ID:	ZZZZZZ	Batch ID:	58305	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2016	SeqNo:	2322095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	195.873	5.0	10.00	202.3	-64.3	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Detection Limit
Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

ACCEPTANCE CRITERIA: MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	MDL*10	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0313	0.3133	0.3000	0.187	0.50	0.515	103
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0248	0.2485	0.3000	0.049	0.10	0.103	103
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699	0.6986	0.3000	0.403	1.00	1.245	125
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0430	0.4304	0.3000	0.185	0.50	0.524	105
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0473	0.4734	0.3000	0.174	0.50	0.501	100
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0192	0.1925	0.3000	0.321	1.00	0.973	97
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263	0.2630	0.3000	0.163	0.50	0.475	95
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2626	2.6262	0.3000	0.328	1.00	1.062	106
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7517	7.5170	0.3000	0.605	10.00	11.338	113
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367	0.3670	0.3000	0.343	1.00	1.018	102
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0554	0.5543	0.3000	0.193	0.50	0.605	121
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0385	0.3853	0.3000	0.247	0.50	0.660	132
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0395	0.3954	0.3000	0.341	1.00	1.002	100
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276	0.2760	0.3000	0.170	0.50	0.502	100
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590	0.5899	0.3000	0.247	1.00	1.029	103
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296	0.2961	0.3000	0.186	0.50	0.549	110
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0327	0.3272	0.3000	0.181	0.50	0.533	107
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213	0.2133	0.3000	0.221	1.00	0.873	87
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2678	2.6780	0.3000	3.286	10.00	10.085	101

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N019607

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N019607

Item	Pages
Cover Page	1-7
Analytical Result / QC Summary Reports	8-62
Sample Receiving Items	63-68
List of Analysts	69
Raw Data	
SM 2540C	70-80
EPA 218.6	81-389
SM 2320B	390-399
EPA 300.0	400-435
SM 4500-NO3F	436-454
EPA 6010B_Dissolved	455-513
EPA 6020_Dissolved	514-565

May 19, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019607

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 03, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019607

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N019607-005, N019607-006, N019607-008, N019607-009 and N019607-010 due to matrix interference. Samples were analyzed at lower dilution however retention time criteria and matrix spike were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Method Blank (MB-R108509) has hit greater than 0.02 ppb but less than 1/10 of the amount measured in affected sample.

Because the results for total dissolved chromium (0 ug/L) and hexavalent chromium (1.2 ug/L) for sample N019607-009 (MW-62-110-Q216) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria. Reported result was taken from the re-analysis.

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0 ug/L) for sample N019607-010 (MW-21-Q216) are discrepant, sample re-analysis and Matrix Spike protocol were performed and the spike recovery is within criteria.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of sample N019607-003 upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N019606-001B-MS2 and N019606-001B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N019559-007C-MS and N019559-007C-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N019607-002, N019607-005, N019607-006, N019607-008, N019607-009 and N019607-010 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (0 ug/L) and hexavalent chromium (1.2 ug/L) for sample N019607-009 (MW-62-110-Q216) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 0 and 0.06 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0 ug/L) for sample N019607-010 (MW-21-Q216) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.6 and 0.53 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *19-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019607
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019607-001A	MW-38S-Q216	Groundwater	5/3/2016 12:14:00 PM	5/3/2016	5/19/2016
N019607-001B	MW-38S-Q216	Groundwater	5/3/2016 12:14:00 PM	5/3/2016	5/19/2016
N019607-001C	MW-38S-Q216	Groundwater	5/3/2016 12:14:00 PM	5/3/2016	5/19/2016
N019607-002A	TW-01-Q216	Groundwater	5/3/2016 2:55:00 PM	5/3/2016	5/19/2016
N019607-002B	TW-01-Q216	Groundwater	5/3/2016 2:55:00 PM	5/3/2016	5/19/2016
N019607-002C	TW-01-Q216	Groundwater	5/3/2016 2:55:00 PM	5/3/2016	5/19/2016
N019607-003A	MW-10-Q216	Groundwater	5/3/2016 1:09:00 PM	5/3/2016	5/19/2016
N019607-003B	MW-10-Q216	Groundwater	5/3/2016 1:09:00 PM	5/3/2016	5/19/2016
N019607-003C	MW-10-Q216	Groundwater	5/3/2016 1:09:00 PM	5/3/2016	5/19/2016
N019607-003D	MW-10-Q216	Groundwater	5/3/2016 1:09:00 PM	5/3/2016	5/19/2016
N019607-004A	MW-718-Q216	Groundwater	5/3/2016 1:20:00 PM	5/3/2016	5/19/2016
N019607-005A	MW-71-035-Q216	Groundwater	5/3/2016 3:25:00 PM	5/3/2016	5/19/2016
N019607-005B	MW-71-035-Q216	Groundwater	5/3/2016 3:25:00 PM	5/3/2016	5/19/2016
N019607-005C	MW-71-035-Q216	Groundwater	5/3/2016 3:25:00 PM	5/3/2016	5/19/2016
N019607-006A	MW-914-Q216	Groundwater	5/3/2016 3:35:00 PM	5/3/2016	5/19/2016
N019607-006B	MW-914-Q216	Groundwater	5/3/2016 3:35:00 PM	5/3/2016	5/19/2016
N019607-006C	MW-914-Q216	Groundwater	5/3/2016 3:35:00 PM	5/3/2016	5/19/2016
N019607-007A	MW-65-160-Q216	Groundwater	5/3/2016 3:28:00 PM	5/3/2016	5/19/2016
N019607-007B	MW-65-160-Q216	Groundwater	5/3/2016 3:28:00 PM	5/3/2016	5/19/2016
N019607-007C	MW-65-160-Q216	Groundwater	5/3/2016 3:28:00 PM	5/3/2016	5/19/2016
N019607-008A	MW-62-190-Q216	Groundwater	5/3/2016 3:55:00 PM	5/3/2016	5/19/2016
N019607-008B	MW-62-190-Q216	Groundwater	5/3/2016 3:55:00 PM	5/3/2016	5/19/2016
N019607-008C	MW-62-190-Q216	Groundwater	5/3/2016 3:55:00 PM	5/3/2016	5/19/2016
N019607-009A	MW-62-110-Q216	Groundwater	5/3/2016 4:10:00 PM	5/3/2016	5/19/2016
N019607-009B	MW-62-110-Q216	Groundwater	5/3/2016 4:10:00 PM	5/3/2016	5/19/2016
N019607-009C	MW-62-110-Q216	Groundwater	5/3/2016 4:10:00 PM	5/3/2016	5/19/2016
N019607-010A	MW-21-Q216	Groundwater	5/3/2016 4:05:00 PM	5/3/2016	5/19/2016
N019607-010B	MW-21-Q216	Groundwater	5/3/2016 4:05:00 PM	5/3/2016	5/19/2016
N019607-010C	MW-21-Q216	Groundwater	5/3/2016 4:05:00 PM	5/3/2016	5/19/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019607
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019607-011A	MW-719-Q216	Groundwater	5/3/2016 4:30:00 PM	5/3/2016	5/19/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 1:09:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160505B**	QC Batch: **58308**			PrepDate	**5/5/2016**		Analyst: **QBM**
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	5/5/2016 08:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	**LCS-58308**	SampType:	**LCS**	TestCode:	**160.1_2540C**	Units:	**mg/L**	Prep Date:	**5/5/2016**	RunNo:	**108283**
Client ID:	**LCSW**	Batch ID:	**58308**	TestNo:	**SM2540C**			Analysis Date:	**5/5/2016**	SeqNo:	**2317069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	956.000	10	1000	0	95.6	80	120				

Sample ID	**MB-58308**	SampType:	**MBLK**	TestCode:	**160.1_2540C**	Units:	**mg/L**	Prep Date:	**5/5/2016**	RunNo:	**108283**
Client ID:	**PBW**	Batch ID:	**58308**	TestNo:	**SM2540C**			Analysis Date:	**5/5/2016**	SeqNo:	**2317070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	**N019614-002A-DUP**	SampType:	**DUP**	TestCode:	**160.1_2540C**	Units:	**mg/L**	Prep Date:	**5/5/2016**	RunNo:	**108283**
Client ID:	**ZZZZZZ**	Batch ID:	**58308**	TestNo:	**SM2540C**			Analysis Date:	**5/5/2016**	SeqNo:	**2317079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4300.000	50						4325	0.580	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-001

Client Sample ID: MW-38S-Q216
Collection Date: 5/3/2016 12:14:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160510B**	QC Batch: **R108381**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/10/2016 06:06 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160513B**	QC Batch: **58340**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/14/2016 02:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 2:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160510B**	QC Batch: **R108381**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	2400	13	40		µg/L	200	5/10/2016 07:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160513B**	QC Batch: **58340**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	2100	0.48	25		µg/L	25	5/14/2016 03:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 1:09:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160510B**	QC Batch: **R108381**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	220	1.3	4.0		µg/L	20	5/10/2016 08:06 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160513B**	QC Batch: **58340**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	220	0.096	5.0		µg/L	5	5/14/2016 03:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-718-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160510B**	QC Batch: **R108381**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/10/2016 08:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160510B**	QC Batch: **R108381**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/10/2016 11:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513B**	QC Batch: **58340**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/14/2016 03:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 3:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/12/2016 01:45 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513B**	QC Batch: **58340**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/14/2016 03:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 3:28:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	130	1.3	4.0		µg/L	20	5/12/2016 02:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513B**	QC Batch: **58340**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	130	0.019	1.0		µg/L	1	5/14/2016 04:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/12/2016 02:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513B**	QC Batch: **58340**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/14/2016 04:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160516A**	QC Batch: **R108509**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	1.2	0.33	1.0		µg/L	5	5/16/2016 03:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160513B**	QC Batch: **58340**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/14/2016 04:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-010

Client Sample ID: MW-21-Q216
Collection Date: 5/3/2016 4:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/12/2016 02:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160513B**	QC Batch: **58340**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	1.8	0.019	1.0		µg/L	1	5/14/2016 05:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-719-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 4:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160510B**	QC Batch: **R108381**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/10/2016 11:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R108381**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **PBW**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R108381**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **LCSW**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.875	0.20	5.000	0	97.5	90	110				

Sample ID **N019607-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.145	0.20						0.1387	0	20	

Sample ID **N019607-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.102	0.20	1.000	0.1387	96.3	90	110				

Sample ID **N019607-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.147	0.20	1.000	0.1387	101	90	110	1.102	3.98	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019606-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36.175	1.0	25.00	12.13	96.2	90	110				

Sample ID **N019606-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	230.044	4.0	100.0	126.7	103	90	110				

Sample ID **N019607-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3355.520	40	1000	2364	99.2	90	110				

Sample ID **N019607-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	319.112	4.0	100.0	217.4	102	90	110				

Sample ID **N019607-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0.1151	96.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019607-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108381
Client ID:	ZZZZZZ	Batch ID:	R108381	TestNo:	EPA 218.6			Analysis Date:	5/10/2016	SeqNo:	2322942

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.145	0.20	1.000	0.09000	105	90	110				

Sample ID	N019607-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108381
Client ID:	ZZZZZZ	Batch ID:	R108381	TestNo:	EPA 218.6			Analysis Date:	5/10/2016	SeqNo:	2322944

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.416	1.0	5.000	0.5290	97.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108431	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431		
Client ID:	PBW	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324793		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R108431	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431		
Client ID:	LCSW	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324794		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.037	0.20	5.000	0	101	90	110					

Sample ID	N019719-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431		
Client ID:	ZZZZZZ	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324796		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		3.154	0.20						3.091	2.00	20		

Sample ID	N019719-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431		
Client ID:	ZZZZZZ	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324797		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		8.248	0.20	5.000	3.091	103	90	110					

Sample ID	N019719-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431		
Client ID:	ZZZZZZ	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324798		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		8.265	0.20	5.000	3.091	103	90	110	8.248	0.210	20		

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019607-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108431**
Client ID: **ZZZZZZ** Batch ID: **R108431** TestNo: **EPA 218.6** Analysis Date: **5/12/2016** SeqNo: **2324806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.833	1.0	5.000	0	96.7	90	110				

Sample ID **N019607-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108431**
Client ID: **ZZZZZZ** Batch ID: **R108431** TestNo: **EPA 218.6** Analysis Date: **5/12/2016** SeqNo: **2324808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	233.044	4.0	100.0	132.3	101	90	110				

Sample ID **N019607-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108431**
Client ID: **ZZZZZZ** Batch ID: **R108431** TestNo: **EPA 218.6** Analysis Date: **5/12/2016** SeqNo: **2324810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.442	1.0	5.000	0.4970	98.9	90	110				

Sample ID **N019607-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108431**
Client ID: **ZZZZZZ** Batch ID: **R108431** TestNo: **EPA 218.6** Analysis Date: **5/12/2016** SeqNo: **2324812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.025	1.0	5.000	0.8665	103	90	110				

Sample ID **N019628-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108431**
Client ID: **ZZZZZZ** Batch ID: **R108431** TestNo: **EPA 218.6** Analysis Date: **5/12/2016** SeqNo: **2324814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	171.216	2.0	50.00	119.6	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019628-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3151.500	40	1000	2130	102	90	110				

Sample ID **N019628-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	24111.000	500	12500	12280	94.7	90	110				

Sample ID **N019628-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.038	0.20	1.000	0	104	90	110				

Sample ID **N019628-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Sample ID **N019628-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	229.324	4.0	100.0	127.4	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019628-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431
Client ID:	ZZZZZZ	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324832

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.895	1.0	5.000	0	97.9	90	110				

Sample ID	N019628-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431
Client ID:	ZZZZZZ	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324838

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.504	1.0	5.000	0.7210	95.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108509	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108509	
Client ID:	PBW	Batch ID:	R108509	TestNo:	EPA 218.6			Analysis Date:	5/16/2016	SeqNo:	2329906	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		ND	0.20									

Sample ID	LCS-R108509	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108509	
Client ID:	LCSW	Batch ID:	R108509	TestNo:	EPA 218.6			Analysis Date:	5/16/2016	SeqNo:	2329907	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		4.981	0.20	5.000	0	99.6	90	110				

Sample ID	N019638-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108509	
Client ID:	ZZZZZZ	Batch ID:	R108509	TestNo:	EPA 218.6			Analysis Date:	5/16/2016	SeqNo:	2329909	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		3.779	0.20						3.745	0.917	20	

Sample ID	N019638-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108509	
Client ID:	ZZZZZZ	Batch ID:	R108509	TestNo:	EPA 218.6			Analysis Date:	5/16/2016	SeqNo:	2329910	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		8.964	0.20	5.000	3.745	104	90	110				

Sample ID	N019638-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108509	
Client ID:	ZZZZZZ	Batch ID:	R108509	TestNo:	EPA 218.6			Analysis Date:	5/16/2016	SeqNo:	2329911	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		9.151	0.20	5.000	3.745	108	90	110	8.964	2.07	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019607-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108509
Client ID:	ZZZZZZ	Batch ID:	R108509	TestNo:	EPA 218.6			Analysis Date:	5/16/2016	SeqNo:	2331486

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.883	1.0	5.000	1.236	92.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-58340**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108469**
Client ID: **PBW**	Batch ID: **58340**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2327029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.023	1.0									

Sample ID **LCS-58340**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108469**
Client ID: **LCSW**	Batch ID: **58340**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2327030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.411	1.0	10.00	0	94.1	85	115				

Sample ID **N019636-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108469**
Client ID: **ZZZZZZ**	Batch ID: **58340**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2327036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.886	1.0	10.00	1.608	92.8	75	125				

Sample ID **N019636-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108469**
Client ID: **ZZZZZZ**	Batch ID: **58340**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2327037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.570	1.0	10.00	1.608	89.6	75	125	10.89	2.94	20	

Sample ID **N019638-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108469**
Client ID: **ZZZZZZ**	Batch ID: **58340**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2327039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.333	1.0	10.00	3.610	87.2	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 1:09:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160504E**	QC Batch: **R108282**			PrepDate			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	5/4/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R108282**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **LCSW**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101.053	5.0	100.0	0	101	85	115				

Sample ID **MB-R108282**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **PBW**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N019606-001DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **ZZZZZZ**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	226.316	5.0	100.0	130.5	95.8	75	125				

Sample ID **N019606-001DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **ZZZZZZ**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	227.368	5.0	100.0	130.5	96.8	75	125	226.3	0.464	20	

Sample ID **N019606-002DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108282**
Client ID: **ZZZZZZ**	Batch ID: **R108282**	TestNo: **SM 2320 B**		Analysis Date: **5/4/2016**	SeqNo: **2317025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	90.526	5.0						90.53	0	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-003

Client Sample ID: MW-10-Q216
Collection Date: 5/3/2016 1:09:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**			PrepDate				Analyst: **QBM**
Bromide	ND	0.023	1.0		mg/L	2	5/9/2016 04:46 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**			PrepDate				Analyst: **QBM**
Chloride	640	3.9	100		mg/L	200	5/9/2016 06:51 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160509A** QC Batch: **R108466**			PrepDate				Analyst: **QBM**
Sulfate	270	3.3	25		mg/L	50	5/10/2016 12:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R108466_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	PBW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326700

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R108466_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	LCSW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326701

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.460	0.50	2.500	0	98.4	90	110				

Sample ID	N019606-001DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326705

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.598	1.0						0.6420	0	20	

Sample ID	N019607-003DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326709

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	5.476	1.0	5.000	0.8640	92.2	80	120				

Sample ID	N019607-003DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326710

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	5.366	1.0	5.000	0.8640	90.0	80	120	5.476	2.03	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R108466_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	PBW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326649

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R108466_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	LCSW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326650

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.503	0.50	2.500	0	100	90	110				

Sample ID	N019591-002CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326657

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	367.950	25	125.0	234.8	106	80	120				

Sample ID	N019591-002CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326658

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	363.100	25	125.0	234.8	103	80	120	368.0	1.33	20	

Sample ID	N019592-006CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326675

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	149.440	10	50.00	98.94	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N019610-009CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2329357

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	50.600	5.0						50.57	0.0593	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R108466_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	PBW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326773

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R108466_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	LCSW	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326774

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.960	0.50	5.000	0	99.2	90	110				

Sample ID	N019606-001DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326782

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	481.950	25	250.0	250.4	92.6	80	120				

Sample ID	N019606-001DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326783

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	480.900	25	250.0	250.4	92.2	80	120	482.0	0.218	20	

Sample ID	N019610-009CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108466
Client ID:	ZZZZZZ	Batch ID:	R108466	TestNo:	EPA 300.0			Analysis Date:	5/9/2016	SeqNo:	2326961

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	45.360	5.0						43.26	4.74	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 12:14:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160516G**	QC Batch: **R108544**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.17	0.022	0.050		mg/L	1	5/16/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 2:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160516G**	QC Batch: **R108544**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	18	0.44	1.0		mg/L	20	5/16/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 1:09:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160516G**	QC Batch: **R108544**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	11	0.44	1.0		mg/L	20	5/16/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-May-16*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160516G**	QC Batch: **R108544**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/16/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 3:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **WETCHEM_160517D**	QC Batch: **R108546**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/17/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 3:28:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160516G**	QC Batch: **R108544**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	11	0.44	1.0		mg/L	20	5/16/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160516G**	QC Batch: **R108544**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.064	0.022	0.050		mg/L	1	5/16/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160516G**	QC Batch: **R108544**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/16/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q216
Lab Order:	N019607	**Collection Date:**	5/3/2016 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019607-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160517D**	QC Batch: **R108546**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.6	0.11	0.25		mg/L	5	5/17/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R108544	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108544
Client ID:	PBW	Batch ID:	R108544	TestNo:	SM4500-NO3			Analysis Date:	5/16/2016	SeqNo:	2331304

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R108544	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108544
Client ID:	LCSW	Batch ID:	R108544	TestNo:	SM4500-NO3			Analysis Date:	5/16/2016	SeqNo:	2331305

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.497	0.050	0.5000	0	99.5	85	115				

Sample ID	N019607-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108544
Client ID:	ZZZZZZ	Batch ID:	R108544	TestNo:	SM4500-NO3			Analysis Date:	5/16/2016	SeqNo:	2331307

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.182	0.050						0.1715	5.94	20	

Sample ID	N019607-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108544
Client ID:	ZZZZZZ	Batch ID:	R108544	TestNo:	SM4500-NO3			Analysis Date:	5/16/2016	SeqNo:	2331309

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.686	0.050	0.5000	0.1715	103	75	125				

Sample ID	N019607-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108544
Client ID:	ZZZZZZ	Batch ID:	R108544	TestNo:	SM4500-NO3			Analysis Date:	5/16/2016	SeqNo:	2331310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.730	0.050	0.5000	0.1715	112	75	125	0.6855	6.23	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R108546**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **PBW**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R108546**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **LCSW**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.486	0.050	0.5000	0	97.2	85	115				

Sample ID **N019606-001CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **ZZZZZZ**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	10.594	1.0	0	0	0	0	0	11.05	4.21	20	

Sample ID **N019606-001CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **ZZZZZZ**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	21.644	1.0	10.00	11.05	106	75	125				

Sample ID **N019606-001CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **ZZZZZZ**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	20.608	1.0	10.00	11.05	95.6	75	125	21.64	4.90	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-003

Client Sample ID: MW-10-Q216
Collection Date: 5/3/2016 1:09:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **ICP2_160514B** QC Batch: **58387** PrepDate **5/11/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1100	38	100		ug/L	1	5/14/2016 04:10 PM
Calcium	100000	28	500		ug/L	1	5/14/2016 04:10 PM
Iron	21	1.8	20		ug/L	1	5/14/2016 04:10 PM
Magnesium	16000	4.4	100		ug/L	1	5/14/2016 04:10 PM
Sodium	470000	290	12000		ug/L	25	5/15/2016 09:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-58387**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/11/2016**	RunNo: **108486**
Client ID: **PBW**	Batch ID: **58387**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2016**	SeqNo: **2327890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	66.185	500									

Sample ID **LCS2-58387**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/11/2016**	RunNo: **108486**
Client ID: **LCSW**	Batch ID: **58387**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2016**	SeqNo: **2327891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20669.769	500	20000	0	103	85	115				

Sample ID **N019606-001B-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/11/2016**	RunNo: **108486**
Client ID: **ZZZZZZ**	Batch ID: **58387**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2016**	SeqNo: **2327967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	483366.224	12000	20000	481600	8.67	75	125				S

Sample ID **N019606-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/11/2016**	RunNo: **108486**
Client ID: **ZZZZZZ**	Batch ID: **58387**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2016**	SeqNo: **2327968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	486714.580	12000	20000	481600	25.4	75	125	483400	0.690	20	S

Sample ID **MB-58387**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/11/2016**	RunNo: **108477**
Client ID: **PBW**	Batch ID: **58387**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2328318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	4.514	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LCS1-58387	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108477
Client ID:	LCSW	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2328319

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4803.011	100	5000	0	96.1	85	115				
Calcium	8901.903	500	10000	0	89.0	85	115				
Iron	98.227	20	100.0	0	98.2	85	115				
Magnesium	9643.996	100	10000	0	96.4	85	115				

Sample ID	N019559-007C-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108477
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2328323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5272.942	100	5000	199.5	101	75	125				
Calcium	80578.936	500	10000	72050	85.3	75	125				
Iron	146.759	20	100.0	42.36	104	75	125				
Magnesium	30654.401	100	10000	23280	73.7	75	125				S

Sample ID	N019559-007C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/11/2016	RunNo:	108477
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2328324

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5292.634	100	5000	199.5	102	75	125	5273	0.373	20	
Calcium	85746.128	500	10000	72050	137	75	125	80580	6.21	20	S
Iron	146.309	20	100.0	42.36	104	75	125	146.8	0.307	20	
Magnesium	30727.403	100	10000	23280	74.4	75	125	30650	0.238	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-001

Client Sample ID: MW-38S-Q216
Collection Date: 5/3/2016 12:14:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58340**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	11	0.025	0.10		µg/L	1	5/14/2016 02:47 AM
Manganese	210	0.28	2.5		µg/L	5	5/14/2016 02:53 AM
Molybdenum	41	0.039	0.50		µg/L	1	5/14/2016 02:47 AM
Selenium	ND	0.028	0.50		µg/L	1	5/14/2016 02:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-002

Client Sample ID: TW-01-Q216
Collection Date: 5/3/2016 2:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58340**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Molybdenum	15	0.19	2.5		µg/L	5	5/14/2016 03:04 AM
Selenium	13	0.14	2.5		µg/L	5	5/14/2016 03:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-003

Client Sample ID: MW-10-Q216
Collection Date: 5/3/2016 1:09:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58340**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Molybdenum	25	0.039	0.50		µg/L	1	5/14/2016 03:26 AM
Selenium	4.8	0.028	0.50		µg/L	1	5/14/2016 03:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-005

Client Sample ID: MW-71-035-Q216
Collection Date: 5/3/2016 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58340**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	5.3	0.62	2.5		µg/L	25	5/14/2016 03:54 AM
Manganese	2700	1.4	12		µg/L	25	5/14/2016 03:54 AM
Molybdenum	35	0.97	12		µg/L	25	5/14/2016 03:54 AM
Selenium	ND	0.14	2.5		µg/L	5	5/14/2016 03:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-006

Client Sample ID: MW-914-Q216
Collection Date: 5/3/2016 3:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58340**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	5.7	0.12	0.50		µg/L	5	5/14/2016 04:05 AM
Manganese	3000	1.4	12		µg/L	25	5/14/2016 04:10 AM
Molybdenum	36	0.19	2.5		µg/L	5	5/14/2016 04:05 AM
Selenium	ND	0.14	2.5		µg/L	5	5/14/2016 04:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-007

Client Sample ID: MW-65-160-Q216
Collection Date: 5/3/2016 3:28:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58340**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	0.54	0.025	0.10		µg/L	1	5/14/2016 04:16 AM
Manganese	7.1	0.056	0.50		µg/L	1	5/14/2016 04:16 AM
Molybdenum	36	0.039	0.50		µg/L	1	5/14/2016 04:16 AM
Selenium	6.5	0.028	0.50		µg/L	1	5/14/2016 04:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-008

Client Sample ID: MW-62-190-Q216
Collection Date: 5/3/2016 3:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58340**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	4.7	0.12	0.50		µg/L	5	5/14/2016 04:44 AM
Manganese	1100	1.4	12		µg/L	25	5/14/2016 04:49 AM
Molybdenum	43	0.19	2.5		µg/L	5	5/14/2016 04:44 AM
Selenium	ND	0.14	2.5		µg/L	5	5/14/2016 04:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-009

Client Sample ID: MW-62-110-Q216
Collection Date: 5/3/2016 4:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58340**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	6.2	0.12	0.50		µg/L	5	5/14/2016 05:00 AM
Manganese	110	0.056	0.50		µg/L	1	5/14/2016 04:55 AM
Molybdenum	63	0.97	12		µg/L	25	5/14/2016 05:06 AM
Selenium	ND	0.14	2.5		µg/L	5	5/14/2016 05:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019607
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019607-010

Client Sample ID: MW-21-Q216
Collection Date: 5/3/2016 4:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160513C**	QC Batch: **58340**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Molybdenum	97	0.19	2.5		µg/L	5	5/14/2016 05:17 AM
Selenium	15	0.14	2.5		µg/L	5	5/14/2016 05:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-58340**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108470**
Client ID: **PBW**	Batch ID: **58340**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2327106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-58340**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108470**
Client ID: **LCSW**	Batch ID: **58340**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2327107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.387	0.10	10.00	0	93.9	85	115				
Manganese	93.255	0.50	100.0	0	93.3	85	115				
Molybdenum	9.383	0.50	10.00	0	93.8	85	115				
Selenium	9.063	0.50	10.00	0	90.6	85	115				

Sample ID **N019636-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108470**
Client ID: **ZZZZZZ**	Batch ID: **58340**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2327113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.246	0.10	10.00	0.8231	94.2	75	125				
Manganese	89.788	0.50	100.0	0	89.8	75	125				
Molybdenum	13.262	0.50	10.00	2.221	110	75	125				
Selenium	8.544	0.50	10.00	0.3135	82.3	75	125				

Sample ID **N019636-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108470**
Client ID: **ZZZZZZ**	Batch ID: **58340**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/14/2016**	SeqNo: **2327114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.262	0.10	10.00	0.8231	94.4	75	125	10.25	0.159	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019636-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/9/2016	RunNo:	108470
Client ID:	ZZZZZZ	Batch ID:	58340	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2327114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.158	0.50	100.0	0	88.2	75	125	89.79	1.83	20	
Molybdenum	13.151	0.50	10.00	2.221	109	75	125	13.26	0.836	20	
Selenium	8.442	0.50	10.00	0.3135	81.3	75	125	8.544	1.20	20	

Sample ID	N019638-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/9/2016	RunNo:	108470
Client ID:	ZZZZZZ	Batch ID:	58340	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2327116

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.187	0.10	10.00	0.5560	96.3	75	125				
Manganese	84.616	0.50	100.0	0	84.6	75	125				
Molybdenum	12.091	0.50	10.00	0.6411	114	75	125				
Selenium	9.040	0.50	10.00	0.6481	83.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Global ID: Specify State: CA
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	
Title: SR Tech	Phone: 916-786-3302 Fax:		
Signature: Date: 5/3/16	Sampled By: Nara Tep		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - GMP	Signature: Date: 5/3/16		
Project Number: RC000753.0801			

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present; 5. IR number; 6. Method of Cooling: ICE; Sample Temp: 5.0, 1.7, 1.4; Courier:; Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Calcium, Dissolved SW 6020, HN03 500 mL poly	IRON, Dissolved SW, 6020, HN03 500 mL poly	Sodium, Dissolved SW, 6020 HN03 500 mL poly	Boron, Dissolved SW, 6020, HN03 500 mL poly	Magnesium, Dissolved SW, 6020, HN03 500 mL poly	Chloride, E300 1000 mL poly	Alkalinity, Total as CaC03 1000 mL poly	TDS, SM2540C 1000 mL poly	Bromide, E300 1000 mL poly	Sulfate, E300 1000 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019607 -1	MW-38S-Q216	5/3/2016	1214		X		X	X	X	X	X	X												E	3	P	BNS	
2	-2	TW-01-Q216	5/3/2016	1455		X			X	X	X		X												E	3	P	BNS	
2	-3	MW-10-Q216	5/3/2016	1309		X			X	X	X		X	X	X	X	X	X	X	X	X	X	X		E	4	P	BNS	
3	-4	MW-718-Q216	5/3/2016	1320		X																			E	1	P	BNS	
4	-5	MW-71-035-Q216	5/3/2016	1525		X		X	X	X	X	X	X												E	3	P	BNS	
5	-6	MW-914-Q216	5/3/2016	1535		X		X	X	X	X	X	X												E	3	P	BNS	
6	-7	MW-65-160-Q216	5/3/2016	1528		X		X	X	X	X	X	X												E	3	P	BNS	
7	-8	MW-62-190-Q216	5/3/2016	1555		X		X	X	X	X	X	X												E	3	P	BNS	
8	-9	MW-62-110-Q216	5/3/2016	1610		X		X	X	X	X	X	X												E	3	P	BNS	
9	-10	MW-21-Q216	5/3/2016	1605			X		X	X	X		X												E	4	P	BNS	
10	-11	MW-719-Q216	5/3/2016	1630		X																			E	1	P	BNS	
11																													
12																													
13																													

Reliquished by (Signature and Printed Name): Nara Tep Date/Time: 5/3/16 1655
Reliquished by (Signature and Printed Name): Date/Time: 5/3/16 @ 1900
Reliquished by (Signature and Printed Name): Date/Time:

Reliquished by (Signature and Printed Name): Date/Time: 5/3/16 @ 1655
Reliquished by (Signature and Printed Name): Date/Time: 5/3/16 @ 1900
Reliquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/3/2016	Workorder:	N019607
Rep sample Temp (Deg C):	5.0/1.7/1.4	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: MBC 5/8/2016

Reviewed By: 5/11/16

ASSET Laboratories

WORK ORDER Summary

11-May-16

WorkOrder: N019607

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/3/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019607-001A	MW-38S-Q216	5/3/2016 12:14:00 PM	5/17/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-001B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019607-001C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019607-002A	TW-01-Q216	5/3/2016 2:55:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-002B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019607-002C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019607-003A	MW-10-Q216	5/3/2016 1:09:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-003B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019607-003C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019607-003D			5/17/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/17/2016			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/17/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

11-May-16

WorkOrder: N019607

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/3/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019607-003D	MW-10-Q216	5/3/2016 1:09:00 PM	5/17/2016	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/17/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N019607-004A	MW-718-Q216	5/3/2016 1:20:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-005A	MW-71-035-Q216	5/3/2016 3:25:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-005B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019607-005C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019607-006A	MW-914-Q216	5/3/2016 3:35:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-006B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019607-006C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019607-007A	MW-65-160-Q216	5/3/2016 3:28:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-007B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019607-007C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019607-008A	MW-62-190-Q216	5/3/2016 3:55:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-008B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

11-May-16

WorkOrder: N019607

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/3/2016

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019607-008B	MW-62-190-Q216	5/3/2016 3:55:00 PM	5/17/2016	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019607-008C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019607-009A	MW-62-110-Q216	5/3/2016 4:10:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-009B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019607-009C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019607-010A	MW-21-Q216	5/3/2016 4:05:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-010B			5/17/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019607-010C			5/17/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019607-011A	MW-719-Q216	5/3/2016 4:30:00 PM	5/17/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019607-012A	FOLDER		5/17/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/17/2016		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N019607**

NAME	TEST METHOD
Quennie Manimtim	SM 2540C, SM 2320B, EPA 300.0
Claire Ignacio	EPA 6010B, EPA 6020
Ryan Balilu	SM 4500-NO3F
Janette Soria	EPA 218.6

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58308 **Analyst:** QBM

ASSET #: N019607 **Date Analyzed:** 5/5/2016

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Silvia Ramit Date: 5/19/2016

2nd Level Reviewer: Nancy 5/19/2016 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N019607-003D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(63.9901–63.9041)*1000000}{50}$$

= 1720 mg/L

Reporting result in two significant figures,

TDS = 1700 mg/L

Julia Ramit 5/19/2016

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/5/2016 8:17:00 A**
Prep End Date: **5/6/2016 12:18:07 P**

Initials/ Date: Julia Ramit 5/19/2016

Prep Batch **58308** Prep Code: **160.1_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units: **mL / mL** **Temp (°C)180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58308	Water		100	☐	0	0	100	1.000		
MB-58308	Water		100	☐	0	0	100	1.000		
N019606-001D	Groundwater		40	☐	0	0	100	2.500		
N019606-002D	Groundwater		60	☐	0	0	100	1.667		
N019606-003D	Groundwater		60	☐	0	0	100	1.667		
N019607-003D	Groundwater		50	☐	0	0	100	2.000		
N019613-001A	Water		40	☐	0	0	100	2.500		
N019613-002A	Water		20	☐	0	0	100	5.000		
N019614-001A	Water		20	☐	0	0	100	5.000		
N019614-002A	Water		20	☐	0	0	100	5.000		
N019614-002A-DU	Water		20	☐	0	0	100	5.000		
N019637-001B	Groundwater		100	☐	0	0	100	1.000		
N019637-002B	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8392	Glass Fiber Filter, 47mm
8393	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160414A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/5/2016 8:17:00 A**
Prep End Date:

Initials/ Date: Julia Ramit 5/19/2016

Prep Batch **58308** Prep Code: **160.1_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units: mL / mL

Sample ID	Matrix	~~pH~~ Cond, m/cm	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58308 T3	Water		100	☐	0	0	100	1.000		
MB-58308 24	Water		100	☐	0	0	100	1.000		
N019606-001D BB	Groundwater	3050	~~100~~ 40	☐	0	0	100	1.000		
N019606-002D 2AD	Groundwater	2250	~~100~~ 60	☐	0	0	100	1.000		
N019606-003D 4A	Groundwater	2270	~~100~~ 60	☐	0	0	100	1.000		
N019607-003D 2R	Groundwater	2890	~~100~~ 50	☐	0	0	100	1.000		
N019613-001A —	Water	3720	~~100~~ 40	☐	0	0	100	1.000		
N019613-002A 42	Water	7780	~~100~~ 20	☐	0	0	100	1.000		
N019614-001A 61	Water	7060	~~100~~ 20	☐	0	0	100	1.000		
N019614-002A 8	Water	7450	~~100~~ 20	☐	0	0	100	1.000		
N019614-002A-DU 27	Water	7450 ~~943~~ 2	~~100~~ 20	☐	0	0	100	1.000		
N019637-001B AE	Groundwater	943	100 — /	☐	0	0	100	1.000		
N019637-002B AR	Groundwater	744	100	☐	0	0	100	1.000		

1412 - 1391
9992 - 9610

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

~~F8392~~
~~F8393~~
TWSF160414A

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/5/16 24	MB-5830S	100	55.4395 55.4391	55.4393 55.4393	
53	LS-5830S	100	53.8015 53.8017	53.8972 53.8973	
BB	N019606-001D	40	61.3141 61.3136	61.3845 61.3850	
2AA	2D	60	54.7167 54.7168	54.8000 54.7995	
4	3D	60	53.8120 53.8119	53.8932 53.8933	
	N019613-1A	40	63.7268 63.7272	63.8168 63.8147 63.8143	
42	2A	20	54.1499 54.1512 54.1508	54.2447 54.2451	
61	N0196M-001A	20	53.8362 53.8360	53.9203 53.9208	
8	2A	20	54.8127 54.8126	54.8989 54.89981 2	
27	2A DUP	20	55.6208 55.6210	55.7066 55.7070	

Julia Ramit 5/19/2016

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/5/16 RR	N0196O7-0030	50	63.4042 63.4041	63.9961 63.4901	
AE	N0196O7-001B	100	61.1555 61.1551	61.2124 61.2119	
AR	2B	100	53.6039 53.6035	53.6484 53.6485	

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
5/6/2016									
MB-58308	100	55.4391	55.4393	2	1	2			MBLK
LCS-58308	100	53.8017	53.8973	956	1	956			LCS
N019606-001D	40	61.3136	61.385	714	2.5	1785	3050	0.585	SAMP
N019606-002D	60	54.7168	54.7995	827	1.66666667	1378.33333	2250	0.613	SAMP
N019606-003D	60	53.8119	53.8933	814	1.66666667	1356.66667	2270	0.598	SAMP
N019607-003D	50	63.9041	63.9901	860	2	1720	2890	0.595	SAMP
N019613-001A	40	63.7272	63.8143	871	2.5	2177.5	3720	0.585	SAMP
N019613-002A	20	54.1508	54.2451	943	5	4715	7780	0.606	SAMP
N019614-001A	20	53.836	53.9208	848	5	4240	7060	0.601	SAMP
N019614-002A	20	54.8126	54.8991	865	5	4325	7450	0.581	SAMP
N019614-002A-DUP	20	55.621	55.707	860	5	4300	7450	0.577	DUP
N019637-001B	100	61.1551	61.2119	568	1	568	943	0.602	SAMP
N019637-002B	100	53.6035	53.6485	450	1	450	744	0.605	SAMP

Julia Ramit 5/19/2016

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108381
ASSET #: N019607

Instrument ID: IC-07
Analyst: JAS
Date Analyzed: 5/10/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X				
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X					
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)		X				
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?		X				
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

N019607-06A, 08A failed RT & MS recovery. N019607-10A failed MS criteria. For dilution.
N019607-09A (218.6) = 2.5; N019607-09B (6020) = ND. Sample ~~was reanalyzed with MS. Result confirmed~~ for confirmation.
Reported reanalysis of N019607-009 @ 1.2 ppb

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/18/2016

2nd Level Reviewer 5/19/2016 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108431
ASSET #: N019607

Instrument ID: IC-07
Analyst: JAS
Date Analyzed: 5/12/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)		X				
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	~~X~~	X				
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

CCB-5 > 0.02 ppb. However samples affected are ND and 10X CCB detection.
For N019607-006A, 007A, 008A and 010A only.
~~N019607-10A was reanalyzed with MS. Result confirmed initial analysis.~~

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/18/2016

2nd Level Reviewer 5/19/2016 Date: ~

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108509
ASSET #: N019607

Instrument ID: IC-06
Analyst: JAS
Date Analyzed: 5/16/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)		X				
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X				
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X					
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)		X				
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

For N019607-09A only.
Dilution was necessary due to matrix interference.
MB, CCB-2 & CCB4 > 0.02 ppb. However result is >10X blank detection.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/18/2016

2nd Level Reviewer _____ 5/19/2016 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

Cr^{+6}, μg/L = A * DF

where:

A = μg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N019607-002A** concentration in μg/L is calculated as follows:

Cr^{+6}, μg/L = 11.8192 * 200

= 2363.84

Reporting result in two significant figures,

Cr^{+6}, μg/L = 2400

ANALYSIS RUN LOG

INJECTION LOG: 160420B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	ICV	ICV	1	Hexavalent Chromium	04/20/16 3:44 PM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	04/20/16 5:23 PM	Not Reported
10	ICV	ICV	1	Hexavalent Chromium	04/20/16 5:34 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/20/16 5:43 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/20/16 5:53 PM	Reported
13	LCS-R107042	LCS	1	Hexavalent Chromium	04/20/16 6:03 PM	Reported
14	MB-R107042	MBLK	1	Hexavalent Chromium	04/20/16 6:17 PM	Reported
15	N019464-001A	SAMP	1	Hexavalent Chromium	04/20/16 6:28 PM	Reported
16	N019464-001ADUP	DUP	1	Hexavalent Chromium	04/20/16 6:37 PM	Reported
17	N019464-001AMS	MS	1	Hexavalent Chromium	04/20/16 6:47 PM	Reported
18	N019464-001AMSD	MSD	1	Hexavalent Chromium	04/20/16 6:56 PM	Reported
19	N019464-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:06 PM	Reported
20	N019433-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:15 PM	Reported
21	N019447-008A	SAMP	1	Hexavalent Chromium	04/20/16 7:25 PM	Not Reported
22	N019447-010A	SAMP	1	Hexavalent Chromium	04/20/16 7:34 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/20/16 7:44 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/20/16 7:53 PM	Reported
25	N019449-001A	SAMP	1	Hexavalent Chromium	04/20/16 8:04 PM	Reported
26	N019449-002A	SAMP	10	Hexavalent Chromium	04/20/16 8:15 PM	Not Reported
27	N019449-003A	SAMP	1	Hexavalent Chromium	04/20/16 8:24 PM	Reported
28	N019449-004A	SAMP	1	Hexavalent Chromium	04/20/16 8:34 PM	Reported
29	N019449-005A	SAMP	1	Hexavalent Chromium	04/20/16 8:43 PM	Reported
30	N019449-006A	SAMP	1	Hexavalent Chromium	04/20/16 8:53 PM	Reported
31	N019449-007A	SAMP	1	Hexavalent Chromium	04/20/16 9:02 PM	Reported
32	N019449-008A	SAMP	1	Hexavalent Chromium	04/20/16 9:12 PM	Reported
33	N019449-009A	SAMP	1	Hexavalent Chromium	04/20/16 9:21 PM	Reported
34	N019449-010A	SAMP	1	Hexavalent Chromium	04/20/16 9:31 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/20/16 9:40 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/20/16 9:49 PM	Reported
37	N019347-002A	SAMP	1	Hexavalent Chromium	04/20/16 9:59 PM	Not Reported
38	N019347-002AMS	MS	1	Hexavalent Chromium	04/20/16 10:08 PM	Not Reported
39	MB-R107053	MBLK	1	Hexavalent Chromium	04/20/16 10:18 PM	Reported
40	LCS-R107053	LCS	1	Hexavalent Chromium	04/20/16 10:27 PM	Reported
41	N019448-001A	SAMP	10	Hexavalent Chromium	04/20/16 10:37 PM	Reported
42	N019448-001ADUP	DUP	10	Hexavalent Chromium	04/20/16 10:46 PM	Reported

INJECTION LOG: 160420B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019448-001AMS	MS	10	Hexavalent Chromium	04/20/16 10:56 PM	Reported
44	N019448-001AMSD	MSD	10	Hexavalent Chromium	04/20/16 11:05 PM	Reported
45	N019448-002A	SAMP	1	Hexavalent Chromium	04/20/16 11:15 PM	Not Reported
46	N019448-003A	SAMP	1	Hexavalent Chromium	04/20/16 11:24 PM	Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/20/16 11:34 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/20/16 11:43 PM	Reported
49	N019448-004A	SAMP	1	Hexavalent Chromium	04/20/16 11:53 PM	Reported
50	N019448-005A	SAMP	1	Hexavalent Chromium	04/21/16 12:02 AM	Reported
51	N019448-006A	SAMP	1	Hexavalent Chromium	04/21/16 12:11 AM	Reported
52	N019448-007A	SAMP	1	Hexavalent Chromium	04/21/16 12:21 AM	Reported
53	N019458-001A	SAMP	1	Hexavalent Chromium	04/21/16 12:30 AM	Reported
54	N019458-002A	SAMP	1	Hexavalent Chromium	04/21/16 12:40 AM	Reported
55	N019458-003A	SAMP	1	Hexavalent Chromium	04/21/16 12:49 AM	Reported
56	N019458-004A	SAMP	1	Hexavalent Chromium	04/21/16 12:59 AM	Reported
57	N019458-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:08 AM	Reported
58	N019458-006A	SAMP	1	Hexavalent Chromium	04/21/16 1:18 AM	Not Reported
59	CCV-4	CCV	1	Hexavalent Chromium	04/21/16 1:27 AM	Reported
60	CCB-4	CCB	1	Hexavalent Chromium	04/21/16 1:37 AM	Reported
61	N019458-007A	SAMP	1	Hexavalent Chromium	04/21/16 1:46 AM	Reported
62	N019368-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:55 AM	Not Reported
63	N019368-005AMS	MS	1	Hexavalent Chromium	04/21/16 2:05 AM	Not Reported
64	N019368-006A	SAMP	1	Hexavalent Chromium	04/21/16 2:14 AM	Not Reported
65	N019368-006AMS	MS	1	Hexavalent Chromium	04/21/16 2:24 AM	Not Reported
66	N019368-008A	SAMP	1	Hexavalent Chromium	04/21/16 2:33 AM	Not Reported
67	N019368-008AMS	MS	1	Hexavalent Chromium	04/21/16 2:43 AM	Not Reported
68	N019368-013A	SAMP	1	Hexavalent Chromium	04/21/16 2:52 AM	Not Reported
69	N019368-013AMS	MS	1	Hexavalent Chromium	04/21/16 3:02 AM	Not Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	04/21/16 3:11 AM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	04/21/16 3:21 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160420B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**21/Apr/16 12:22:23**
No. of Injections:	**74**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	ICV,ICV,1,	8	1000	Unknown		04/20/2016 15:44	Interrupted	CCV @5ppb, IWST-160401A
9	BLANK	9	1000	Unknown		04/20/2016 17:23	Finished	CCV @5ppb, IWST-160401A
10	ICV,ICV,1,	10	1000	Unknown		04/20/2016 17:34	Finished	ICV @5ppb, IWST-160401B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/20/2016 17:43	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/20/2016 17:53	Finished	ICB
13	LCS-H2O,LCS,1	13	1000	Unknown		04/20/2016 18:03	Finished	LCS, IWST-160401B
14	MB-H2O,MBLK,1	14	1000	Unknown		04/20/2016 18:17	Finished	MB R160416A
15	N019464-001A,SAMP	15	1000	Unknown		04/20/2016 18:28	Finished	SAMP, 10mL
16	N019464-001ADUP,D	16	1000	Unknown		04/20/2016 18:37	Finished	DUP, 10mL
17	N019464-001AMS,MS	17	1000	Unknown		04/20/2016 18:47	Finished	MS (5ppb) , IWST-160401B, 10
18	N019464-001AMSD,M	18	1000	Unknown		04/20/2016 18:56	Finished	MSD (5ppb) , IWST-160401B,
19	N019464-002A,SAMP	19	1000	Unknown		04/20/2016 19:06	Finished	SAMP, 10mL
20	N019433-002A,SAMP	20	1000	Unknown		04/20/2016 19:15	Finished	SAMP, 10mL
21	N019447-008A,SAMP	21	1000	Unknown		04/20/2016 19:25	Finished	SAMP, 10mL
22	N019447-010A,SAMP	22	1000	Unknown		04/20/2016 19:34	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		04/20/2016 19:44	Finished	CCV @10ppb, IWST-160401A
24	CCB-1,CCB,1,	24	1000	Unknown		04/20/2016 19:53	Finished	CCB R160407B
25	N019449-001A,SAMP	1	1000	Unknown		04/20/2016 20:04	Finished	SAMP, 10mL
26	N019449-002A,SAMP	2	1000	Unknown		04/20/2016 20:15	Finished	SAMP, 1>10mL
27	N019449-003A,SAMP	3	1000	Unknown		04/20/2016 20:24	Finished	SAMP, 10mL
28	N019449-004A,SAMP	4	1000	Unknown		04/20/2016 20:34	Finished	SAMP, 10mL
29	N019449-005A,SAMP	5	1000	Unknown		04/20/2016 20:43	Finished	SAMP, 10mL
30	N019449-006A,SAMP	6	1000	Unknown		04/20/2016 20:53	Finished	SAMP, 10mL
31	N019449-007A,SAMP	7	1000	Unknown		04/20/2016 21:02	Finished	SAMP, 10mL
32	N019449-008A,SAMP	8	1000	Unknown		04/20/2016 21:12	Finished	SAMP, 10mL
33	N019449-009A,SAMP	9	1000	Unknown		04/20/2016 21:21	Finished	SAMP, 10mL
34	N019449-010A,SAMP	10	1000	Unknown		04/20/2016 21:31	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	11	1000	Unknown		04/20/2016 21:40	Finished	CCV @5pb, IWST-160401A
36	CCB-2,CCB,1,	12	1000	Unknown		04/20/2016 21:49	Finished	CCB
37	N019347-002A,SAMP	13	1000	Unknown		04/20/2016 21:59	Finished	SAMP, 10mL
38	N019347-002AMS,MS	14	1000	Unknown		04/20/2016 22:08	Finished	MS (5ppb) , IWST-160401B, 10
39	MB-H2O,MBLK,1	15	1000	Unknown		04/20/2016 22:18	Finished	MB R160416A
40	LCS-H2O,LCS,1	16	1000	Unknown		04/20/2016 22:27	Finished	LCS, IWST-160401B
41	N019448-001A,SAMP	17	1000	Unknown		04/20/2016 22:37	Finished	SAMP, 1>10mL
42	N019448-001ADUP,D	18	1000	Unknown		04/20/2016 22:46	Finished	DUP, 1>10mL
43	N019448-001AMS,MS	19	1000	Unknown		04/20/2016 22:56	Finished	MS (5ppb) , IWST-160401B, 1>
44	N019448-001AMSD,M	20	1000	Unknown		04/20/2016 23:05	Finished	MSD (5ppb) , IWST-160401B,
45	N019448-002A,SAMP	21	1000	Unknown		04/20/2016 23:15	Finished	SAMP, 10mL
46	N019448-003A,SAMP	22	1000	Unknown		04/20/2016 23:24	Finished	SAMP, 10mL
47	CCV-3,CCV1,1,	23	1000	Unknown		04/20/2016 23:34	Finished	CCV @10ppb, IWST-160401A
48	CCB-3,CCB,1,	24	1000	Unknown		04/20/2016 23:43	Finished	CCB
49	N019448-004A,SAMP	25	1000	Unknown		04/20/2016 23:53	Finished	SAMP, 10mL
50	N019448-005A,SAMP	26	1000	Unknown		04/21/2016 00:02	Finished	SAMP, 10mL
51	N019448-006A,SAMP	27	1000	Unknown		04/21/2016 00:11	Finished	SAMP, 10mL
52	N019448-007A,SAMP	28	1000	Unknown		04/21/2016 00:21	Finished	SAMP, 10mL
53	N019458-001A,SAMP	29	1000	Unknown		04/21/2016 00:30	Finished	SAMP, 10mL
54	N019458-002A,SAMP	30	1000	Unknown		04/21/2016 00:40	Finished	SAMP, 10mL
55	N019458-003A,SAMP	31	1000	Unknown		04/21/2016 00:49	Finished	SAMP, 10mL
56	N019458-004A,SAMP	32	1000	Unknown		04/21/2016 00:59	Finished	SAMP, 10mL
57	N019458-005A,SAMP	33	1000	Unknown		04/21/2016 01:08	Finished	SAMP, 10mL
58	N019458-006A,SAMP	34	1000	Unknown		04/21/2016 01:18	Finished	SAMP, 10mL
59	CCV-4,CCV,1,	35	1000	Unknown		04/21/2016 01:27	Finished	CCV @5pb, IWST-160401A
60	CCB-4,CCB,1,	36	1000	Unknown		04/21/2016 01:37	Finished	CCB

61	N019458-007A,SAMP	37	1000	Unknown		04/21/2016 01:46	Finished	SAMP, 10mL
62	N019368-005A,SAMP	38	1000	Unknown		04/21/2016 01:55	Finished	SAMP, 10mL
63	N019368-005AMS,MS	39	1000	Unknown		04/21/2016 02:05	Finished	MS (5ppb) , IWST-160401B, 10
64	N019368-006A,SAMP	40	1000	Unknown		04/21/2016 02:14	Finished	SAMP, 10mL
65	N019368-006AMS,MS	41	1000	Unknown		04/21/2016 02:24	Finished	MS (5ppb) , IWST-160401B, 10
66	N019368-008A,SAMP	42	1000	Unknown		04/21/2016 02:33	Finished	SAMP, 10mL
67	N019368-008AMS,MS	43	1000	Unknown		04/21/2016 02:43	Finished	MS (5ppb) , IWST-160401B, 10
68	N019368-013A,SAMP	44	1000	Unknown		04/21/2016 02:52	Finished	SAMP, 10mL
69	N019368-013AMS,MS	45	1000	Unknown		04/21/2016 03:02	Finished	MS (5ppb) , IWST-160401B, 10
70	CCV-5,CCV1,1,	46	1000	Unknown		04/21/2016 03:11	Finished	CCV @10ppb, IWST-160401A
71	CCB-5,CCB,1,	47	1000	Unknown		04/21/2016 03:21	Finished	CCB
72	SHUTDOWN	48	1000	Unknown		04/21/2016 03:30	Finished	
73	Eluent: R160418B, R	49	1000	Unknown		n.a.	Finished	Eluent
74	PCR: R160420B	50	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160510A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	BLANK	BLANK	1	Hexavalent Chromium	05/10/16 10:40 AM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	05/10/16 10:51 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	05/10/16 11:01 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/10/16 11:10 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	05/10/16 11:20 AM	Reported
13	MB-R108366	MBLK	1	Hexavalent Chromium	05/10/16 11:29 AM	Reported
14	LCS-R108366	LCS	1	Hexavalent Chromium	05/10/16 11:39 AM	Reported
15	N019716-001A	SAMP	5	Hexavalent Chromium	05/10/16 11:51 AM	Reported
16	N019716-002A	SAMP	1	Hexavalent Chromium	05/10/16 12:02 PM	Reported
17	N019716-003A	SAMP	5	Hexavalent Chromium	05/10/16 12:11 PM	Reported
18	N019716-001AREP	DUP	5	Hexavalent Chromium	05/10/16 12:22 PM	Reported
19	N019716-002AREP	DUP	1	Hexavalent Chromium	05/10/16 12:33 PM	Reported
20	N019716-003AREP	DUP	5	Hexavalent Chromium	05/10/16 12:42 PM	Reported
21	N019611-001A	SAMP	50	Hexavalent Chromium	05/10/16 12:51 PM	Not Reported
22	N019611-001ADUP	DUP	50	Hexavalent Chromium	05/10/16 1:01 PM	Not Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	05/10/16 1:10 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	05/10/16 1:20 PM	Reported
25	N019611-001A	SAMP	20	Hexavalent Chromium	05/10/16 1:29 PM	Reported
26	N019611-001ADUP	DUP	20	Hexavalent Chromium	05/10/16 1:39 PM	Reported
27	N019611-001AMS	MS	20	Hexavalent Chromium	05/10/16 1:48 PM	Reported
28	N019611-001AMSD	MSD	20	Hexavalent Chromium	05/10/16 1:58 PM	Reported
29	N019611-002A	SAMP	50	Hexavalent Chromium	05/10/16 2:07 PM	Reported
30	N019611-003A	SAMP	10	Hexavalent Chromium	05/10/16 2:17 PM	Not Reported
31	N019611-004A	SAMP	1	Hexavalent Chromium	05/10/16 2:26 PM	Reported
32	N019611-005A	SAMP	50	Hexavalent Chromium	05/10/16 2:36 PM	Reported
33	N019611-006A	SAMP	1	Hexavalent Chromium	05/10/16 2:45 PM	Reported
34	N019611-007A	SAMP	50	Hexavalent Chromium	05/10/16 2:54 PM	Reported
35	CCV-3	CCV	1	Hexavalent Chromium	05/10/16 3:04 PM	Reported
36	CCB-3	CCB	1	Hexavalent Chromium	05/10/16 3:13 PM	Reported
37	N019611-008A	SAMP	20	Hexavalent Chromium	05/10/16 3:23 PM	Reported
38	N019611-009A	SAMP	1	Hexavalent Chromium	05/10/16 3:32 PM	Reported
39	N019611-010A	SAMP	10	Hexavalent Chromium	05/10/16 3:42 PM	Reported
40	N019611-011A	SAMP	1	Hexavalent Chromium	05/10/16 3:51 PM	Not Reported
41	N019611-012A	SAMP	1	Hexavalent Chromium	05/10/16 4:01 PM	Reported
42	N019611-013A	SAMP	1	Hexavalent Chromium	05/10/16 4:10 PM	Not Reported
43	N019611-014A	SAMP	1	Hexavalent Chromium	05/10/16 4:20 PM	Reported
44	N019611-015A	SAMP	50	Hexavalent Chromium	05/10/16 4:29 PM	Not Reported
45	N019699-001A	SAMP	1	Hexavalent Chromium	05/10/16 4:39 PM	Reported
46	N019611-003A	SAMP	25	Hexavalent Chromium	05/10/16 4:48 PM	Reported
47	CCV-4	CCV1	1	Hexavalent Chromium	05/10/16 4:57 PM	Reported
48	CCB-4	CCB	1	Hexavalent Chromium	05/10/16 5:07 PM	Reported
49	N019611-011A	SAMP	10	Hexavalent Chromium	05/10/16 5:17 PM	Reported

INJECTION LOG: 160510A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019611-013A	SAMP	5	Hexavalent Chromium	05/10/16 5:28 PM	Reported
51	N019611-015A	SAMP	1	Hexavalent Chromium	05/10/16 5:38 PM	Reported
52	MB-R108381	MBLK	1	Hexavalent Chromium	05/10/16 5:47 PM	Reported
53	LCS-R108381	LCS	1	Hexavalent Chromium	05/10/16 5:57 PM	Reported
54	N019607-001A	SAMP	1	Hexavalent Chromium	05/10/16 6:06 PM	Reported
55	N019607-001ADUP	DUP	1	Hexavalent Chromium	05/10/16 6:16 PM	Reported
56	N019607-001AMS	MS	1	Hexavalent Chromium	05/10/16 6:25 PM	Reported
57	N019607-001AMSD	MSD	1	Hexavalent Chromium	05/10/16 6:35 PM	Reported
58	N019606-006A	SAMP	5	Hexavalent Chromium	05/10/16 6:44 PM	Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/10/16 6:58 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/10/16 7:10 PM	Reported
61	N019606-006AMS	MS	5	Hexavalent Chromium	05/10/16 7:19 PM	Reported
62	N019606-013A	SAMP	20	Hexavalent Chromium	05/10/16 7:29 PM	Reported
63	N019606-013AMS	MS	20	Hexavalent Chromium	05/10/16 7:38 PM	Reported
64	N019607-002A	SAMP	200	Hexavalent Chromium	05/10/16 7:47 PM	Reported
65	N019607-002AMS	MS	200	Hexavalent Chromium	05/10/16 7:57 PM	Reported
66	N019607-003A	SAMP	20	Hexavalent Chromium	05/10/16 8:06 PM	Reported
67	N019607-003AMS	MS	20	Hexavalent Chromium	05/10/16 8:16 PM	Reported
68	N019607-004A	SAMP	1	Hexavalent Chromium	05/10/16 8:25 PM	Reported
69	N019607-004AMS	MS	1	Hexavalent Chromium	05/10/16 8:35 PM	Reported
70	N019607-005A	SAMP	1	Hexavalent Chromium	05/10/16 8:44 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/10/16 8:54 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/10/16 9:03 PM	Reported
73	N019607-005AMS	MS	1	Hexavalent Chromium	05/10/16 9:13 PM	Not Reported
74	N019607-006A	SAMP	1	Hexavalent Chromium	05/10/16 9:22 PM	Not Reported
75	N019607-006AMS	MS	1	Hexavalent Chromium	05/10/16 9:32 PM	Not Reported
76	N019607-007A	SAMP	10	Hexavalent Chromium	05/10/16 9:41 PM	Not Reported
77	N019607-007AMS	MS	10	Hexavalent Chromium	05/10/16 9:50 PM	Not Reported
78	N019607-008A	SAMP	1	Hexavalent Chromium	05/10/16 10:00 PM	Not Reported
79	N019607-008AMS	MS	1	Hexavalent Chromium	05/10/16 10:09 PM	Not Reported
80	N019607-009A	SAMP	1	Hexavalent Chromium	05/10/16 10:19 PM	Not Reported
81	N019607-009AMS	MS	1	Hexavalent Chromium	05/10/16 10:28 PM	Not Reported
82	N019607-010A	SAMP	1	Hexavalent Chromium	05/10/16 10:38 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/10/16 10:47 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/10/16 10:57 PM	Reported
85	N019607-010AMS	MS	1	Hexavalent Chromium	05/10/16 11:06 PM	Not Reported
86	N019607-011A	SAMP	1	Hexavalent Chromium	05/10/16 11:16 PM	Reported
87	N019607-011AMS	MS	1	Hexavalent Chromium	05/10/16 11:25 PM	Reported
88	N019607-005A	SAMP	5	Hexavalent Chromium	05/10/16 11:34 PM	Reported
89	N019607-005AMS	MS	5	Hexavalent Chromium	05/10/16 11:44 PM	Reported
90	N019607-009A	SAMP	5	Hexavalent Chromium	05/10/16 11:53 PM	Not Reported
91	N019607-009AMS	MS	5	Hexavalent Chromium	05/11/16 12:03 AM	Not Reported
92	N019612-001A	SAMP	10	Hexavalent Chromium	05/11/16 12:12 AM	Reported
93	N019612-002A	SAMP	10	Hexavalent Chromium	05/11/16 12:22 AM	Reported
94	N019612-003A	SAMP	1	Hexavalent Chromium	05/11/16 12:31 AM	Reported
95	CCV-8	CCV1	1	Hexavalent Chromium	05/11/16 12:41 AM	Reported
96	CCB-8	CCB	1	Hexavalent Chromium	05/11/16 12:50 AM	Reported

jas 5/18/2016

Injection Log Summary

Sequence Details

Name:	**IC-07_160510A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/May/16 07:11:02**
No. of Injections:	**99**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	BLANK	1	1000	Unknown		05/10/2016 10:40	Finished	
9	BLANK	2	1000	Unknown		05/10/2016 10:51	Finished	
10	CCV-1,CCV,1,	3	1000	Unknown		05/10/2016 11:01	Finished	CCV @5ppb, IWST-160401A
11	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/10/2016 11:10	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	5	1000	Unknown		05/10/2016 11:20	Finished	CCB R160502C
13	MB-H2O,MBLK,1	6	1000	Unknown		05/10/2016 11:29	Finished	MB R160407B
14	LCS-H2O,LCS,1	7	1000	Unknown		05/10/2016 11:39	Finished	LCS, IWST-160401B
15	N019716-001A,SAMP	8	1000	Unknown		05/10/2016 11:51	Finished	SAMP, 2.0>10mL
16	N019716-002A,SAMP	9	1000	Unknown		05/10/2016 12:02	Finished	SAMP, 10mL
17	N019716-003A,SAMP	10	1000	Unknown		05/10/2016 12:11	Finished	SAMP, 2.0>10mL
18	N019716-001AREP,D	11	1000	Unknown		05/10/2016 12:22	Finished	DUP, 2.0>10mL
19	N019716-002AREP,D	12	1000	Unknown		05/10/2016 12:33	Finished	DUP, 10mL
20	N019716-003AREP,D	13	1000	Unknown		05/10/2016 12:42	Finished	DUP, 2.0>10mL
21	N019611-001A,SAMP	14	1000	Unknown		05/10/2016 12:51	Finished	SAMP, 0.2>10mL
22	N019611-001ADUP,D	15	1000	Unknown		05/10/2016 13:01	Finished	DUP, 0.2>10mL
23	CCV-2,CCV1,1,	16	1000	Unknown		05/10/2016 13:10	Finished	CCV @10ppb, IWST-160401A
24	CCB-2,CCB,1,	17	1000	Unknown		05/10/2016 13:20	Finished	CCB R160426G
25	N019611-001A,SAMP	18	1000	Unknown		05/10/2016 13:29	Finished	SAMP, 0.5>10mL
26	N019611-001ADUP,D	19	1000	Unknown		05/10/2016 13:39	Finished	DUP, 0.5>10mL
27	N019611-001AMS,MS	20	1000	Unknown		05/10/2016 13:48	Finished	MS (5ppb) , IWST-160401B, 0.
28	N019611-001AMSD,M	21	1000	Unknown		05/10/2016 13:58	Finished	MSD (5ppb) , IWST-160401B, (
29	N019611-002A,SAMP	22	1000	Unknown		05/10/2016 14:07	Finished	SAMP, 0.2>10mL
30	N019611-003A,SAMP	23	1000	Unknown		05/10/2016 14:17	Finished	SAMP, 1.0>10mL
31	N019611-004A,SAMP	24	1000	Unknown		05/10/2016 14:26	Finished	SAMP, 10mL
32	N019611-005A,SAMP	25	1000	Unknown		05/10/2016 14:36	Finished	SAMP, 0.2>10mL
33	N019611-006A,SAMP	26	1000	Unknown		05/10/2016 14:45	Finished	SAMP, 10mL
34	N019611-007A,SAMP	27	1000	Unknown		05/10/2016 14:54	Finished	SAMP, 0.2>10mL
35	CCV-3,CCV,1,	28	1000	Unknown		05/10/2016 15:04	Finished	CCV @5pb, IWST-160401A
36	CCB-3,CCB,1,	29	1000	Unknown		05/10/2016 15:13	Finished	CCB
37	N019611-008A,SAMP	30	1000	Unknown		05/10/2016 15:23	Finished	SAMP, 0.5>10mL
38	N019611-009A,SAMP	31	1000	Unknown		05/10/2016 15:32	Finished	SAMP, 10mL
39	N019611-010A,SAMP	32	1000	Unknown		05/10/2016 15:42	Finished	SAMP, 1.0>10mL
40	N019611-011A,SAMP	33	1000	Unknown		05/10/2016 15:51	Finished	SAMP, 10mL
41	N019611-012A,SAMP	34	1000	Unknown		05/10/2016 16:01	Finished	SAMP, 10mL
42	N019611-013A,SAMP	35	1000	Unknown		05/10/2016 16:10	Finished	SAMP, 10mL
43	N019611-014A,SAMP	36	1000	Unknown		05/10/2016 16:20	Finished	SAMP, 10mL
44	N019611-015A,SAMP	37	1000	Unknown		05/10/2016 16:29	Finished	SAMP, 0.2>10mL
45	N019699-001A,SAMP	38	1000	Unknown		05/10/2016 16:39	Finished	SAMP, 10mL
46	N019611-003A,SAMP	39	1000	Unknown		05/10/2016 16:48	Finished	SAMP, 0.4>10mL
47	CCV-4,CCV1,1,	40	1000	Unknown		05/10/2016 16:57	Finished	CCV @10ppb, IWST-160401A
48	CCB-4,CCB,1,	41	1000	Unknown		05/10/2016 17:07	Finished	CCB
49	N019611-011A,SAMP	1	1000	Unknown		05/10/2016 17:17	Finished	SAMP, 1.0>10mL
50	N019611-013A,SAMP	2	1000	Unknown		05/10/2016 17:28	Finished	SAMP, 2.0>10mL
51	N019611-015A,SAMP	3	1000	Unknown		05/10/2016 17:38	Finished	SAMP, 10mL
52	MB-H2O,MBLK,1	4	1000	Unknown		05/10/2016 17:47	Finished	MB R160426G
53	LCS-H2O,LCS,1	5	1000	Unknown		05/10/2016 17:57	Finished	LCS, IWST-160401B
54	N019607-001A,SAMP	6	1000	Unknown		05/10/2016 18:06	Finished	SAMP, 10mL
55	N019607-001ADUP,D	7	1000	Unknown		05/10/2016 18:16	Finished	DUP, 10mL
56	N019607-001AMS,MS	8	1000	Unknown		05/10/2016 18:25	Finished	MS (1ppb), IWST-160401B, 10
57	N019607-001AMSD,M	9	1000	Unknown		05/10/2016 18:35	Finished	MSD (1ppb), IWST-160401B, 1
58	N019606-006A,SAMP	10	1000	Unknown		05/10/2016 18:44	Finished	SAMP, 2.0>10mL
59	CCV-5,CCV,1,	11	1000	Unknown		05/10/2016 18:58	Finished	CCV @5pb, IWST-160401A
60	CCB-5,CCB,1,	12	1000	Unknown		05/10/2016 19:10	Finished	CCB

61	N019606-006AMS,MS	13	1000	Unknown		05/10/2016 19:19	Finished	MS (5ppb), IWST-160401B, 2.0
62	N019606-013A,SAMP	14	1000	Unknown		05/10/2016 19:29	Finished	SAMP, 0.5>10mL
63	N019606-013AMS,MS	15	1000	Unknown		05/10/2016 19:38	Finished	MS (5ppb), IWST-160401B, 0.5
64	N019607-002A,SAMP	16	1000	Unknown		05/10/2016 19:47	Finished	SAMP, 50uL>10mL
65	N019607-002AMS,MS	17	1000	Unknown		05/10/2016 19:57	Finished	MS (5ppb), IWST-160401B, 50
66	N019607-003A,SAMP	18	1000	Unknown		05/10/2016 20:06	Finished	SAMP, 0.5>10mL
67	N019607-003AMS,MS	19	1000	Unknown		05/10/2016 20:16	Finished	MS (5ppb), IWST-160401B, 0.5
68	N019607-004A,SAMP	20	1000	Unknown		05/10/2016 20:25	Finished	SAMP, 10mL
69	N019607-004AMS,MS	21	1000	Unknown		05/10/2016 20:35	Finished	MS (1ppb), IWST-160401B, 10
70	N019607-005A,SAMP	22	1000	Unknown		05/10/2016 20:44	Finished	SAMP, 10mL
71	CCV-6,CCV1,1,	23	1000	Unknown		05/10/2016 20:54	Finished	CCV @10ppb, IWST-160401A
72	CCB-6,CCB,1,	24	1000	Unknown		05/10/2016 21:03	Finished	CCB
73	N019607-005AMS,MS	25	1000	Unknown		05/10/2016 21:13	Finished	MS (1ppb), IWST-160401B, 10
74	N019607-006A,SAMP	26	1000	Unknown		05/10/2016 21:22	Finished	SAMP, 10mL
75	N019607-006AMS,MS	27	1000	Unknown		05/10/2016 21:32	Finished	MS (1ppb), IWST-160401B, 10
76	N019607-007A,SAMP	28	1000	Unknown		05/10/2016 21:41	Finished	SAMP, 1.0>10mL
77	N019607-007AMS,MS	29	1000	Unknown		05/10/2016 21:50	Finished	MS (5ppb), IWST-160401B, 1.0
78	N019607-008A,SAMP	30	1000	Unknown		05/10/2016 22:00	Finished	SAMP, 10mL
79	N019607-008AMS,MS	31	1000	Unknown		05/10/2016 22:09	Finished	MS (1ppb), IWST-160401B, 10
80	N019607-009A,SAMP	32	1000	Unknown		05/10/2016 22:19	Finished	SAMP, 10mL
81	N019607-009AMS,MS	33	1000	Unknown		05/10/2016 22:28	Finished	MS (1ppb), IWST-160401B, 10
82	N019607-010A,SAMP	34	1000	Unknown		05/10/2016 22:38	Finished	SAMP, 10mL
83	CCV-7,CCV,1,	35	1000	Unknown		05/10/2016 22:47	Finished	CCV @5pb, IWST-160401A
84	CCB-7,CCB,1,	36	1000	Unknown		05/10/2016 22:57	Finished	CCB
85	N019607-010AMS,MS	37	1000	Unknown		05/10/2016 23:06	Finished	MS (1ppb), IWST-160401B, 10
86	N019607-011A,SAMP	38	1000	Unknown		05/10/2016 23:16	Finished	SAMP, 10mL
87	N019607-011AMS,MS	39	1000	Unknown		05/10/2016 23:25	Finished	MS (1ppb), IWST-160401B, 10
88	N019607-005A,SAMP	40	1000	Unknown		05/10/2016 23:34	Finished	SAMP, 2.0>10mL
89	N019607-005AMS,MS	41	1000	Unknown		05/10/2016 23:44	Finished	MS (1ppb), IWST-160401B, 2.0
90	N019607-009A,SAMP	42	1000	Unknown		05/10/2016 23:53	Finished	SAMP, 2.0>10mL
91	N019607-009AMS,MS	43	1000	Unknown		05/11/2016 00:03	Finished	MS (1ppb), IWST-160401B, 2.0
92	N019612-001A,SAMP	44	1000	Unknown		05/11/2016 00:12	Finished	SAMP, 1.0>10mL
93	N019612-002A,SAMP	45	1000	Unknown		05/11/2016 00:22	Finished	SAMP, 1.0>10mL
94	N019612-003A,SAMP	46	1000	Unknown		05/11/2016 00:31	Finished	SAMP, 10mL
95	CCV-8,CCV1,1,	47	1000	Unknown		05/11/2016 00:41	Finished	CCV @10ppb, IWST-160401A
96	CCB-8,CCB,1,	48	1000	Unknown		05/11/2016 00:50	Finished	CCB
97	SHUTDOWN	49	1000	Unknown		05/11/2016 01:00	Finished	
98	Eluent: R160509A, R	50	1000	Unknown		n.a.	Finished	Eluent
99	PCR: R160509B	51	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	BLANK	BLANK	1	Hexavalent Chromium	05/12/16 11:02 AM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	05/12/16 11:13 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	05/12/16 11:23 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/12/16 11:32 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	05/12/16 11:42 AM	Reported
13	MB-R108431	MBLK	1	Hexavalent Chromium	05/12/16 11:51 AM	Reported
14	LCS-R108431	LCS	1	Hexavalent Chromium	05/12/16 12:01 PM	Reported
15	N019719-001A	SAMP	1	Hexavalent Chromium	05/12/16 12:10 PM	Reported
16	N019719-001ADUP	DUP	1	Hexavalent Chromium	05/12/16 12:19 PM	Reported
17	N019719-001AMS	MS	1	Hexavalent Chromium	05/12/16 12:29 PM	Reported
18	N019719-001AMSD	MSD	1	Hexavalent Chromium	05/12/16 12:38 PM	Reported
19	N019719-002A	SAMP	1	Hexavalent Chromium	05/12/16 12:48 PM	Reported
20	N019738-001A	SAMP	1	Hexavalent Chromium	05/12/16 12:57 PM	Reported
21	N019738-002A	SAMP	1	Hexavalent Chromium	05/12/16 1:07 PM	Reported
22	N019738-003A	SAMP	1	Hexavalent Chromium	05/12/16 1:16 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	05/12/16 1:26 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	05/12/16 1:35 PM	Reported
25	N019607-006A	SAMP	5	Hexavalent Chromium	05/12/16 1:45 PM	Reported
26	N019607-006AMS	MS	5	Hexavalent Chromium	05/12/16 1:54 PM	Reported
27	N019607-007A	SAMP	20	Hexavalent Chromium	05/12/16 2:04 PM	Reported
28	N019607-007AMS	MS	20	Hexavalent Chromium	05/12/16 2:13 PM	Reported
29	N019607-008A	SAMP	5	Hexavalent Chromium	05/12/16 2:22 PM	Reported
30	N019607-008AMS	MS	5	Hexavalent Chromium	05/12/16 2:32 PM	Reported
31	N019607-010A	SAMP	5	Hexavalent Chromium	05/12/16 2:41 PM	Reported
32	N019607-010AMS	MS	5	Hexavalent Chromium	05/12/16 2:51 PM	Reported
33	N019628-001A	SAMP	10	Hexavalent Chromium	05/12/16 3:00 PM	Reported
34	N019628-001AMS	MS	10	Hexavalent Chromium	05/12/16 3:10 PM	Reported
35	CCV-3	CCV	1	Hexavalent Chromium	05/12/16 3:19 PM	Reported
36	CCB-3	CCB	1	Hexavalent Chromium	05/12/16 3:29 PM	Reported
37	N019628-002A	SAMP	10	Hexavalent Chromium	05/12/16 3:38 PM	Not Reported
38	N019628-002AMS	MS	10	Hexavalent Chromium	05/12/16 3:48 PM	Not Reported
39	N019628-003A	SAMP	1	Hexavalent Chromium	05/12/16 3:57 PM	Not Reported
40	N019628-003AMS	MS	1	Hexavalent Chromium	05/12/16 4:07 PM	Not Reported
41	N019628-004A	SAMP	200	Hexavalent Chromium	05/12/16 4:16 PM	Reported
42	N019628-004AMS	MS	200	Hexavalent Chromium	05/12/16 4:25 PM	Reported

INJECTION LOG: 160512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019628-005A	SAMP	2500	Hexavalent Chromium	05/12/16 4:35 PM	Reported
44	N019628-005AMS	MS	2500	Hexavalent Chromium	05/12/16 4:44 PM	Reported
45	N019628-006A	SAMP	1	Hexavalent Chromium	05/12/16 4:54 PM	Reported
46	N019628-006AMS	MS	1	Hexavalent Chromium	05/12/16 5:03 PM	Reported
47	CCV-4	CCV1	1	Hexavalent Chromium	05/12/16 5:13 PM	Reported
48	CCB-4	CCB	1	Hexavalent Chromium	05/12/16 5:22 PM	Reported
49	N019628-007A	SAMP	1	Hexavalent Chromium	05/12/16 5:33 PM	Not Reported
50	N019628-007AMS	MS	1	Hexavalent Chromium	05/12/16 5:44 PM	Not Reported
51	N019628-008A	SAMP	1	Hexavalent Chromium	05/12/16 5:54 PM	Reported
52	N019628-008AMS	MS	1	Hexavalent Chromium	05/12/16 6:03 PM	Reported
53	N019628-002A	SAMP	20	Hexavalent Chromium	05/12/16 6:13 PM	Reported
54	N019628-002AMS	MS	20	Hexavalent Chromium	05/12/16 6:22 PM	Reported
55	N019628-003A	SAMP	5	Hexavalent Chromium	05/12/16 6:32 PM	Reported
56	N019628-003AMS	MS	5	Hexavalent Chromium	05/12/16 6:41 PM	Reported
57	N019628-006A	SAMP	5	Hexavalent Chromium	05/12/16 6:51 PM	Not Reported
58	N019628-006AMS	MS	5	Hexavalent Chromium	05/12/16 7:00 PM	Not Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/12/16 7:10 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/12/16 7:19 PM	Reported
61	N019628-007A	SAMP	5	Hexavalent Chromium	05/12/16 7:28 PM	Reported
62	N019628-007AMS	MS	5	Hexavalent Chromium	05/12/16 7:38 PM	Reported
63	N019756-001A	SAMP	1	Hexavalent Chromium	05/12/16 7:47 PM	Reported
64	N019756-002A	SAMP	1	Hexavalent Chromium	05/12/16 7:57 PM	Reported
65	N019590-002A	SAMP	5	Hexavalent Chromium	05/12/16 8:06 PM	Not Reported
66	N019590-002AMS	MS	5	Hexavalent Chromium	05/12/16 8:16 PM	Not Reported
67	N019527-002A	SAMP	1	Hexavalent Chromium	05/12/16 8:25 PM	Not Reported
68	N019527-002AMS	MS	1	Hexavalent Chromium	05/12/16 8:35 PM	Not Reported
69	N019527-005A	SAMP	1	Hexavalent Chromium	05/12/16 8:44 PM	Not Reported
70	N019527-005AMS	MS	1	Hexavalent Chromium	05/12/16 8:54 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/12/16 9:03 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/12/16 9:13 PM	Reported

jas 5/16/2016

Injection Log Summary

Sequence Details

Name:	**IC-07_160512A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**12/May/16 22:11:25**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	BLANK	1	1000	Unknown		05/12/2016 11:02	Finished	
9	BLANK	2	1000	Unknown		05/12/2016 11:13	Finished	
10	CCV-1,CCV,1,	3	1000	Unknown		05/12/2016 11:23	Finished	CCV @5ppb, IWST-160401A
11	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/12/2016 11:32	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	5	1000	Unknown		05/12/2016 11:42	Finished	CCB R160512C
13	MB-H2O,MBLK,1	6	1000	Unknown		05/12/2016 11:51	Finished	MB R160502C
14	LCS-H2O,LCS,1	7	1000	Unknown		05/12/2016 12:01	Finished	LCS, IWST-160401B
15	N019719-001A,SAMP	8	1000	Unknown		05/12/2016 12:10	Finished	SAMP, 10mL
16	N019719-001ADUP,D	9	1000	Unknown		05/12/2016 12:19	Finished	DUP, 10mL
17	N019719-001AMS,MS	10	1000	Unknown		05/12/2016 12:29	Finished	MS (5ppb) , IWST-160401B, 10
18	N019719-001AMSD,M	11	1000	Unknown		05/12/2016 12:38	Finished	MSD (5ppb) , IWST-160401B,
19	N019719-002A,SAMP	12	1000	Unknown		05/12/2016 12:48	Finished	SAMP, 10mL
20	N019738-001A,SAMP	13	1000	Unknown		05/12/2016 12:57	Finished	SAMP, 10mL
21	N019738-002A,SAMP	14	1000	Unknown		05/12/2016 13:07	Finished	SAMP, 10mL
22	N019738-003A,SAMP	15	1000	Unknown		05/12/2016 13:16	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	16	1000	Unknown		05/12/2016 13:26	Finished	CCV @10ppb, IWST-160401A
24	CCB-2,CCB,1,	17	1000	Unknown		05/12/2016 13:35	Finished	CCB R160426G
25	N019607-006A,SAMP	18	1000	Unknown		05/12/2016 13:45	Finished	SAMP, 2.0>10mL
26	N019607-006AMS,MS	19	1000	Unknown		05/12/2016 13:54	Finished	MS (1ppb), IWST-160401B, 2.0
27	N019607-007A,SAMP	20	1000	Unknown		05/12/2016 14:04	Finished	SAMP, 0.5>10mL
28	N019607-007AMS,MS	21	1000	Unknown		05/12/2016 14:13	Finished	MS (5ppb), IWST-160401B, 0.5
29	N019607-008A,SAMP	22	1000	Unknown		05/12/2016 14:22	Finished	SAMP, 2.0>10mL
30	N019607-008AMS,MS	23	1000	Unknown		05/12/2016 14:32	Finished	MS (1ppb), IWST-160401B, 2.0
31	N019607-010A,SAMP	24	1000	Unknown		05/12/2016 14:41	Finished	SAMP, 2.0>10mL
32	N019607-010AMS,MS	25	1000	Unknown		05/12/2016 14:51	Finished	MS (1ppb), IWST-160401B, 2.0
33	N019628-001A,SAMP	26	1000	Unknown		05/12/2016 15:00	Finished	SAMP, 1.0>10mL
34	N019628-001AMS,MS	27	1000	Unknown		05/12/2016 15:10	Finished	MS (5ppb), IWST-160401B, 1.0
35	CCV-3,CCV,1,	28	1000	Unknown		05/12/2016 15:19	Finished	CCV @5pb, IWST-160401A
36	CCB-3,CCB,1,	29	1000	Unknown		05/12/2016 15:29	Finished	CCB
37	N019628-002A,SAMP	30	1000	Unknown		05/12/2016 15:38	Finished	SAMP, 1.0>10mL
38	N019628-002AMS,MS	31	1000	Unknown		05/12/2016 15:48	Finished	MS (5ppb), IWST-160401B, 1.0
39	N019628-003A,SAMP	32	1000	Unknown		05/12/2016 15:57	Finished	SAMP, 10mL
40	N019628-003AMS,MS	33	1000	Unknown		05/12/2016 16:07	Finished	MS (1ppb) , IWST-160401B, 2.
41	N019628-004A,SAMP	34	1000	Unknown		05/12/2016 16:16	Finished	SAMP, 50uL>10mL
42	N019628-004AMS,MS	35	1000	Unknown		05/12/2016 16:25	Finished	MS (5ppb), IWST-160401B, 50
43	N019628-005A,SAMP	36	1000	Unknown		05/12/2016 16:35	Finished	SAMP, 4uL>10mL
44	N019628-005AMS,MS	37	1000	Unknown		05/12/2016 16:44	Finished	MS (5ppb), IWST-160401B, 4u
45	N019628-006A,SAMP	38	1000	Unknown		05/12/2016 16:54	Finished	SAMP, 10mL
46	N019628-006AMS,MS	39	1000	Unknown		05/12/2016 17:03	Finished	MS (1ppb) , IWST-160401B, 2.
47	CCV-4,CCV1,1,	40	1000	Unknown		05/12/2016 17:13	Finished	CCV @10ppb, IWST-160401A
48	CCB-4,CCB,1,	41	1000	Unknown		05/12/2016 17:22	Finished	CCB
49	N019628-007A,SAMP	1	1000	Unknown		05/12/2016 17:33	Finished	SAMP, 10mL
50	N019628-007AMS,MS	2	1000	Unknown		05/12/2016 17:44	Finished	MS (1ppb) , IWST-160401B, 2.
51	N019628-008A,SAMP	3	1000	Unknown		05/12/2016 17:54	Finished	SAMP, 10mL
52	N019628-008AMS,MS	4	1000	Unknown		05/12/2016 18:03	Finished	MS (1ppb) , IWST-160401B, 2.
53	N019628-002A,SAMP	5	1000	Unknown		05/12/2016 18:13	Finished	SAMP, 0.5>10mL
54	N019628-002AMS,MS	6	1000	Unknown		05/12/2016 18:22	Finished	MS (5ppb), IWST-160401B, 0.5
55	N019628-003A,SAMP	7	1000	Unknown		05/12/2016 18:32	Finished	SAMP, 2.0>10mL
56	N019628-003AMS,MS	8	1000	Unknown		05/12/2016 18:41	Finished	MS (1ppb), IWST-160401B, 2.0
57	N019628-006A,SAMP	9	1000	Unknown		05/12/2016 18:51	Finished	SAMP, 2.0>10mL
58	N019628-006AMS,MS	10	1000	Unknown		05/12/2016 19:00	Finished	MS (1ppb), IWST-160401B, 2.0
59	CCV-5,CCV,1,	11	1000	Unknown		05/12/2016 19:10	Finished	CCV @5pb, IWST-160401A
60	CCB-5,CCB,1,	12	1000	Unknown		05/12/2016 19:19	Finished	CCB

61	N019628-007A,SAMP	13	1000	Unknown		05/12/2016 19:28	Finished	SAMP, 2.0>10mL
62	N019628-007AMS,MS	14	1000	Unknown		05/12/2016 19:38	Finished	MS (1ppb), IWST-160401B, 2.0
63	N019756-001A,SAMP	15	1000	Unknown		05/12/2016 19:47	Finished	SAMP, 10mL
64	N019756-002A,SAMP	16	1000	Unknown		05/12/2016 19:57	Finished	SAMP, 10mL
65	N019590-002A,SAMP	17	1000	Unknown		05/12/2016 20:06	Finished	SAMP, 2.0>10mL
66	N019590-002AMS,MS	18	1000	Unknown		05/12/2016 20:16	Finished	MS (1ppb), IWST-160401B, 2.0
67	N019527-002A,SAMP	19	1000	Unknown		05/12/2016 20:25	Finished	SAMP, 10mL
68	N019527-002AMS,MS	20	1000	Unknown		05/12/2016 20:35	Finished	MS (1ppb) , IWST-160401B,10
69	N019527-005A,SAMP	21	1000	Unknown		05/12/2016 20:44	Finished	SAMP, 10mL
70	N019527-005AMS,MS	22	1000	Unknown		05/12/2016 20:54	Finished	MS (1ppb) , IWST-160401B,10
71	CCV-6,CCV1,1,	23	1000	Unknown		05/12/2016 21:03	Finished	CCV @10ppb, IWST-160401A
72	CCB-6,CCB,1,	24	1000	Unknown		05/12/2016 21:13	Finished	CCB
73	SHUTDOWN	25	1000	Unknown		05/12/2016 21:22	Finished	
74	Eluent: R160510A, R	26	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R160510F	27	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 ml
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 ml
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 ml
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 ml
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 ml
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 ml
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 ml
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 ml
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 ml
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 ml
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 ml
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 ml
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 ml
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160516A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD1-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD2-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD3-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD4-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD5-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD6-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/16/16 10:42 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/16/16 10:53 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/16/16 11:03 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/16/16 11:13 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/16/16 11:23 AM	Reported
15	MB-R108509	MBLK	1	Hexavalent Chromium	05/16/16 11:33 AM	Reported
16	LCS-R108509	LCS	1	Hexavalent Chromium	05/16/16 11:43 AM	Reported
17	N019638-001A	SAMP	1	Hexavalent Chromium	05/16/16 11:53 AM	Reported
18	N019638-001ADUP	DUP	1	Hexavalent Chromium	05/16/16 12:03 PM	Reported
19	N019638-001AMS	MS	1	Hexavalent Chromium	05/16/16 12:13 PM	Reported
20	N019638-001AMSD	MSD	1	Hexavalent Chromium	05/16/16 12:23 PM	Reported
21	N019651-003A	SAMP	5	Hexavalent Chromium	05/16/16 12:33 PM	Reported
22	N019651-004A	SAMP	5	Hexavalent Chromium	05/16/16 12:43 PM	Reported
23	N019654-001A	SAMP	10	Hexavalent Chromium	05/16/16 12:53 PM	Reported
24	N019654-002A	SAMP	1	Hexavalent Chromium	05/16/16 1:03 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/16/16 1:13 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/16/16 1:23 PM	Reported
27	N019654-003A	SAMP	1	Hexavalent Chromium	05/16/16 1:33 PM	Reported
28	N019654-004A	SAMP	1	Hexavalent Chromium	05/16/16 1:43 PM	Reported
29	N019654-005A	SAMP	1	Hexavalent Chromium	05/16/16 1:53 PM	Reported
30	N019654-006A	SAMP	50	Hexavalent Chromium	05/16/16 2:03 PM	Reported
31	N019654-007A	SAMP	1	Hexavalent Chromium	05/16/16 2:13 PM	Reported
32	N019654-008A	SAMP	10	Hexavalent Chromium	05/16/16 2:23 PM	Reported
33	N019654-009A	SAMP	10	Hexavalent Chromium	05/16/16 2:33 PM	Reported
34	N019654-010A	SAMP	1	Hexavalent Chromium	05/16/16 2:42 PM	Reported
35	N019654-011A	SAMP	1	Hexavalent Chromium	05/16/16 2:52 PM	Reported
36	N019654-012A	SAMP	1	Hexavalent Chromium	05/16/16 3:02 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/16/16 3:12 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/16/16 3:22 PM	Reported
39	N019655-001A	SAMP	1	Hexavalent Chromium	05/16/16 3:36 PM	Reported
40	N019607-009A	SAMP	5	Hexavalent Chromium	05/16/16 3:47 PM	Reported
41	N019607-009AMS	MS	5	Hexavalent Chromium	05/16/16 3:57 PM	Reported
42	N019607-010A	SAMP	5	Hexavalent Chromium	05/16/16 4:07 PM	Not Reported
43	N019607-010AMS	MS	5	Hexavalent Chromium	05/16/16 4:17 PM	Not Reported
44	N019607-010A	SAMP	1	Hexavalent Chromium	05/16/16 4:27 PM	Not Reported
45	N019607-010AMS	MS	1	Hexavalent Chromium	05/16/16 4:37 PM	Not Reported
46	N019611-002A	SAMP	50	Hexavalent Chromium	05/16/16 4:47 PM	Not Reported

INJECTION LOG: 160516A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
47	N019611-002AMS	MS	50	Hexavalent Chromium	05/16/16 4:57 PM	Not Reported
48	N019611-010A	SAMP	10	Hexavalent Chromium	05/16/16 5:07 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/16/16 5:17 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/16/16 5:27 PM	Reported
51	N019611-010AMS	MS	10	Hexavalent Chromium	05/16/16 5:37 PM	Not Reported
52	N019611-011A	SAMP	10	Hexavalent Chromium	05/16/16 5:47 PM	Not Reported
53	N019611-011AMS	MS	10	Hexavalent Chromium	05/16/16 5:57 PM	Not Reported
54	N019611-012A	SAMP	1	Hexavalent Chromium	05/16/16 6:07 PM	Not Reported
55	N019611-012AMS	MS	1	Hexavalent Chromium	05/16/16 6:17 PM	Not Reported
56	N019628-007A	SAMP	5	Hexavalent Chromium	05/16/16 6:27 PM	Not Reported
57	N019628-007AMS	MS	5	Hexavalent Chromium	05/16/16 6:37 PM	Not Reported
58	CCV-5	CCV	1	Hexavalent Chromium	05/16/16 6:47 PM	Not Reported
59	CCB-5	CCB	1	Hexavalent Chromium	05/16/16 6:57 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160516A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**16/May/16 19:27:58**
No. of Injections:	**62**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/16/2016 10:42	Finished	
11	BLANK	2	1000	Unknown		05/16/2016 10:53	Finished	
12	CCV-1,CCV,1	3	1000	Unknown		05/16/2016 11:03	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/16/2016 11:13	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/16/2016 11:23	Finished	CCB R160512C
15	MB-H2O,MBLK,1	6	1000	Unknown		05/16/2016 11:33	Finished	MB R160426G
16	LCS-H2O,LCS,1	7	1000	Unknown		05/16/2016 11:43	Finished	LCS(5ppb), IWST-160401B
17	N019638-001A,SAMP,1	8	1000	Unknown		05/16/2016 11:53	Finished	SAMP, 10mL
18	N019638-001ADUP,DUP,1	9	1000	Unknown		05/16/2016 12:03	Finished	DUP, 10mL
19	N019638-001AMS,MS,1	10	1000	Unknown		05/16/2016 12:13	Finished	MS (5ppb), IWST-160401B, 10 m
20	N019638-~~0013~~AMSD,MSD,1 001AMSD	11	1000	Unknown		05/16/2016 12:23	Finished	MSD (5ppb), IWST-160401B, 10
21	N019651-003A,SAMP,5	12	1000	Unknown		05/16/2016 12:33	Finished	SAMP, 2.0>10mL
22	N019651-004A,SAMP,5	13	1000	Unknown		05/16/2016 12:43	Finished	SAMP, 2.0>10mL
23	N019654-001A,SAMP,10	14	1000	Unknown		05/16/2016 12:53	Finished	SAMP, 1.0>10mL
24	N019654-002A,SAMP,1	15	1000	Unknown		05/16/2016 13:03	Finished	SAMP, 10mL
25	CCV-2,CCV1,1	16	1000	Unknown		05/16/2016 13:13	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/16/2016 13:23	Finished	CCB R160407B
27	N019654-003A,SAMP,1	18	1000	Unknown		05/16/2016 13:33	Finished	SAMP, 10mL
28	N019654-004A,SAMP,1	19	1000	Unknown		05/16/2016 13:43	Finished	SAMP, 10mL
29	N019654-005A,SAMP,1	20	1000	Unknown		05/16/2016 13:53	Finished	SAMP, 10mL
30	N019654-006A,SAMP,50	21	1000	Unknown		05/16/2016 14:03	Finished	SAMP, 0.2>10mL
31	N019654-007A,SAMP,1	22	1000	Unknown		05/16/2016 14:13	Finished	SAMP, 10mL
32	N019654-008A,SAMP,10	23	1000	Unknown		05/16/2016 14:23	Finished	SAMP, 1.0>10mL
33	N019654-009A,SAMP,10	24	1000	Unknown		05/16/2016 14:33	Finished	SAMP, 1.0>10mL
34	N019654-010A,SAMP,1	25	1000	Unknown		05/16/2016 14:42	Finished	SAMP, 10mL
35	N019654-011A,SAMP,1	26	1000	Unknown		05/16/2016 14:52	Finished	SAMP, 10mL
36	N019654-012A,SAMP,1	27	1000	Unknown		05/16/2016 15:02	Finished	SAMP, 10mL
37	CCV-3,CCV,1	28	1000	Unknown		05/16/2016 15:12	Finished	CCV @ 5ppb, IWST-160401A
38	CCB-3,CCB,1	29	1000	Unknown		05/16/2016 15:22	Finished	CCB
39	N019655-001A,SAMP,1	1	1000	Unknown		05/16/2016 15:36	Finished	SAMP, 10mL
40	N019607-009A,SAMP,5	2	1000	Unknown		05/16/2016 15:47	Finished	SAMP, 2.0>10mL
41	N019607-009AMS,MS,5	3	1000	Unknown		05/16/2016 15:57	Finished	MS (1ppb), IWST-160401B, 2.0>
42	N019607-010A,SAMP,5	4	1000	Unknown		05/16/2016 16:07	Finished	SAMP, 2.0>10mL
43	N019607-010AMS,MS,5	5	1000	Unknown		05/16/2016 16:17	Finished	MS (1ppb), IWST-160401B, 2.0>
44	N019607-010A,SAMP,1	6	1000	Unknown		05/16/2016 16:27	Finished	SAMP, 10mL
45	N019607-010AMS,MS,1	7	1000	Unknown		05/16/2016 16:37	Finished	MS (1ppb), IWST-160401B, 10 m
46	N019611-002A,SAMP,50	8	1000	Unknown		05/16/2016 16:47	Finished	SAMP, 0.20>10mL
47	N019611-002AMS,MS,50	9	1000	Unknown		05/16/2016 16:57	Finished	MS (5ppb), IWST-160401B, 0.20>
48	N019611-010A,SAMP,10	10	1000	Unknown		05/16/2016 17:07	Finished	SAMP, 1.0>10mL
49	CCV-4,CCV1,1	11	1000	Unknown		05/16/2016 17:17	Finished	CCV @ 10ppb, IWST-160401A
50	CCB-4,CCB,1	12	1000	Unknown		05/16/2016 17:27	Finished	CCB
51	N019611-010AMS,MS,10	13	1000	Unknown		05/16/2016 17:37	Finished	MS (5ppb), IWST-160401B, 1.0>
52	N019611-011A,SAMP,10	14	1000	Unknown		05/16/2016 17:47	Finished	SAMP, 1.0>10mL
53	N019611-011AMS,MS,10	15	1000	Unknown		05/16/2016 17:57	Finished	MS (5ppb), IWST-160401B, 1.0>
54	N019611-012A,SAMP,1	16	1000	Unknown		05/16/2016 18:07	Finished	SAMP, 10mL
55	N019611-012AMS,MS,1	17	1000	Unknown		05/16/2016 18:17	Finished	MS (1ppb), IWST-160401B, 10 m
56	N019628-007A,SAMP,5	18	1000	Unknown		05/16/2016 18:27	Finished	SAMP, 2.0>10mL
57	N019628-007AMS,MS,5	19	1000	Unknown		05/16/2016 18:37	Finished	MS (1ppb), IWST-160401B, 2.0>
58	CCV-5,CCV,1	20	1000	Unknown		05/16/2016 18:47	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-5,CCB,1	21	1000	Unknown		05/16/2016 18:57	Finished	CCB
60	SHUTDOWN	22	1000	Unknown		05/16/2016 19:07	Finished	
61	Eluent: R160510E	23	1000	Unknown		n.a.	Finished	Eluent
62	PCR: R160512B	24	1000	Unknown		n.a.	Finished	Post-Column Reagent

jas 5/17/2016

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

ORION STAR A214

Date Prepared: 5/4/14
Time Prepared: 2:20 PM
Prepared By: JAS

slope: 99.8% @25°C
pH 7: 6.99
4: 3.97
10: ~~9.99~~ 10.02
LCS: 6.96

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINV-160125H
NH4OH + NH4SO4 eluent: R160505A, R160509A
NH4OH + NH4SO4 buffer: R160426G

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019606-1A	9.28	9.35	~250 mL	~250 mL	+1 drop GN NaOH	R160426G
2)	-2A	9.05	9.45	↓	↓	+4 drops GN NaOH	↓
3)	-3A	9.07	9.41	↓	↓	+4 drops GN NaOH	↓
4)	-4A	9.15	9.37	↓	↓	+2 drops GN NaOH	↓
5)	-5A	9.35	-	-	-	-	↓
6)	-6A	9.30	-	-	-	-	↓
7)	-7A	9.48	-	-	-	-	↓
8)	-8A	9.49	-	-	-	-	↓
9)	-9A	9.36	-	-	-	-	↓
10)	-10A	9.09	9.38	~250 mL	~250 mL	+4 drops GN NaOH	↓ ; light green
11)	-11A	9.01	9.31	↓	↓	+5 drops	↓ ; light green
12)	-12A	9.07	9.~~3~~42	↓	↓	+5 drops	↓ ; light green
13)	-13A	9.22	9.36	↓	↓	+2 drops	↓
14)	-14A	8.89	9.47	↓	↓	+9 drops	↓
15)	N019607-1A	9.01	9.40	↓	↓	+8 drops	R160426G
	-2A	8.87	9.40	↓	↓	+8 drops	↓

Sample Preparation

Date Prepared: 5/4/14
Time Prepared: ~~7:00 PM~~ 7:00 PM
Prepared By: JAS

slope 98.5%
pH 7: 7.03 @25.2
4: 3.99 @25.1
10: 10.02 @25.4
LCS: 7.05 @24.9

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINV-160125H
NH4OH + NH4SO4 eluent: R160509A, R160510A
NH4OH + NH4SO4 buffer: R160426G

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019607-3A	8.74	9.32	~250 mL	~250 mL	+10 drops GN NaOH	R160426G ~9.44
2)	-4A	8.59	9.49	↓	↓	+10 drops	↓ ~9.68
3)	-5A	8.01	9.36	↓	↓	+20 drops x 7 mL buffer	↓ ~9.69
4)	-6A	~~8.35~~ 8.75	9.33	~250 mL		+10 drops GN NaOH	↓
5)	-7A	8.63	9.60			+8 drops GN NaOH	↓
6)	-8A	8.43	9.67			+8 drops	↓ ; w/ precipitate
7)	-9A	8.51	9.43			+4 drops	↓
8)	-10A (10/2)	8.42	9.33			+9 drops	↓
9)	-10A (20/2)	8.26	9.30			+10 drops	↓
10)	-11A	8.66	9.65			+4 drops	↓
11)							
12)	* calibration for samples N019607-06A onwards.						
13)							
14)							
15)							

Logbook No. 10

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/20/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0519	0.2378	1.1671	2.3360	3.5435	4.7112	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-06
Date Calibrated: 5/2/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0499	0.2341	1.1728	2.3399	3.5237	4.6638	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ICV**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2322911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.913	0.20	5.000	0	98.3	90	110				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2322912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.221	0.20	0.2000	0	111	80	120				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.222	0.20	0.2000	0	111	80	120				

Sample ID: **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.190	0.20	10.00	0	102	95	105				

Sample ID: **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCV**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.953	0.20	5.000	0	99.1	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.112	0.20	10.00	0	101	95	105				

Sample ID: **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCV**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.033	0.20	5.000	0	101	95	105				

Sample ID: **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ZZZZZZ**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2016**	SeqNo: **2322950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.175	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ICV**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2324787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.913	0.20	5.000	0	98.3	90	110				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2324788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.221	0.20	0.2000	0	111	80	120				

Sample ID: **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCV**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	95	105				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID: **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.762	0.20	10.00	0	97.6	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCV**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.846	0.20	5.000	0	96.9	95	105				

Sample ID: **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.929	0.20	10.00	0	99.3	95	105				

Sample ID: **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCV**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.946	0.20	5.000	0	98.9	95	105				

Sample ID: **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.860	0.20	10.00	0	98.6	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **ICV**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2329900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.008	0.20	5.000	0	100	90	110				

Sample ID: **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **ZZZZZZ**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2329901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.213	0.20	0.2000	0	107	80	120				

Sample ID: **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **CCV**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/16/2016**	SeqNo: **2329903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.069	0.20	5.000	0	101	95	105				

Sample ID: **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **ZZZZZZ**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/16/2016**	SeqNo: **2329904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.178	0.20	0.2000	0	88.9	80	120				

Sample ID: **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **ZZZZZZ**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/16/2016**	SeqNo: **2329916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.994	0.20	10.00	0	99.9	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **CCV**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/16/2016**	SeqNo: **2329928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.040	0.20	5.000	0	101	95	105				

Sample ID: **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **ZZZZZZ**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/16/2016**	SeqNo: **2329931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.960	0.20	10.00	0	99.6	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **ICB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2322913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108381**
Client ID: **CCB**	Batch ID: **R108381**	TestNo: **EPA 218.6**		Analysis Date: **5/10/2016**	SeqNo: **2322940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCB-8** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108381**
Client ID: **CCB** Batch ID: **R108381** TestNo: **EPA 218.6** Analysis Date: **5/11/2016** SeqNo: **2322951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ICB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2324789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108431**
Client ID: **CCB** Batch ID: **R108431** TestNo: **EPA 218.6** Analysis Date: **5/12/2016** SeqNo: **2324836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.068	0.20									

Sample ID: **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108431**
Client ID: **CCB** Batch ID: **R108431** TestNo: **EPA 218.6** Analysis Date: **5/12/2016** SeqNo: **2324842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

CCB-5 has detect > 0.02ppb, however, samples N019607 were not affected. Samples were closed by CCB3.

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

5/19/2016

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **ICB**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2329902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **CCB**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/16/2016**	SeqNo: **2329905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **CCB**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/16/2016**	SeqNo: **2329917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.044	0.20									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **CCB**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/16/2016**	SeqNo: **2329929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108509**
Client ID: **CCB**	Batch ID: **R108509**	TestNo: **EPA 218.6**		Analysis Date: **5/16/2016**	SeqNo: **2329932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.024	0.20									

CCB-2 has detect > 0.02ppb, however, sample N019607 was not affected.

CCB-4 has detect > 0.02ppb, however, sample N019607s is >10x the CCB detection.

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

5/19/2016

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/10/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.056	
CCV-2	5.056	
CCV-3	5.056	
CCV-4	5.056	
CCV-5	5.056	
CCV-6	5.056	
CCV-7	5.056	
CCV-8	5.056	
Average	5.056	
Actual RT Window	4.976 - 5.136	
Applied RT Window	4.856 - 5.256	
MB-R108366	N.A.	N.A.
LCS-R108366	5.056	PASS
N019716-001A	5.056	PASS
N019716-002A	5.023	PASS
N019716-003A	5.048	PASS
N019716-001AREP	5.056	PASS
N019716-002AREP	5.023	PASS
N019716-003AREP	5.056	PASS
N019611-001A	5.056	PASS
N019611-001ADUP	5.056	PASS
N019611-001A	5.056	PASS
N019611-001ADUP	5.056	PASS
N019611-001AMS	5.056	PASS
N019611-001AMSD	5.056	PASS
N019611-002A	5.048	PASS
N019611-003A	5.056	PASS
N019611-004A	5.040	PASS
N019611-005A	5.056	PASS
N019611-006A	5.056	PASS
N019611-007A	5.056	PASS
N019611-008A	5.056	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/10/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.056	
CCV-2	5.056	
CCV-3	5.056	
CCV-4	5.056	
CCV-5	5.056	
CCV-6	5.056	
CCV-7	5.056	
CCV-8	5.056	
Average	5.056	
Actual RT Window	4.976 - 5.136	
Applied RT Window	4.856 - 5.256	
N019611-009A	5.031	PASS
N019611-010A	5.056	PASS
N019611-011A	5.048	PASS
N019611-012A	5.048	PASS
N019611-013A	5.048	PASS
N019611-014A	5.031	PASS
N019611-015A	5.040	PASS
N019699-001A	5.031	PASS
N019611-003A	5.056	PASS
N019611-011A	5.056	PASS
N019611-013A	5.056	PASS
N019611-015A	5.031	PASS
MB-R108381	N.A.	N.A.
LCS-R108381	5.056	PASS
N019607-001A	5.031	PASS
N019607-001ADUP	5.023	PASS
N019607-001AMS	5.031	PASS
N019607-001AMSD	5.031	PASS
N019606-006A	4.990	PASS
N019606-006AMS	4.998	PASS
N019606-013A	5.048	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/10/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.056	
CCV-2	5.056	
CCV-3	5.056	
CCV-4	5.056	
CCV-5	5.056	
CCV-6	5.056	
CCV-7	5.056	
CCV-8	5.056	
Average	5.056	
Actual RT Window	4.976 - 5.136	
Applied RT Window	4.856 - 5.256	
N019606-013AMS	5.048	PASS
N019607-002A	5.056	PASS
N019607-002AMS	5.056	PASS
N019607-003A	5.056	PASS
N019607-003AMS	5.056	PASS
N019607-004A	5.031	PASS
N019607-004AMS	5.048	PASS
N019607-005A	N.A.	N.A.
N019607-005AMS	N.A.	N.A.
N019607-006A	N.A.	N.A.
N019607-006AMS	N.A.	N.A.
N019607-007A	5.048	PASS
N019607-007AMS	5.048	PASS
N019607-008A	N.A.	N.A.
N019607-008AMS	N.A.	N.A.
N019607-009A	4.848	FAIL
N019607-009AMS	4.790	FAIL
N019607-010A	4.856	PASS
N019607-010AMS	4.873	PASS
N019607-011A	5.065	PASS
N019607-011AMS	5.056	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/10/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.056	
CCV-2	5.056	
CCV-3	5.056	
CCV-4	5.056	
CCV-5	5.056	
CCV-6	5.056	
CCV-7	5.056	
CCV-8	5.056	
Average	5.056	
Actual RT Window	4.976 - 5.136	
Applied RT Window	4.856 - 5.256	
N019607-005A	5.023	PASS
N019607-005AMS	5.006	PASS
N019607-009A	5.023	PASS
N019607-009AMS	5.015	PASS
N019612-001A	5.056	PASS
N019612-002A	5.048	PASS
N019612-003A	4.998	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/12/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.098	
CCV-2	5.098	
CCV-3	5.090	
CCV-4	5.090	
CCV-5	5.090	
CCV-6	5.090	
Average	5.093	
Actual RT Window	5.013 - 5.173	
Applied RT Window	4.893 - 5.293	
MB-R108431	N.A.	N.A.
LCS-R108431	5.098	PASS
N019719-001A	5.081	PASS
N019719-001ADUP	5.090	PASS
N019719-001AMS	5.090	PASS
N019719-001AMSD	5.081	PASS
N019719-002A	5.098	PASS
N019738-001A	5.081	PASS
N019738-002A	5.081	PASS
N019738-003A	5.098	PASS
N019607-006A	N.A.	N.A.
N019607-006AMS	5.040	PASS
N019607-007A	5.090	PASS
N019607-007AMS	5.090	PASS
N019607-008A	5.006	PASS
N019607-008AMS	5.023	PASS
N019607-010A	5.065	PASS
N019607-010AMS	5.065	PASS
N019628-001A	5.073	PASS
N019628-001AMS	5.065	PASS
N019628-002A	5.073	PASS
N019628-002AMS	5.065	PASS
N019628-003A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/12/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.098	
CCV-2	5.098	
CCV-3	5.090	
CCV-4	5.090	
CCV-5	5.090	
CCV-6	5.090	
Average	5.093	
Actual RT Window	5.013 - 5.173	
Applied RT Window	4.893 - 5.293	
N019628-003AMS	N.A.	N.A.
N019628-004A	5.090	PASS
N019628-004AMS	5.098	PASS
N019628-005A	5.090	PASS
N019628-005AMS	5.090	PASS
N019628-006A	N.A.	N.A.
N019628-006AMS	4.898	PASS
N019628-007A	N.A.	N.A.
N019628-007AMS	N.A.	N.A.
N019628-008A	N.A.	N.A.
N019628-008AMS	5.090	PASS
N019628-002A	5.081	PASS
N019628-002AMS	5.081	PASS
N019628-003A	N.A.	N.A.
N019628-003AMS	5.006	PASS
N019628-006A	N.A.	N.A.
N019628-006AMS	5.056	PASS
N019628-007A	5.031	PASS
N019628-007AMS	5.031	PASS
N019756-001A	5.090	PASS
N019756-002A	5.090	PASS
N019590-002A	5.040	PASS
N019590-002AMS	5.031	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/12/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.098	
CCV-2	5.098	
CCV-3	5.090	
CCV-4	5.090	
CCV-5	5.090	
CCV-6	5.090	
Average	5.093	
Actual RT Window	5.013 - 5.173	
Applied RT Window	4.893 - 5.293	
N019527-002A	5.098	PASS
N019527-002AMS	5.090	PASS
N019527-005A	5.090	PASS
N019527-005AMS	5.081	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/16/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.100	
CCV-2	5.100	
CCV-3	5.100	
CCV-4	5.100	
CCV-5	5.100	
Average	5.100	
Actual RT Window	5.020 - 5.180	
Applied RT Window	4.900 - 5.300	
MB-R108509	5.083	PASS
LCS-R108509	5.100	PASS
N019638-001A	5.058	PASS
N019638-001ADUP	5.058	PASS
N019638-001AMS	5.058	PASS
N019638-001AMSD	5.058	PASS
N019651-003A	5.092	PASS
N019651-004A	5.092	PASS
N019654-001A	5.092	PASS
N019654-002A	5.083	PASS
N019654-003A	5.092	PASS
N019654-004A	N.A.	N.A.
N019654-005A	N.A.	N.A.
N019654-006A	5.100	PASS
N019654-007A	5.092	PASS
N019654-008A	5.092	PASS
N019654-009A	5.092	PASS
N019654-010A	5.083	PASS
N019654-011A	5.092	PASS
N019654-012A	N.A.	N.A.
N019655-001A	5.117	PASS
N019607-009A	5.067	PASS
N019607-009AMS	5.050	PASS
N019607-010A	5.075	PASS
N019607-010AMS	5.067	PASS
N019607-010A	N.A.	N.A.
N019607-010AMS	N.A.	N.A.
N019611-002A	5.100	PASS
N019611-002AMS	5.100	PASS
N019611-010A	5.100	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/16/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.100	
CCV-2	5.100	
CCV-3	5.100	
CCV-4	5.100	
CCV-5	5.100	
Average	5.100	
Actual RT Window	5.020 - 5.180	
Applied RT Window	4.900 - 5.300	
N019611-010AMS	5.100	PASS
N019611-011A	5.100	PASS
N019611-011AMS	5.100	PASS
N019611-012A	5.083	PASS
N019611-012AMS	5.092	PASS
N019628-007A	5.025	PASS
N019628-007AMS	5.033	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 ml
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 ml
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 ml
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 ml
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 ml
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 ml
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 ml
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 ml
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 ml
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 ml
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 ml
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 ml
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 ml
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

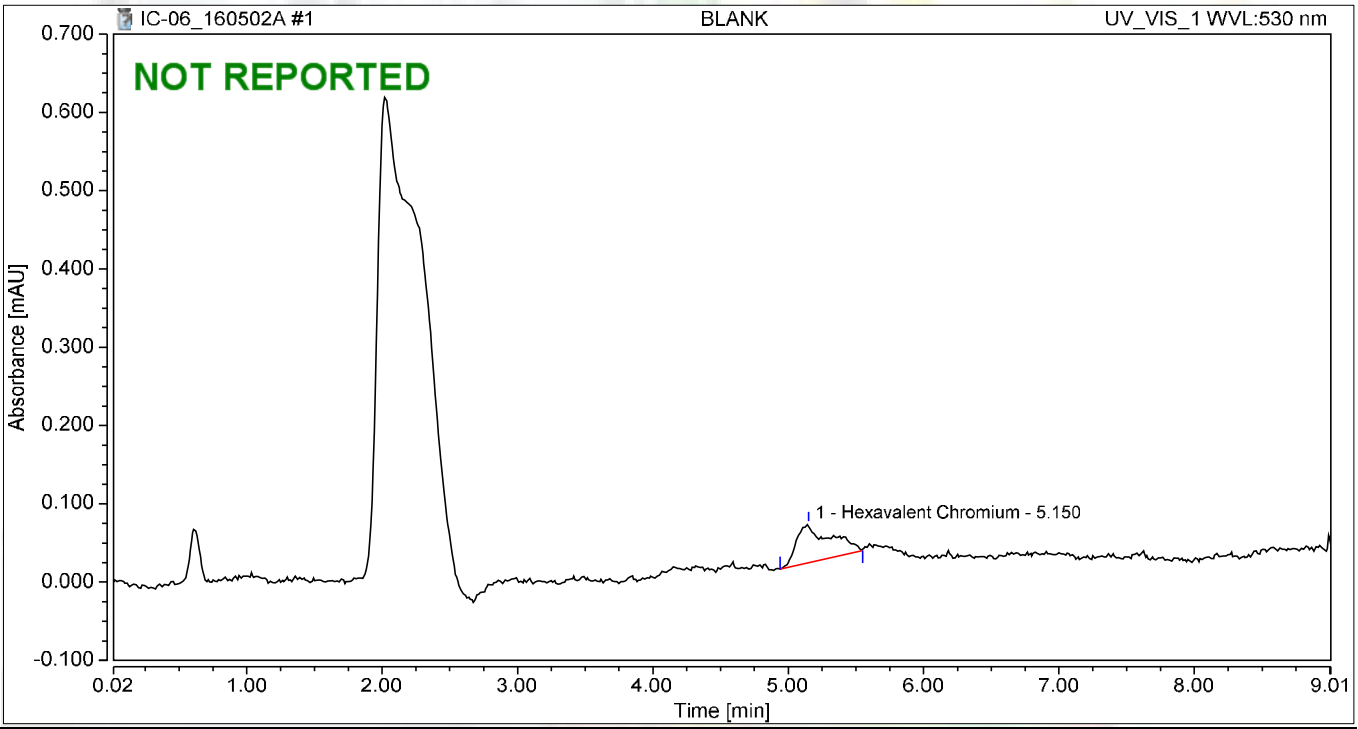
71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

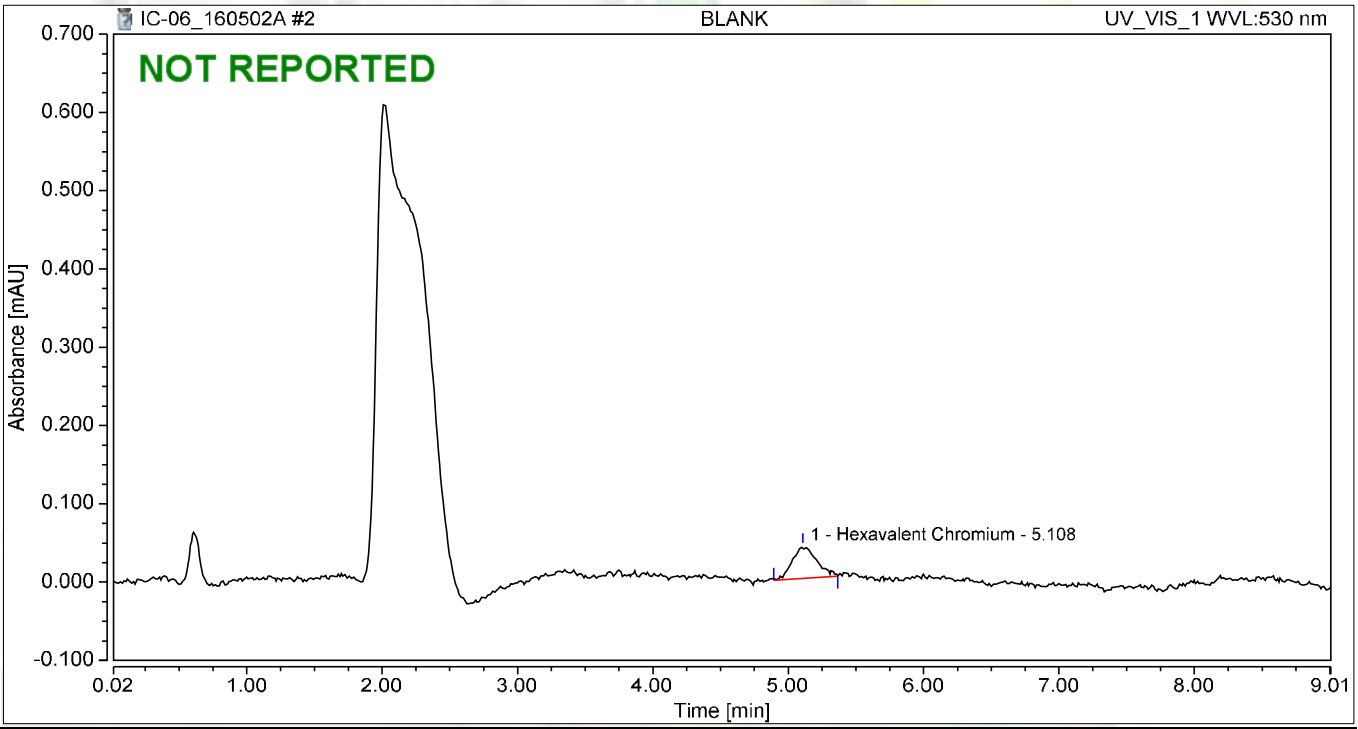
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.014	0.049	100.00	100.00	0.0418
Total:			**0.014**	**0.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

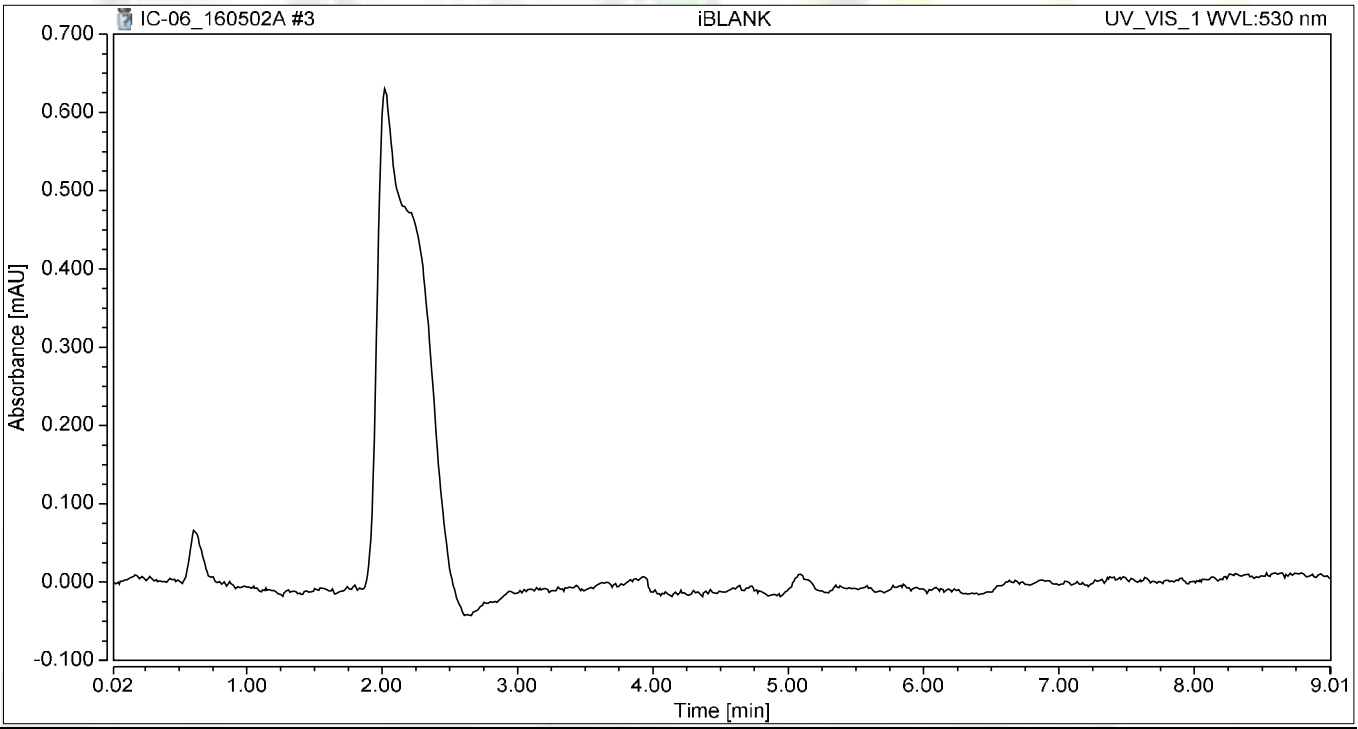
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.008	0.041	100.00	100.00	0.0183
Total:			**0.008**	**0.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

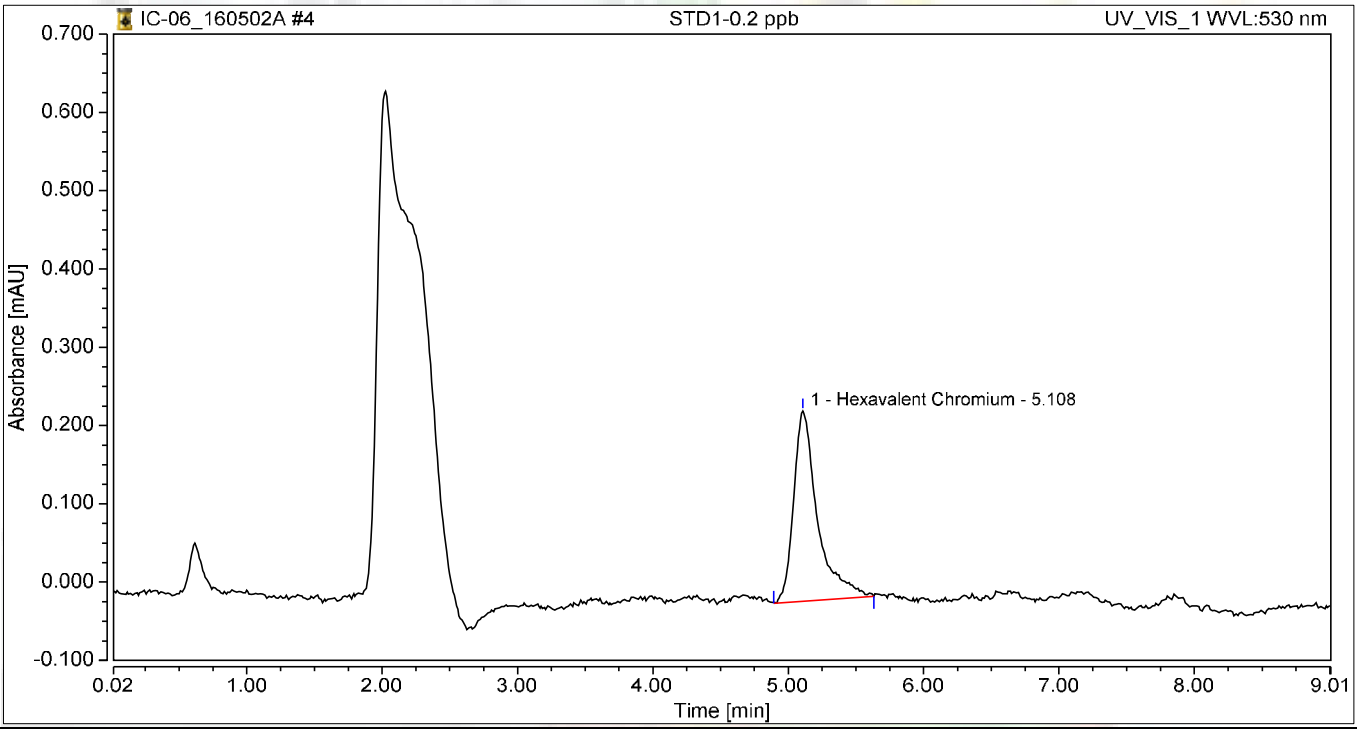
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

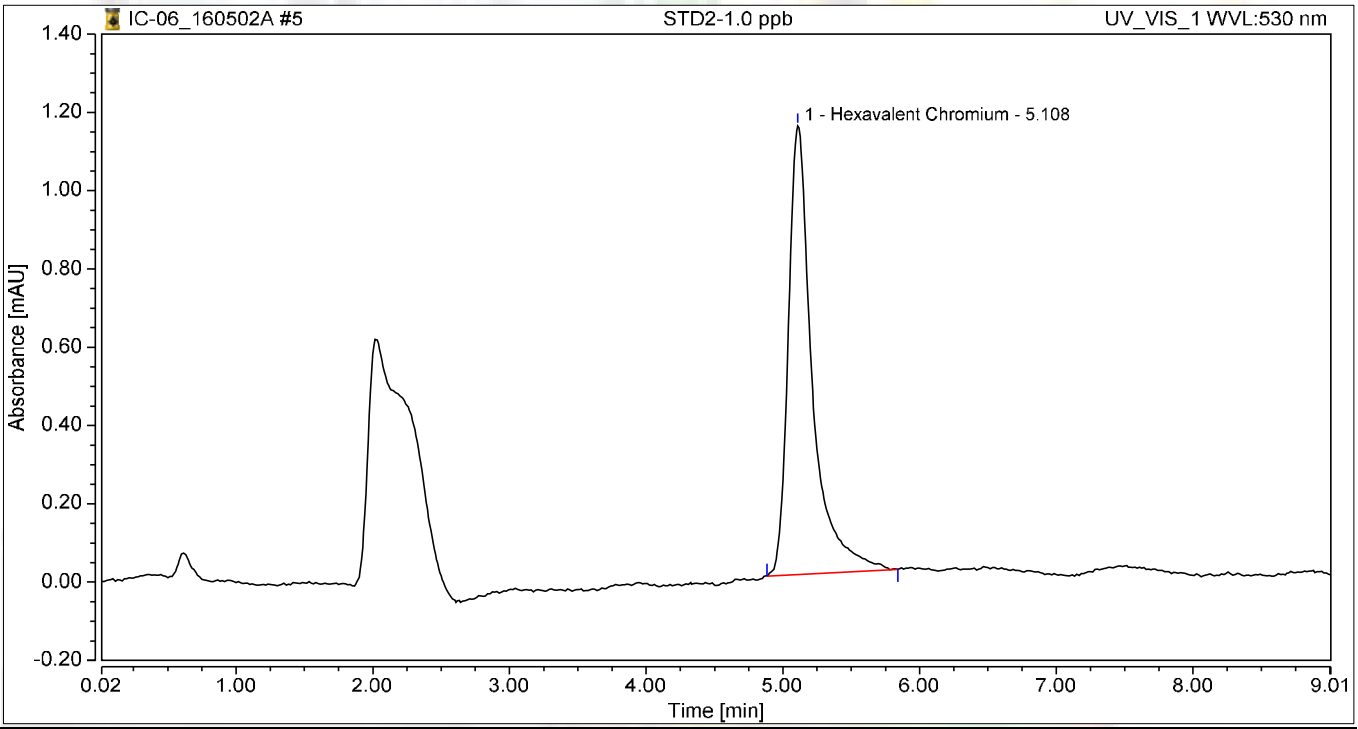
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.050	0.243	100.00	100.00	0.1956
Total:			**0.050**	**0.243**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

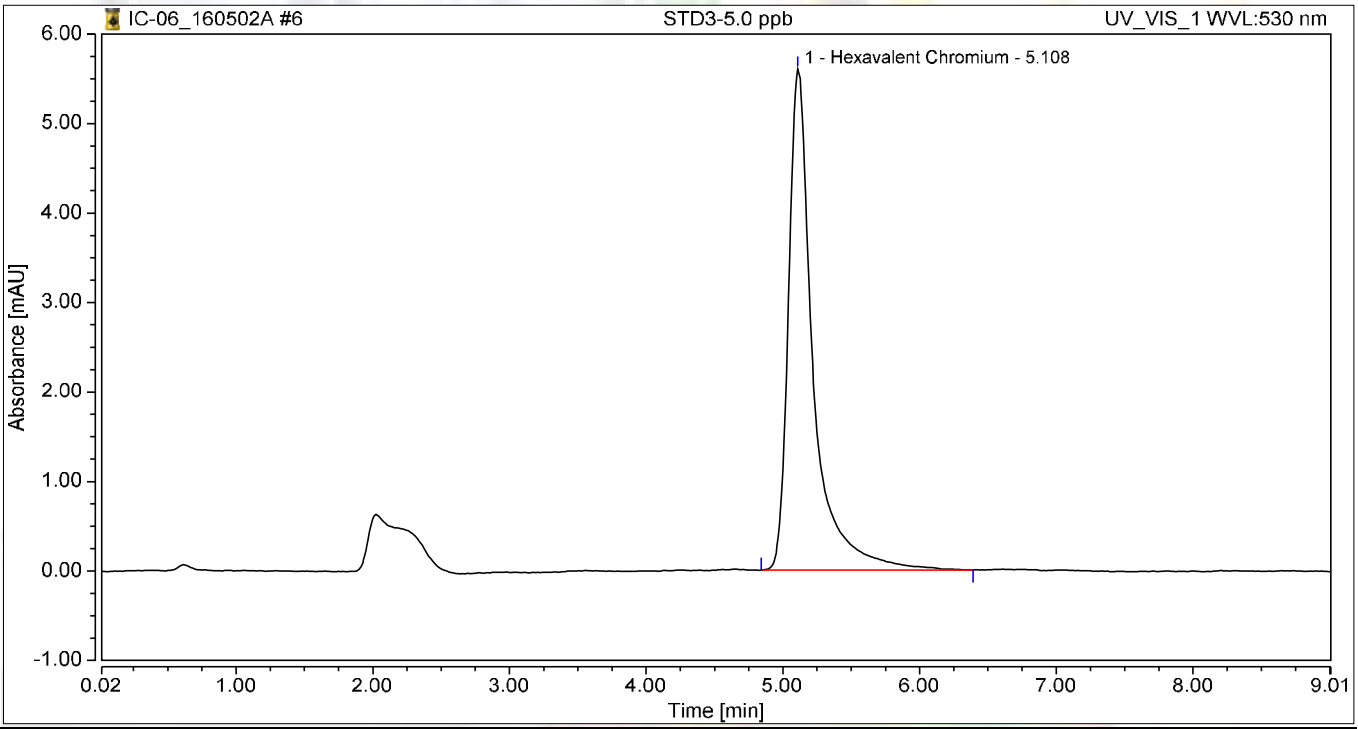
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.234	1.147	100.00	100.00	0.9843
Total:			**0.234**	**1.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

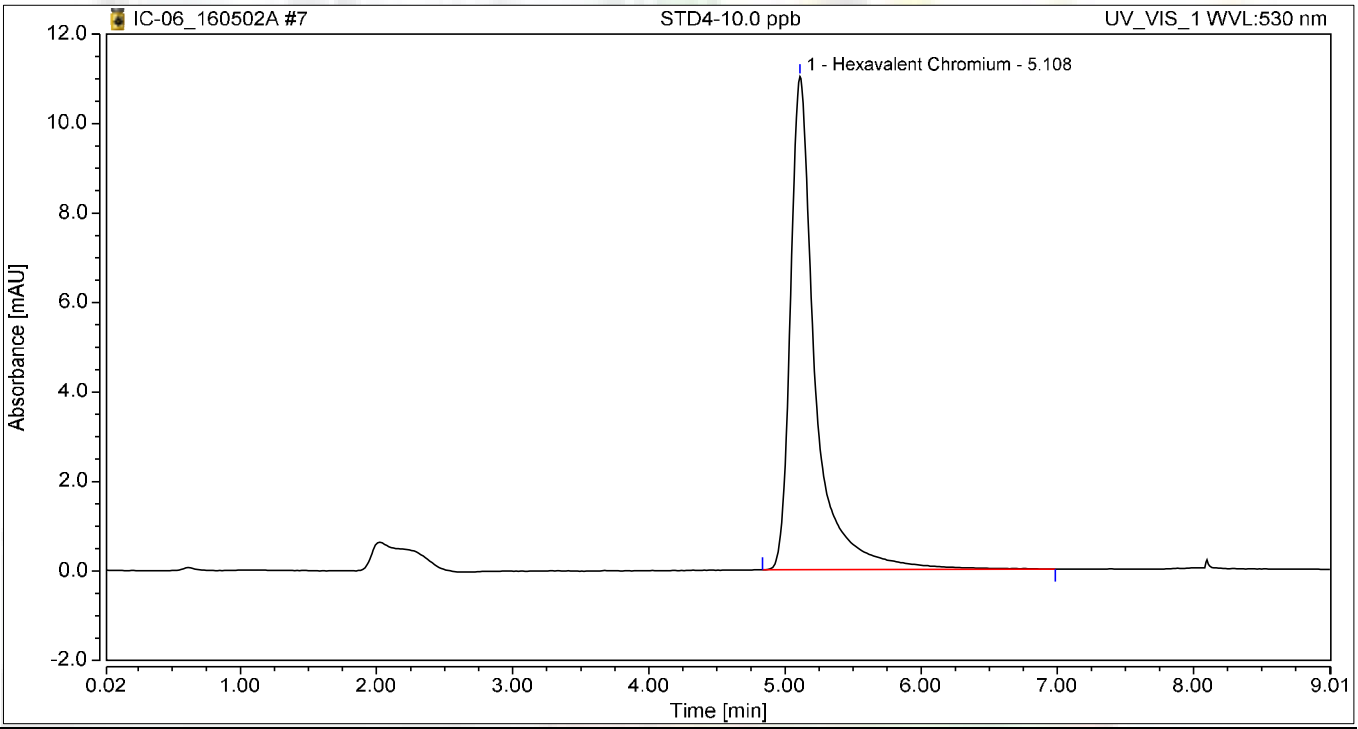
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.173	5.600	100.00	100.00	5.0033
Total:			**1.173**	**5.600**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

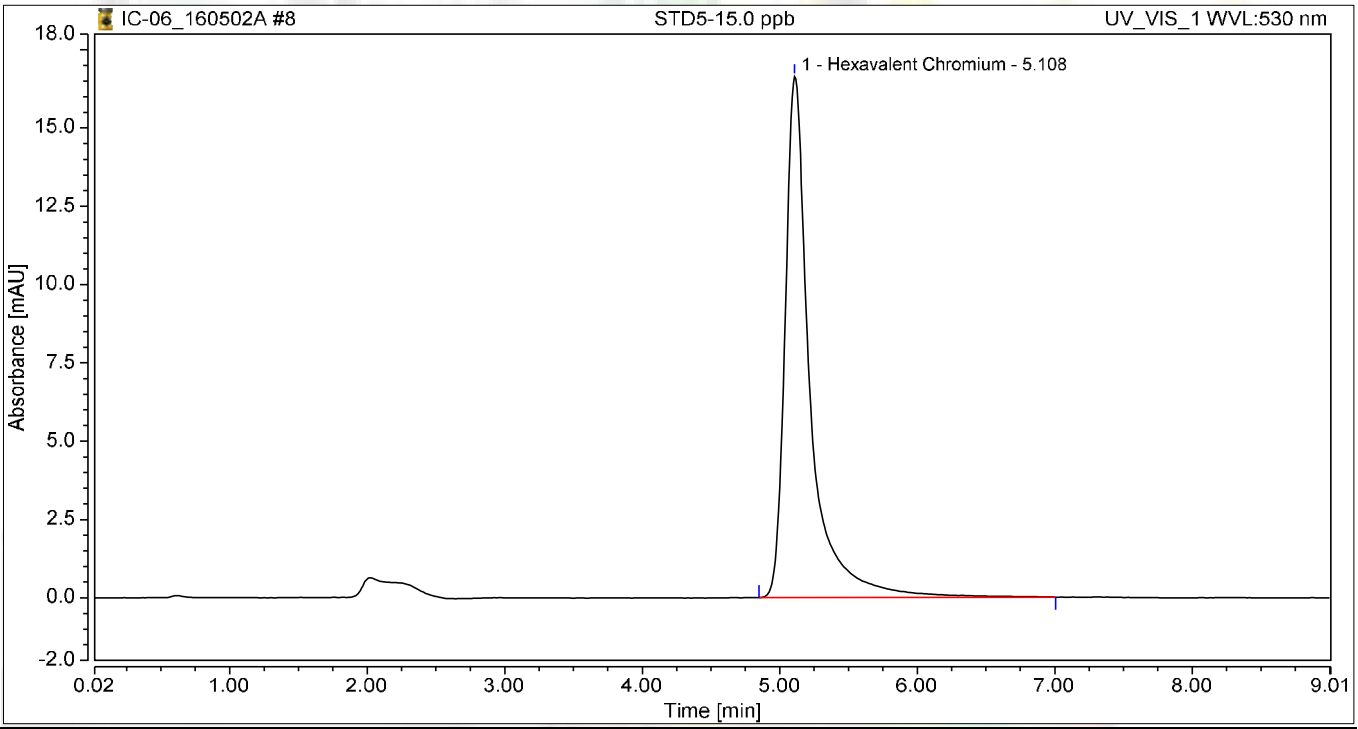
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.340	11.026	100.00	100.00	9.9997
Total:			**2.340**	**11.026**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

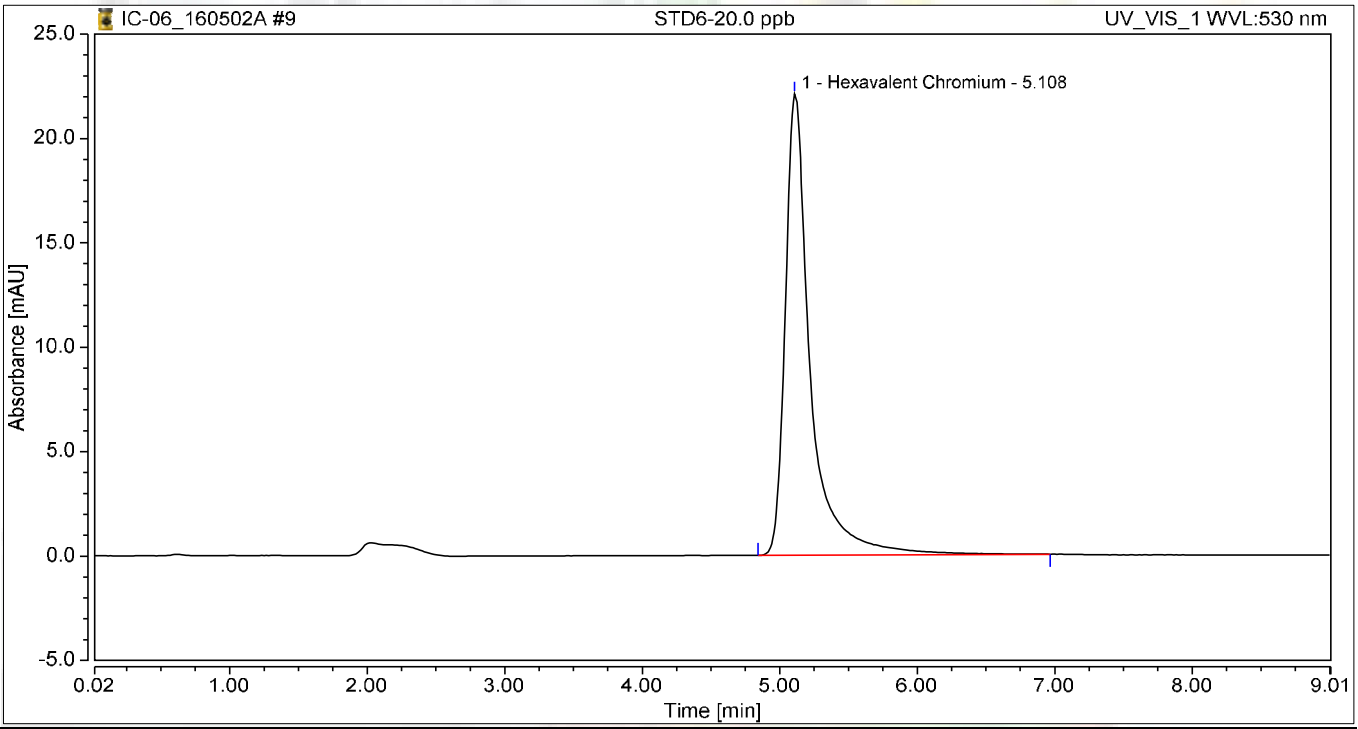
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	3.524	16.642	100.00	100.00	15.0679
Total:			**3.524**	**16.642**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**07**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



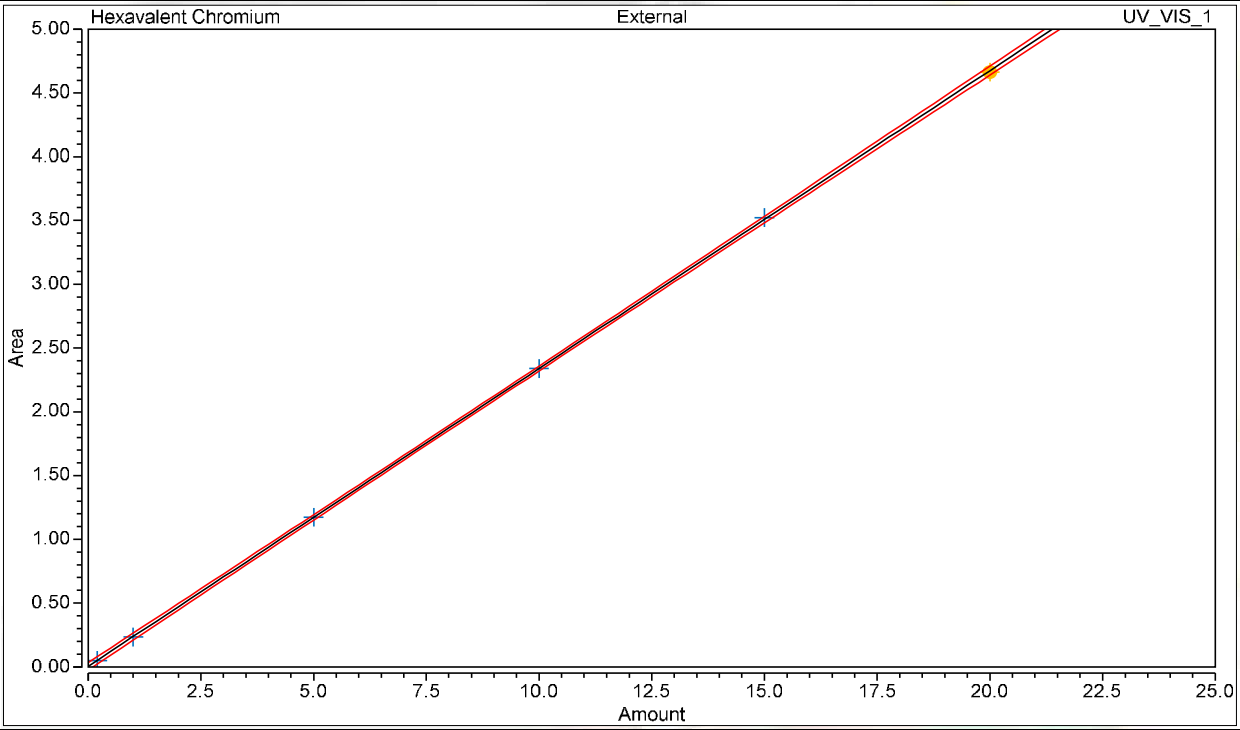
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	4.664	22.077	100.00	100.00	19.9492
Total:			**4.664**	**22.077**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin, WithOffset	*Offset (C0)*	0.0042
Evaluation Type	Area	*Slope (C1)*	0.2336
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

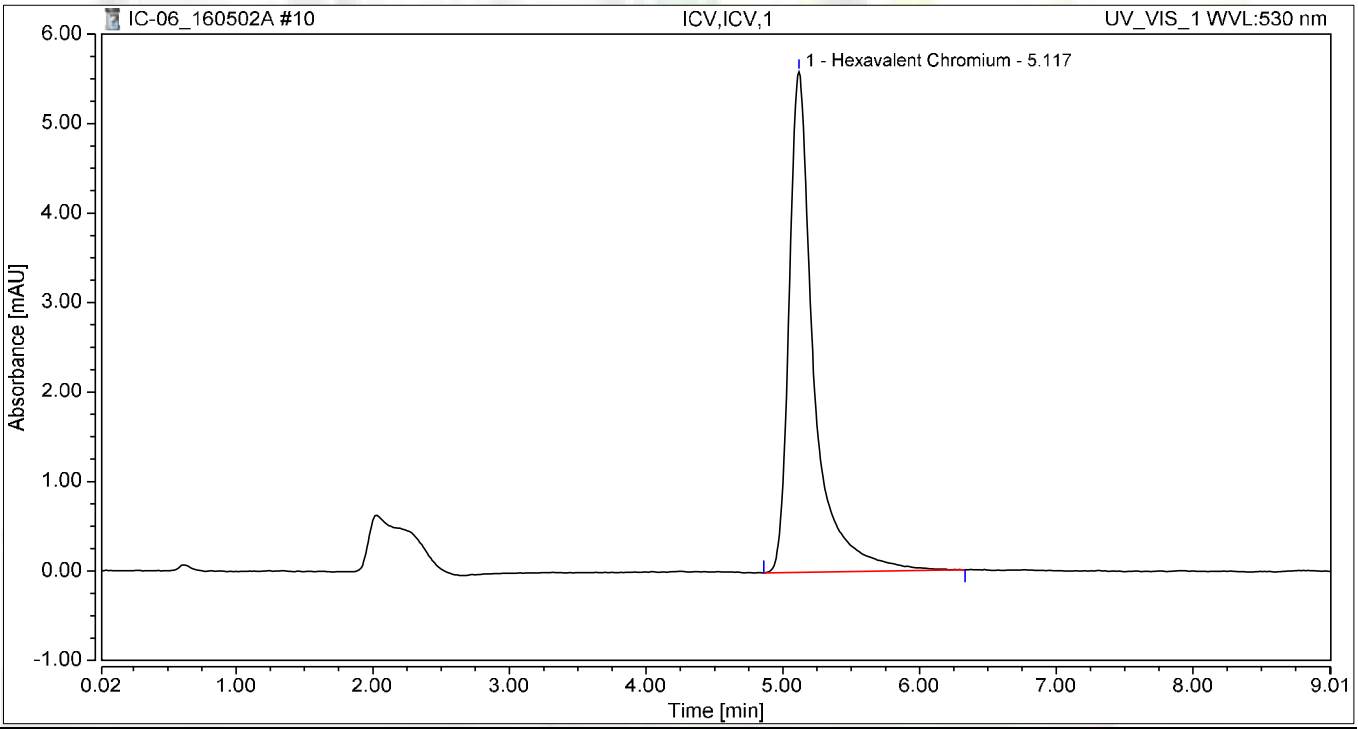
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	02	0.2000	0.0499	0.050	0.243
5	STD2-1.0 ppb	03	1.0000	0.2341	0.234	1.147
6	STD3-5.0 ppb	04	5.0000	1.1728	1.173	5.600
7	STD4-10.0 ppb	05	10.0000	2.3399	2.340	11.026
8	STD5-15.0 ppb	06	15.0000	3.5237	3.524	16.642
9	STD6-20.0 ppb	07	20.0000	4.6638	4.664	22.077

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

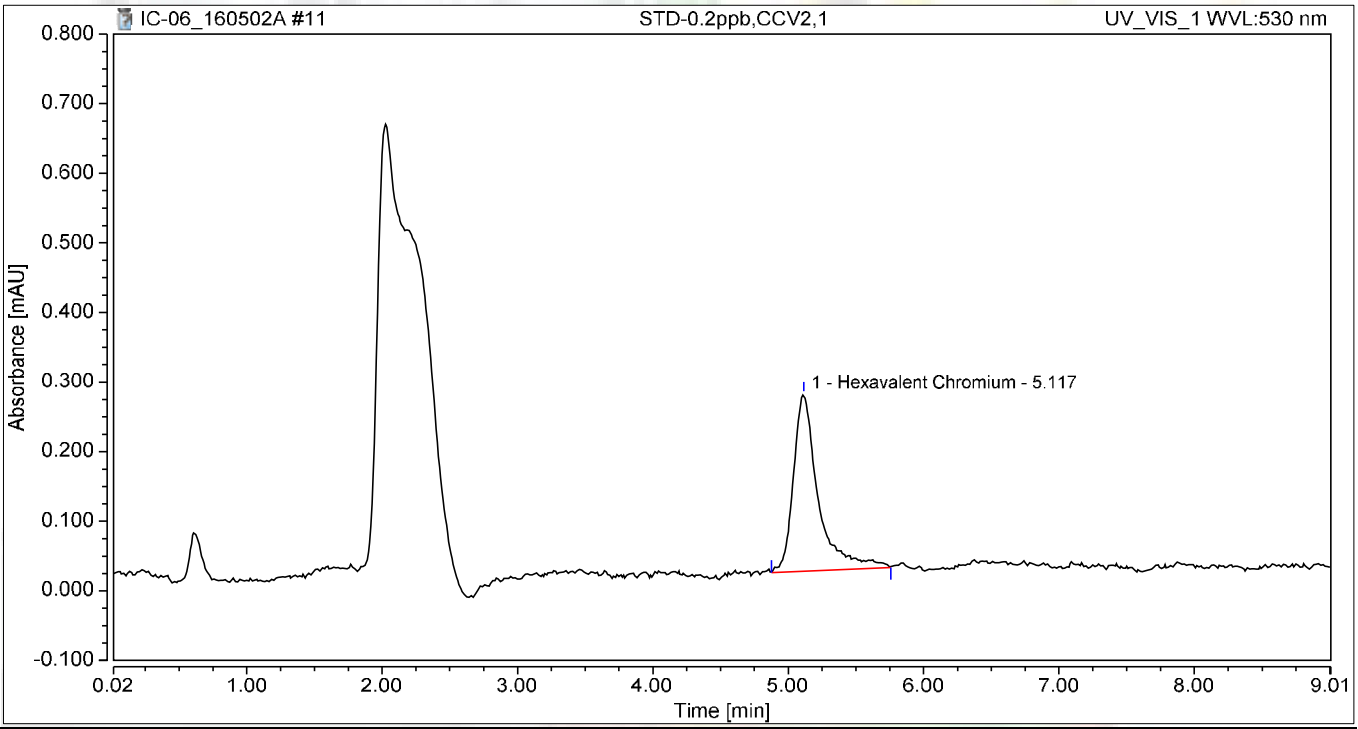
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	1.174	5.596	100.00	100.00	5.0075
Total:			**1.174**	**5.596**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

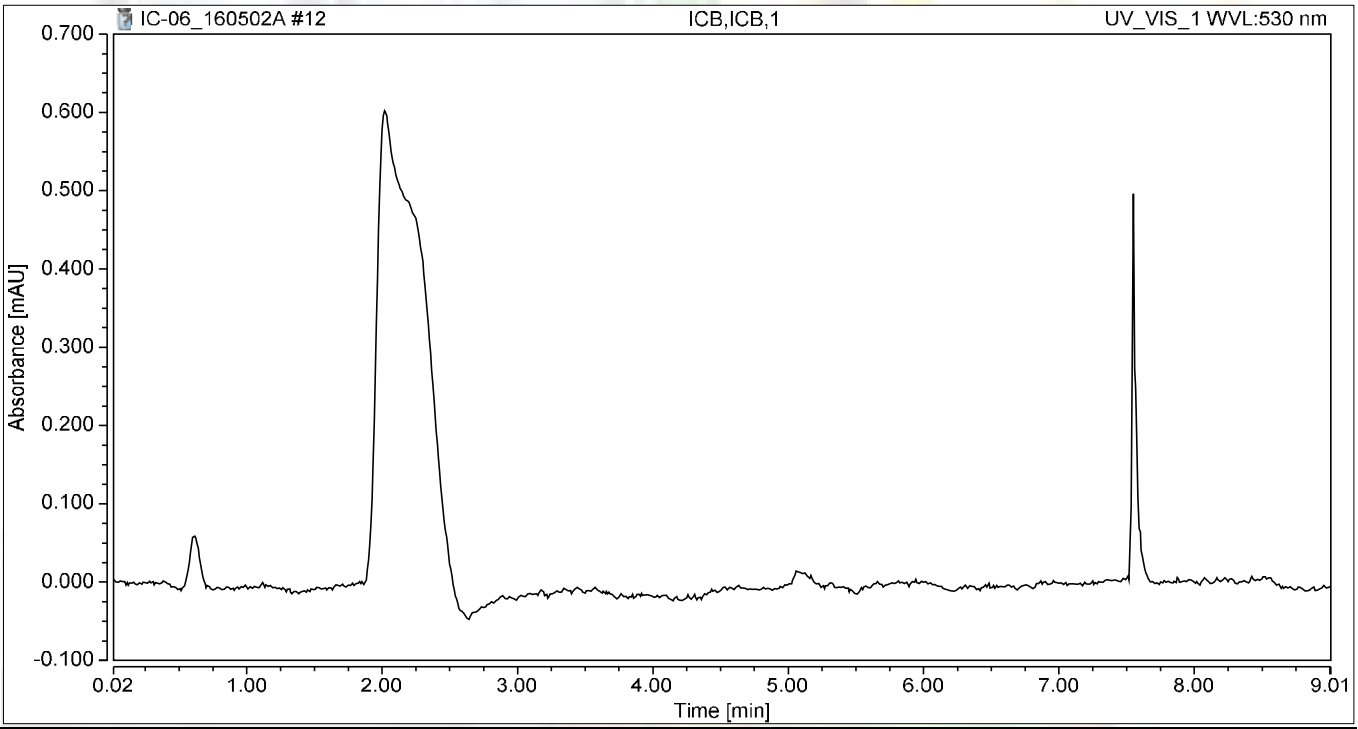
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.054	0.254	100.00	100.00	0.2134
Total:			**0.054**	**0.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160516A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD1-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD2-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD3-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD4-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD5-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD6-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/16/16 10:42 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/16/16 10:53 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/16/16 11:03 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/16/16 11:13 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/16/16 11:23 AM	Reported
15	MB-R108509	MBLK	1	Hexavalent Chromium	05/16/16 11:33 AM	Reported
16	LCS-R108509	LCS	1	Hexavalent Chromium	05/16/16 11:43 AM	Reported
17	N019638-001A	SAMP	1	Hexavalent Chromium	05/16/16 11:53 AM	Reported
18	N019638-001ADUP	DUP	1	Hexavalent Chromium	05/16/16 12:03 PM	Reported
19	N019638-001AMS	MS	1	Hexavalent Chromium	05/16/16 12:13 PM	Reported
20	N019638-001AMSD	MSD	1	Hexavalent Chromium	05/16/16 12:23 PM	Reported
21	N019651-003A	SAMP	5	Hexavalent Chromium	05/16/16 12:33 PM	Reported
22	N019651-004A	SAMP	5	Hexavalent Chromium	05/16/16 12:43 PM	Reported
23	N019654-001A	SAMP	10	Hexavalent Chromium	05/16/16 12:53 PM	Reported
24	N019654-002A	SAMP	1	Hexavalent Chromium	05/16/16 1:03 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/16/16 1:13 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/16/16 1:23 PM	Reported
27	N019654-003A	SAMP	1	Hexavalent Chromium	05/16/16 1:33 PM	Reported
28	N019654-004A	SAMP	1	Hexavalent Chromium	05/16/16 1:43 PM	Reported
29	N019654-005A	SAMP	1	Hexavalent Chromium	05/16/16 1:53 PM	Reported
30	N019654-006A	SAMP	50	Hexavalent Chromium	05/16/16 2:03 PM	Reported
31	N019654-007A	SAMP	1	Hexavalent Chromium	05/16/16 2:13 PM	Reported
32	N019654-008A	SAMP	10	Hexavalent Chromium	05/16/16 2:23 PM	Reported
33	N019654-009A	SAMP	10	Hexavalent Chromium	05/16/16 2:33 PM	Reported
34	N019654-010A	SAMP	1	Hexavalent Chromium	05/16/16 2:42 PM	Reported
35	N019654-011A	SAMP	1	Hexavalent Chromium	05/16/16 2:52 PM	Reported
36	N019654-012A	SAMP	1	Hexavalent Chromium	05/16/16 3:02 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/16/16 3:12 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/16/16 3:22 PM	Reported
39	N019655-001A	SAMP	1	Hexavalent Chromium	05/16/16 3:36 PM	Reported
40	N019607-009A	SAMP	5	Hexavalent Chromium	05/16/16 3:47 PM	Reported
41	N019607-009AMS	MS	5	Hexavalent Chromium	05/16/16 3:57 PM	Reported
42	N019607-010A	SAMP	5	Hexavalent Chromium	05/16/16 4:07 PM	Not Reported
43	N019607-010AMS	MS	5	Hexavalent Chromium	05/16/16 4:17 PM	Not Reported
44	N019607-010A	SAMP	1	Hexavalent Chromium	05/16/16 4:27 PM	Not Reported
45	N019607-010AMS	MS	1	Hexavalent Chromium	05/16/16 4:37 PM	Not Reported
46	N019611-002A	SAMP	50	Hexavalent Chromium	05/16/16 4:47 PM	Not Reported

INJECTION LOG: 160516A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
47	N019611-002AMS	MS	50	Hexavalent Chromium	05/16/16 4:57 PM	Not Reported
48	N019611-010A	SAMP	10	Hexavalent Chromium	05/16/16 5:07 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/16/16 5:17 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/16/16 5:27 PM	Reported
51	N019611-010AMS	MS	10	Hexavalent Chromium	05/16/16 5:37 PM	Not Reported
52	N019611-011A	SAMP	10	Hexavalent Chromium	05/16/16 5:47 PM	Not Reported
53	N019611-011AMS	MS	10	Hexavalent Chromium	05/16/16 5:57 PM	Not Reported
54	N019611-012A	SAMP	1	Hexavalent Chromium	05/16/16 6:07 PM	Not Reported
55	N019611-012AMS	MS	1	Hexavalent Chromium	05/16/16 6:17 PM	Not Reported
56	N019628-007A	SAMP	5	Hexavalent Chromium	05/16/16 6:27 PM	Not Reported
57	N019628-007AMS	MS	5	Hexavalent Chromium	05/16/16 6:37 PM	Not Reported
58	CCV-5	CCV	1	Hexavalent Chromium	05/16/16 6:47 PM	Not Reported
59	CCB-5	CCB	1	Hexavalent Chromium	05/16/16 6:57 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160516A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**16/May/16 19:27:58**
No. of Injections:	**62**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/16/2016 10:42	Finished	
11	BLANK	2	1000	Unknown		05/16/2016 10:53	Finished	
12	CCV-1,CCV,1	3	1000	Unknown		05/16/2016 11:03	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/16/2016 11:13	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/16/2016 11:23	Finished	CCB R160512C
15	MB-H2O,MBLK,1	6	1000	Unknown		05/16/2016 11:33	Finished	MB R160426G
16	LCS-H2O,LCS,1	7	1000	Unknown		05/16/2016 11:43	Finished	LCS(5ppb), IWST-160401B
17	N019638-001A,SAMP,1	8	1000	Unknown		05/16/2016 11:53	Finished	SAMP, 10mL
18	N019638-001ADUP,DUP,1	9	1000	Unknown		05/16/2016 12:03	Finished	DUP, 10mL
19	N019638-001AMS,MS,1	10	1000	Unknown		05/16/2016 12:13	Finished	MS (5ppb), IWST-160401B, 10 m
20	N019638-~~001A~~AMSD,MSD,1 001AMSD	11	1000	Unknown		05/16/2016 12:23	Finished	MSD (5ppb), IWST-160401B, 10
21	N019651-003A,SAMP,5	12	1000	Unknown		05/16/2016 12:33	Finished	SAMP, 2.0>10mL
22	N019651-004A,SAMP,5	13	1000	Unknown		05/16/2016 12:43	Finished	SAMP, 2.0>10mL
23	N019654-001A,SAMP,10	14	1000	Unknown		05/16/2016 12:53	Finished	SAMP, 1.0>10mL
24	N019654-002A,SAMP,1	15	1000	Unknown		05/16/2016 13:03	Finished	SAMP, 10mL
25	CCV-2,CCV1,1	16	1000	Unknown		05/16/2016 13:13	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/16/2016 13:23	Finished	CCB R160407B
27	N019654-003A,SAMP,1	18	1000	Unknown		05/16/2016 13:33	Finished	SAMP, 10mL
28	N019654-004A,SAMP,1	19	1000	Unknown		05/16/2016 13:43	Finished	SAMP, 10mL
29	N019654-005A,SAMP,1	20	1000	Unknown		05/16/2016 13:53	Finished	SAMP, 10mL
30	N019654-006A,SAMP,50	21	1000	Unknown		05/16/2016 14:03	Finished	SAMP, 0.2>10mL
31	N019654-007A,SAMP,1	22	1000	Unknown		05/16/2016 14:13	Finished	SAMP, 10mL
32	N019654-008A,SAMP,10	23	1000	Unknown		05/16/2016 14:23	Finished	SAMP, 1.0>10mL
33	N019654-009A,SAMP,10	24	1000	Unknown		05/16/2016 14:33	Finished	SAMP, 1.0>10mL
34	N019654-010A,SAMP,1	25	1000	Unknown		05/16/2016 14:42	Finished	SAMP, 10mL
35	N019654-011A,SAMP,1	26	1000	Unknown		05/16/2016 14:52	Finished	SAMP, 10mL
36	N019654-012A,SAMP,1	27	1000	Unknown		05/16/2016 15:02	Finished	SAMP, 10mL
37	CCV-3,CCV,1	28	1000	Unknown		05/16/2016 15:12	Finished	CCV @ 5ppb, IWST-160401A
38	CCB-3,CCB,1	29	1000	Unknown		05/16/2016 15:22	Finished	CCB
39	N019655-001A,SAMP,1	1	1000	Unknown		05/16/2016 15:36	Finished	SAMP, 10mL
40	N019607-009A,SAMP,5	2	1000	Unknown		05/16/2016 15:47	Finished	SAMP, 2.0>10mL
41	N019607-009AMS,MS,5	3	1000	Unknown		05/16/2016 15:57	Finished	MS (1ppb), IWST-160401B, 2.0>
42	N019607-010A,SAMP,5	4	1000	Unknown		05/16/2016 16:07	Finished	SAMP, 2.0>10mL
43	N019607-010AMS,MS,5	5	1000	Unknown		05/16/2016 16:17	Finished	MS (1ppb), IWST-160401B, 2.0>
44	N019607-010A,SAMP,1	6	1000	Unknown		05/16/2016 16:27	Finished	SAMP, 10mL
45	N019607-010AMS,MS,1	7	1000	Unknown		05/16/2016 16:37	Finished	MS (1ppb), IWST-160401B, 10 m
46	N019611-002A,SAMP,50	8	1000	Unknown		05/16/2016 16:47	Finished	SAMP, 0.20>10mL
47	N019611-002AMS,MS,50	9	1000	Unknown		05/16/2016 16:57	Finished	MS (5ppb), IWST-160401B, 0.20>
48	N019611-010A,SAMP,10	10	1000	Unknown		05/16/2016 17:07	Finished	SAMP, 1.0>10mL
49	CCV-4,CCV1,1	11	1000	Unknown		05/16/2016 17:17	Finished	CCV @ 10ppb, IWST-160401A
50	CCB-4,CCB,1	12	1000	Unknown		05/16/2016 17:27	Finished	CCB
51	N019611-010AMS,MS,10	13	1000	Unknown		05/16/2016 17:37	Finished	MS (5ppb), IWST-160401B, 1.0>
52	N019611-011A,SAMP,10	14	1000	Unknown		05/16/2016 17:47	Finished	SAMP, 1.0>10mL
53	N019611-011AMS,MS,10	15	1000	Unknown		05/16/2016 17:57	Finished	MS (5ppb), IWST-160401B, 1.0>
54	N019611-012A,SAMP,1	16	1000	Unknown		05/16/2016 18:07	Finished	SAMP, 10mL
55	N019611-012AMS,MS,1	17	1000	Unknown		05/16/2016 18:17	Finished	MS (1ppb), IWST-160401B, 10 m
56	N019628-007A,SAMP,5	18	1000	Unknown		05/16/2016 18:27	Finished	SAMP, 2.0>10mL
57	N019628-007AMS,MS,5	19	1000	Unknown		05/16/2016 18:37	Finished	MS (1ppb), IWST-160401B, 2.0>
58	CCV-5,CCV,1	20	1000	Unknown		05/16/2016 18:47	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-5,CCB,1	21	1000	Unknown		05/16/2016 18:57	Finished	CCB
60	SHUTDOWN	22	1000	Unknown		05/16/2016 19:07	Finished	
61	Eluent: R160510E	23	1000	Unknown		n.a.	Finished	Eluent
62	PCR: R160512B	24	1000	Unknown		n.a.	Finished	Post-Column Reagent

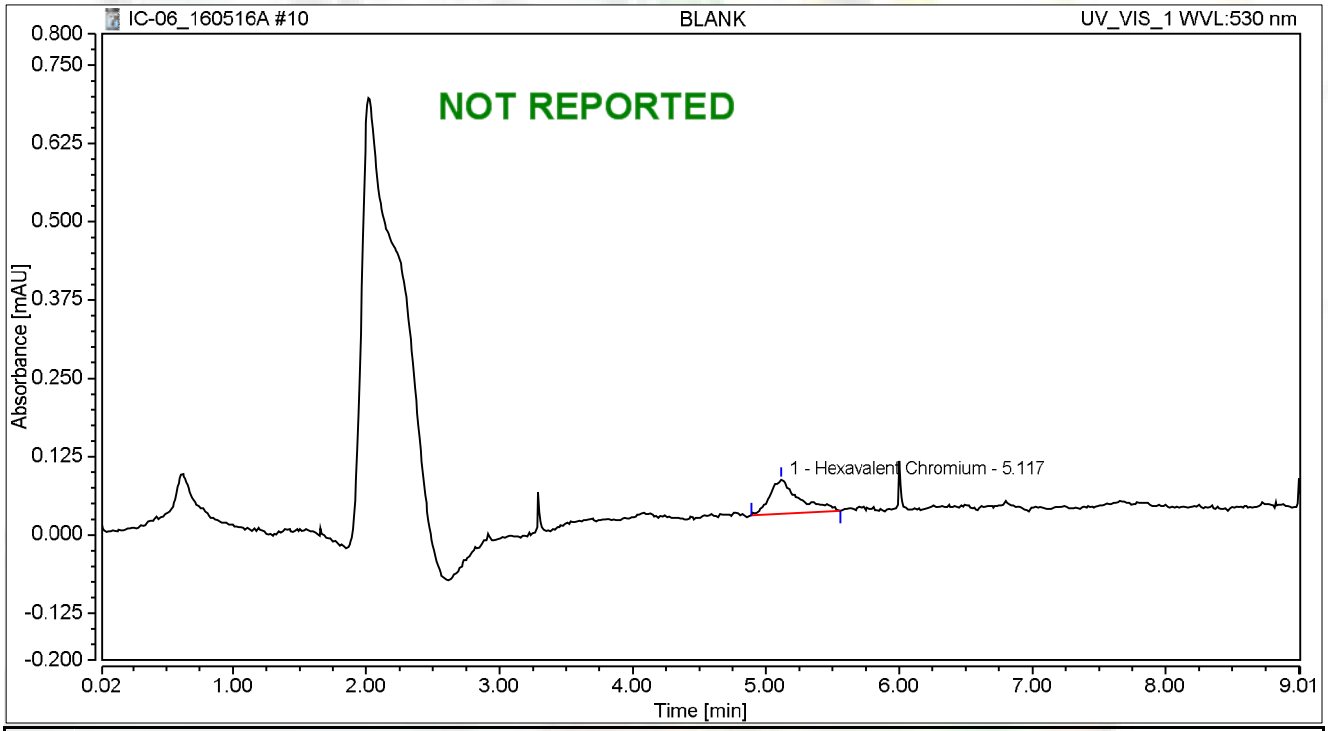
jas 5/17/2016

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

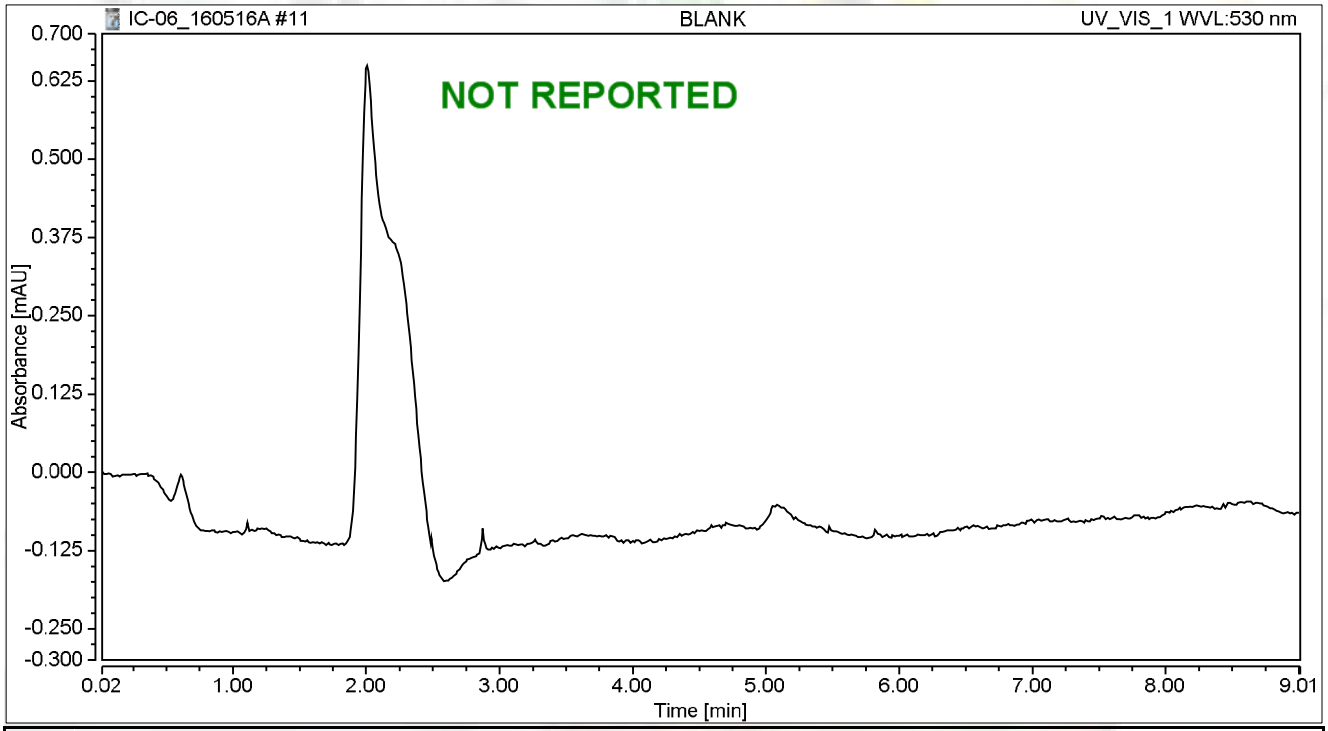
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.014	0.054	100.00	100.00	0.0423
Total:			**0.014**	**0.054**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 10:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

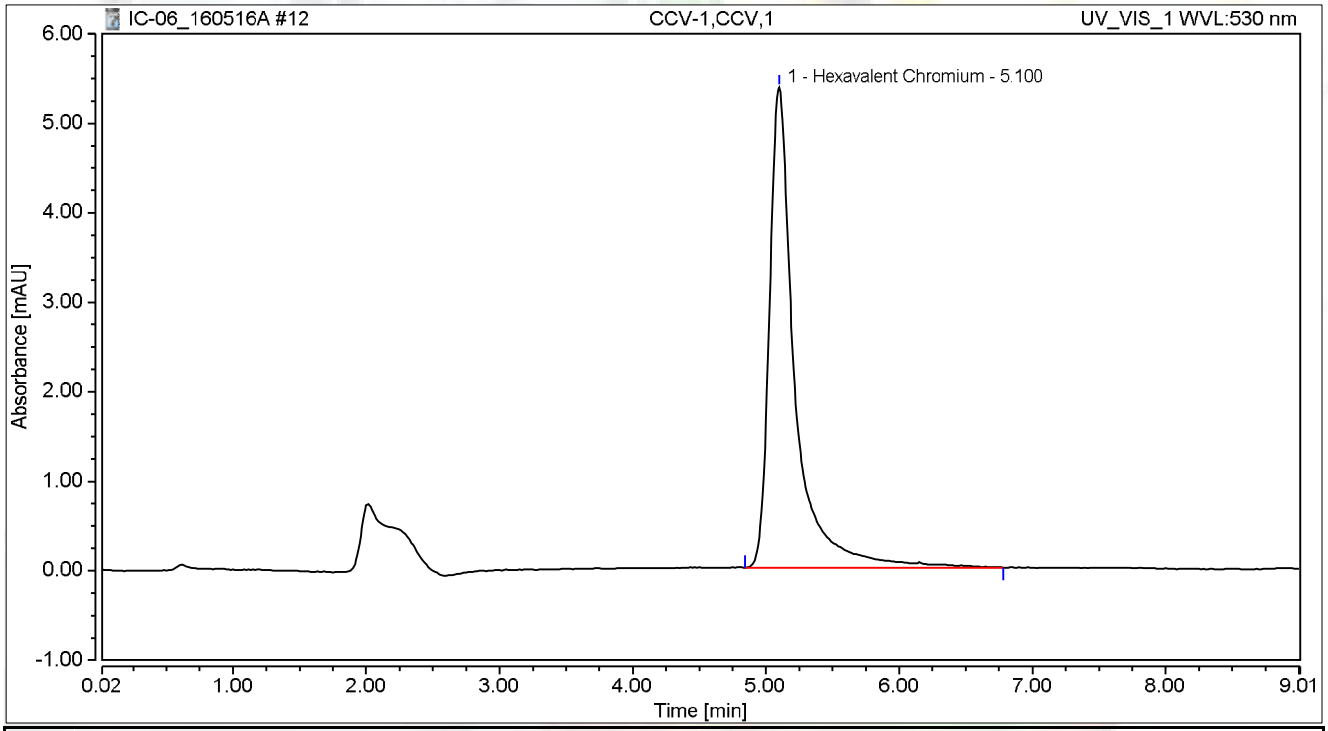
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 11:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

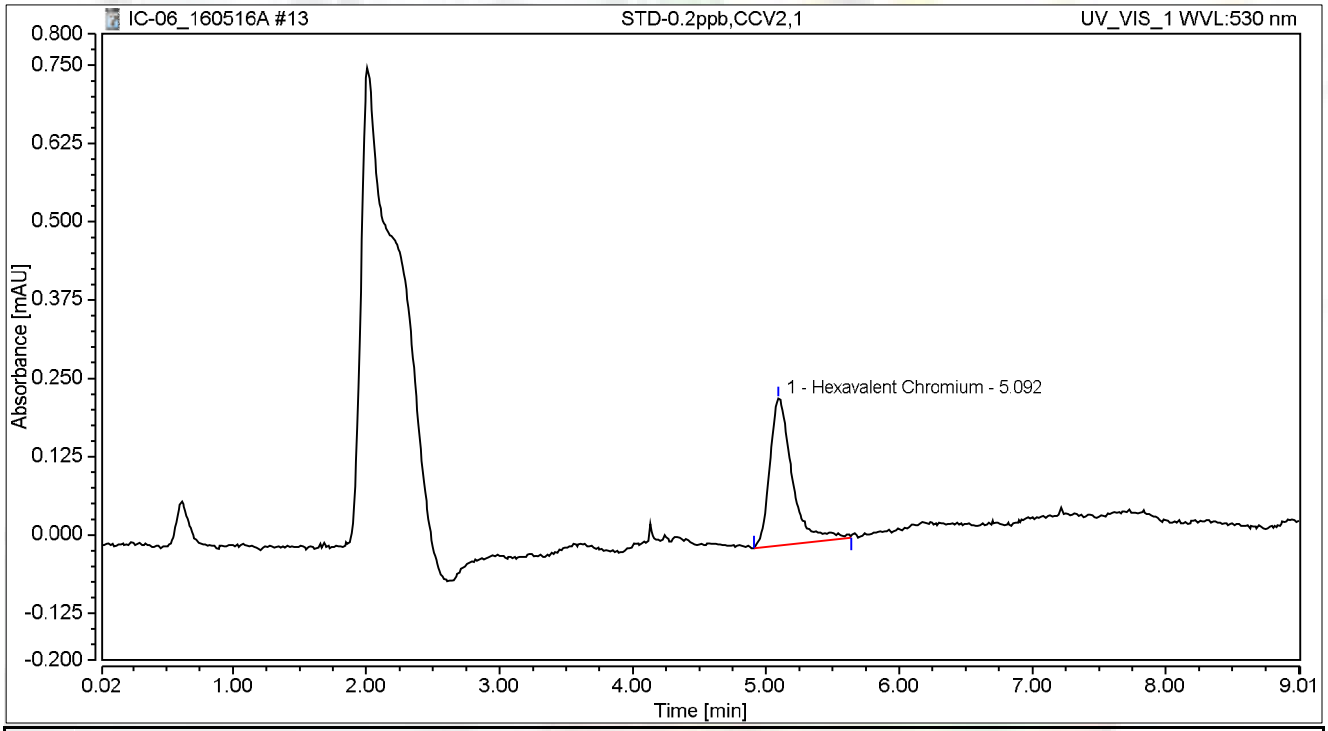
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.188	5.368	100.00	100.00	5.0688
Total:			**1.188**	**5.368**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

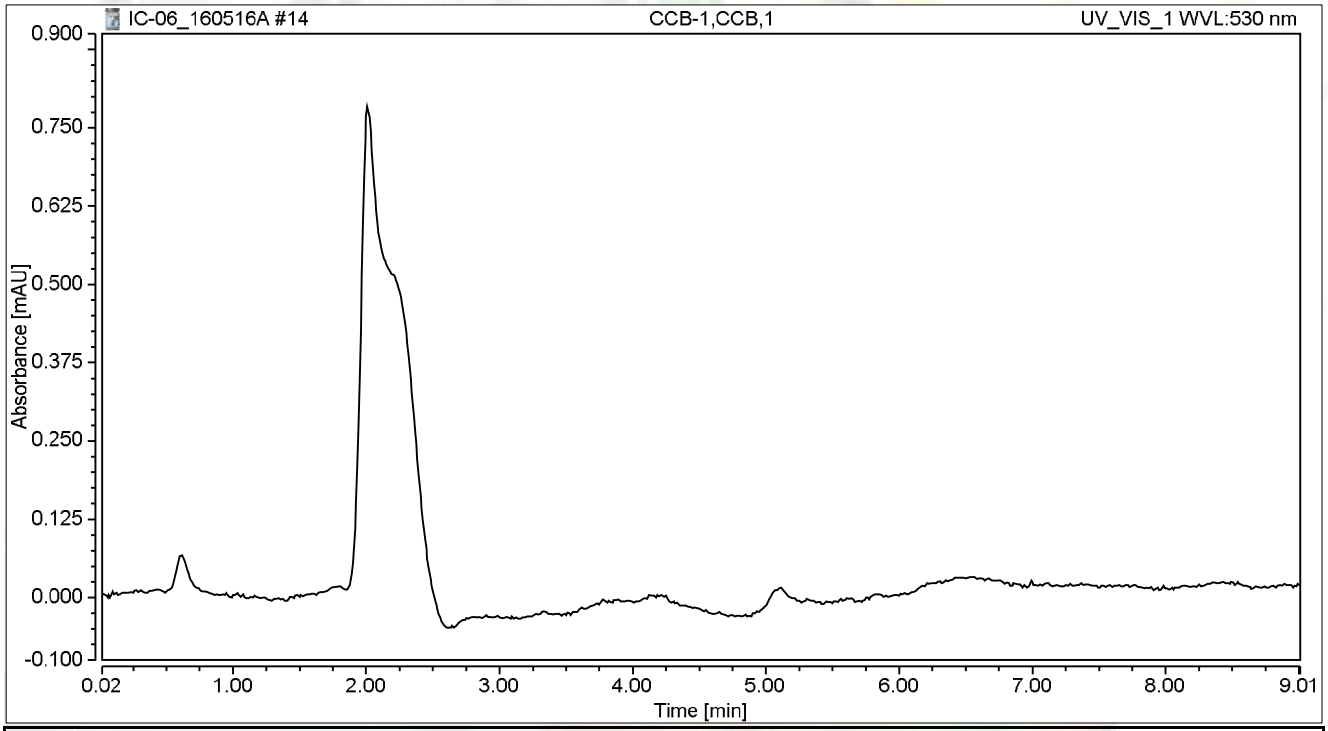
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.046	0.234	100.00	100.00	0.1778
Total:			**0.046**	**0.234**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

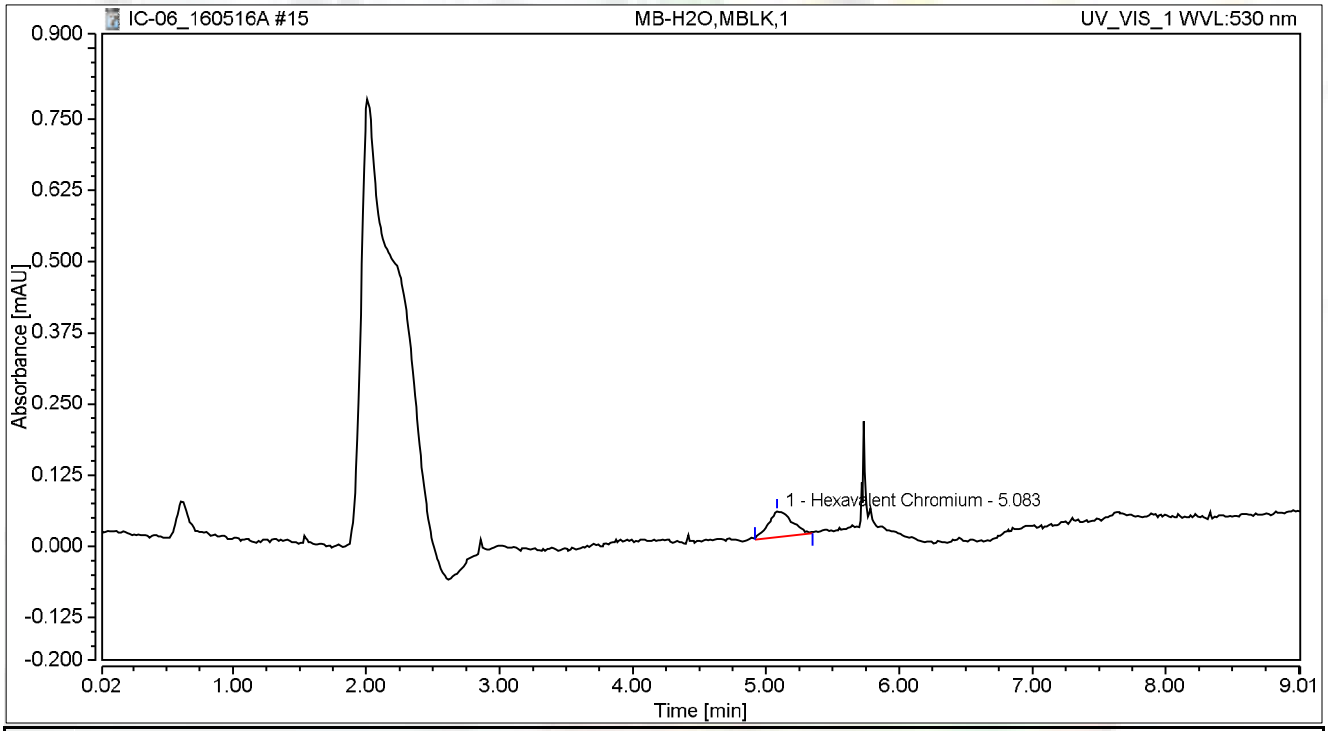
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

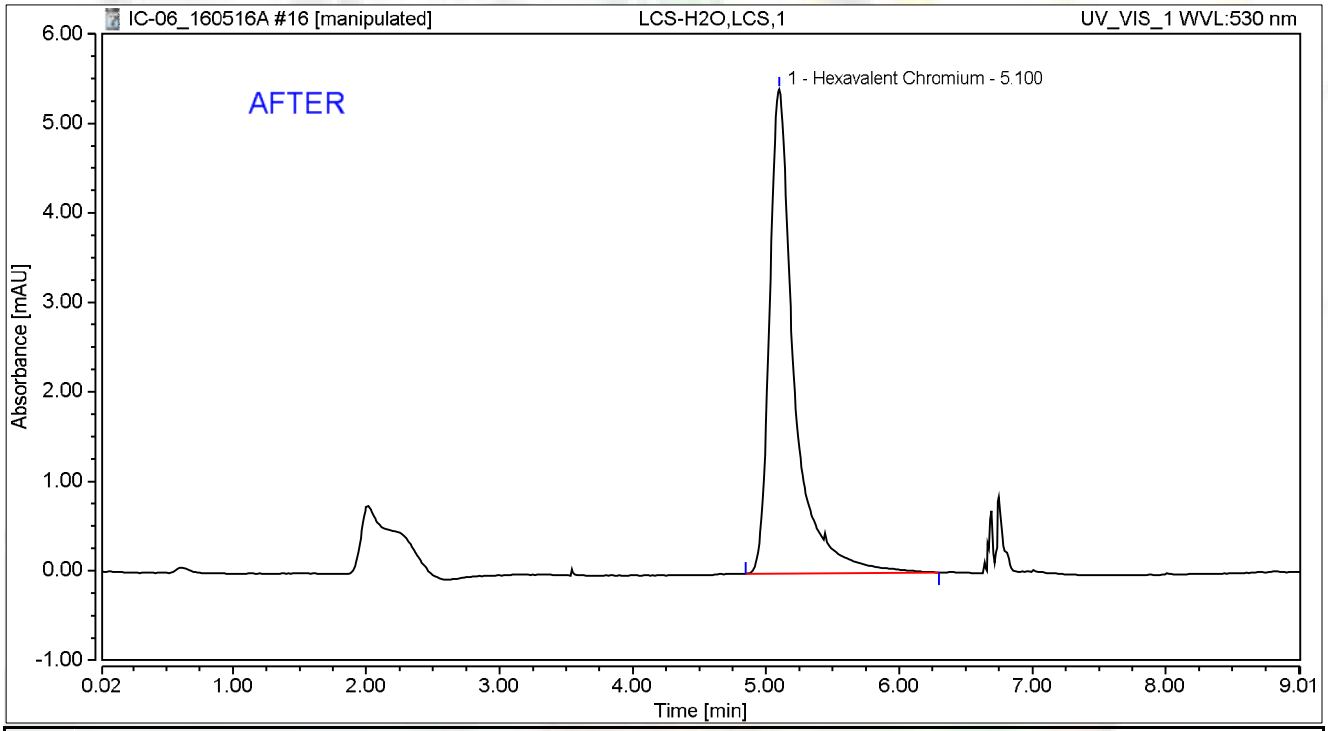
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	0.009	0.045	100.00	100.00	0.0214
Total:			**0.009**	**0.045**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.168	5.414	100.00	100.00	4.9814
Total:			**1.168**	**5.414**	**100.00**	**100.00**	

JAS 5/17/2016

5/19/2016

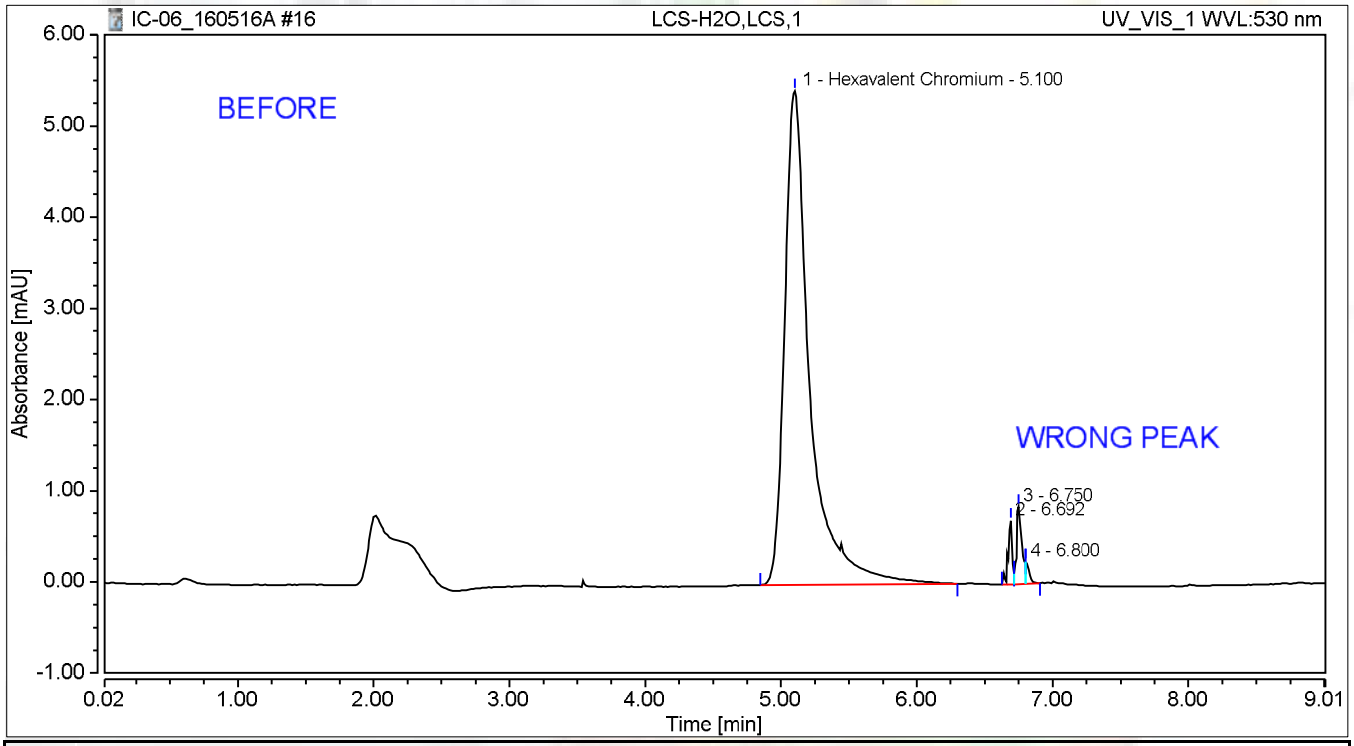
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.168	5.414	94.47	75.19	4.9814
2		6.692	0.023	0.697	1.88	9.68	n.a.
3		6.750	0.037	0.845	3.03	11.74	n.a.
4		6.800	0.008	0.244	0.63	3.39	n.a.
Total:			**1.236**	**7.200**	**100.00**	**100.00**	

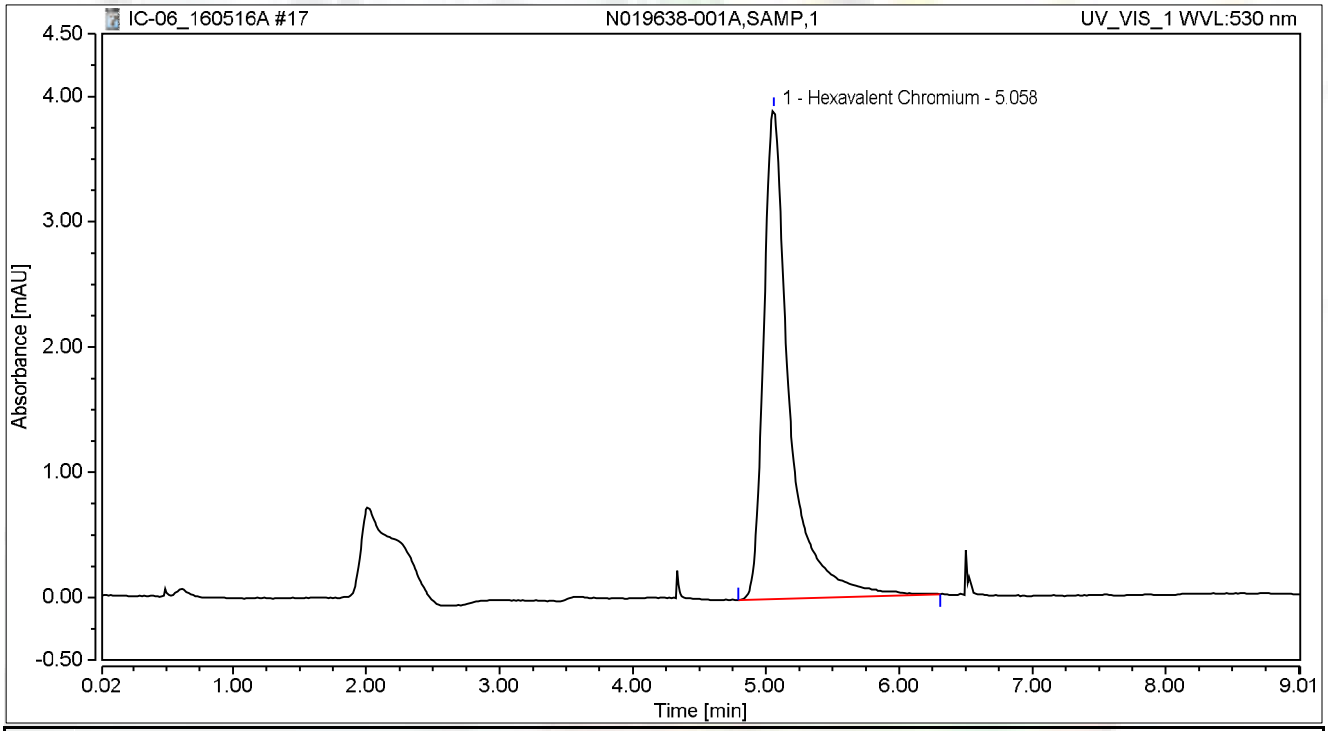
jas 5/17/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019638-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

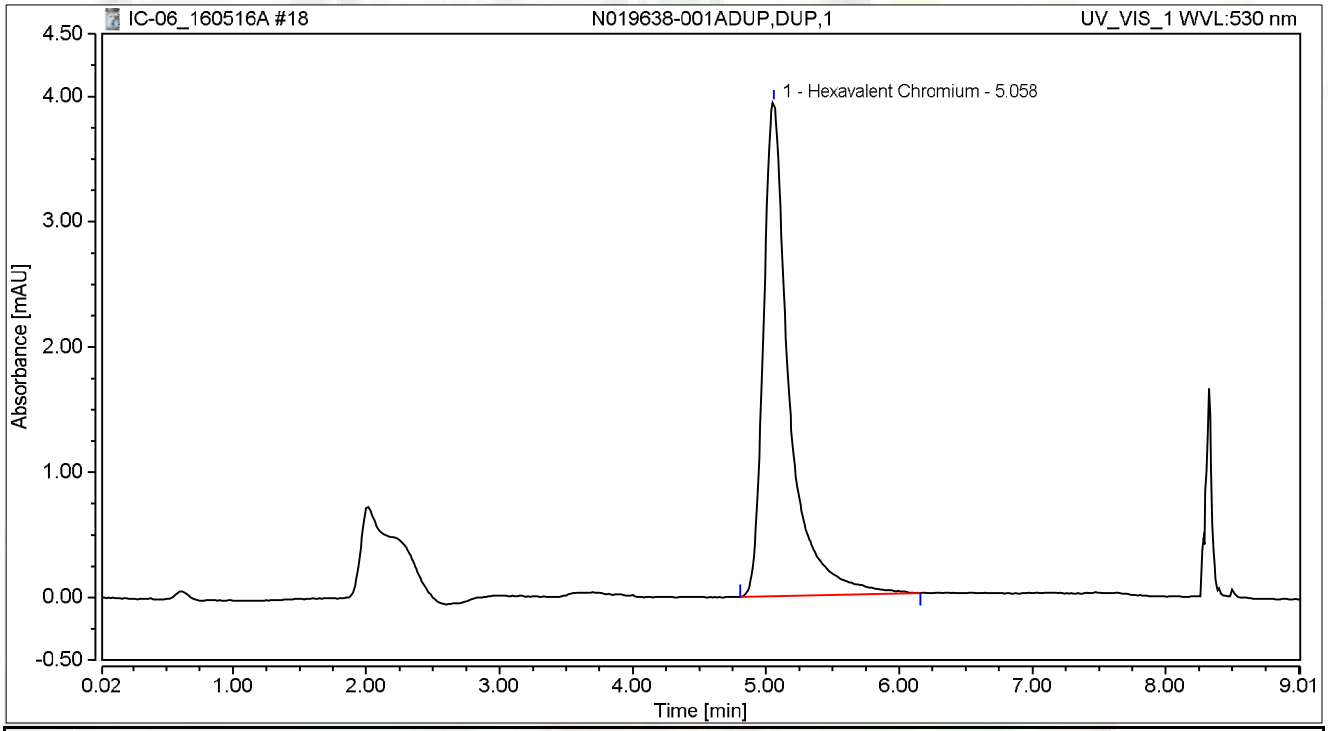
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.058	0.879	3.908	100.00	100.00	3.7447
Total:			**0.879**	**3.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019638-001ADUP,DUP,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

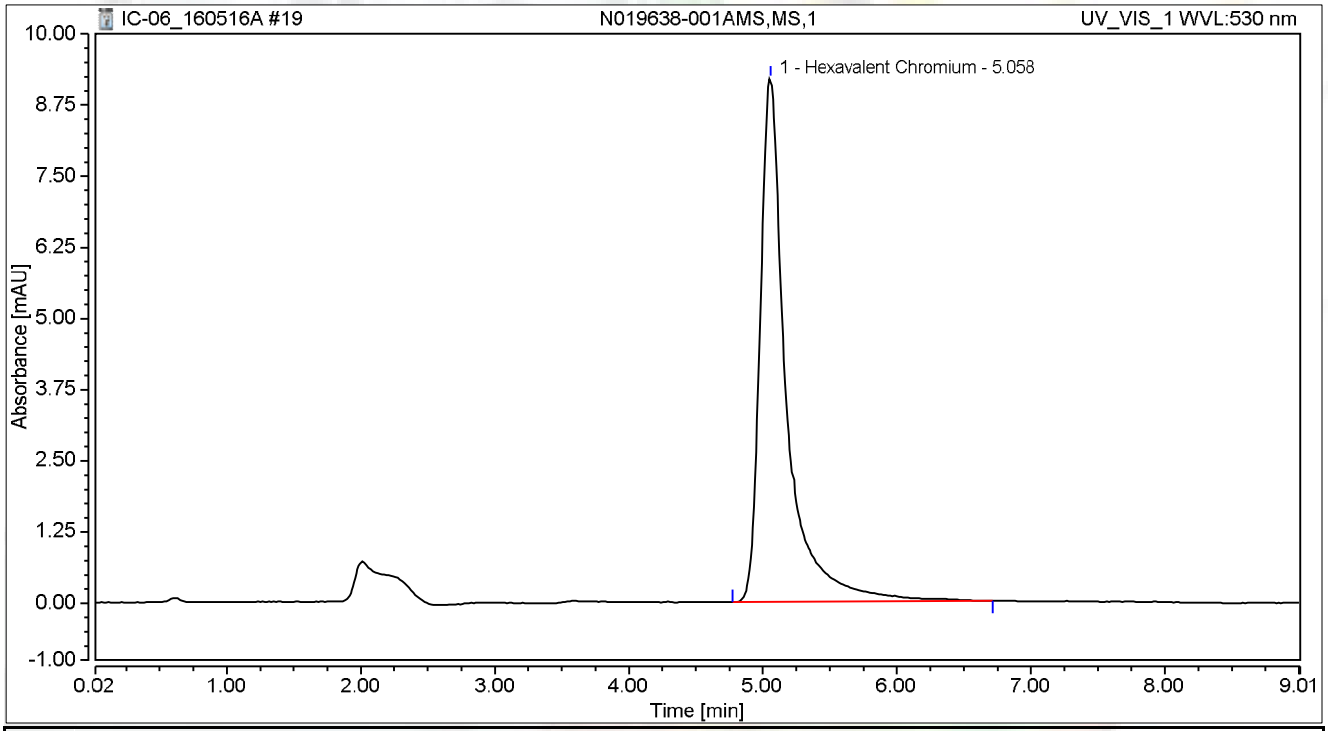
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.058	0.887	3.942	100.00	100.00	3.7792
Total:			**0.887**	**3.942**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019638-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

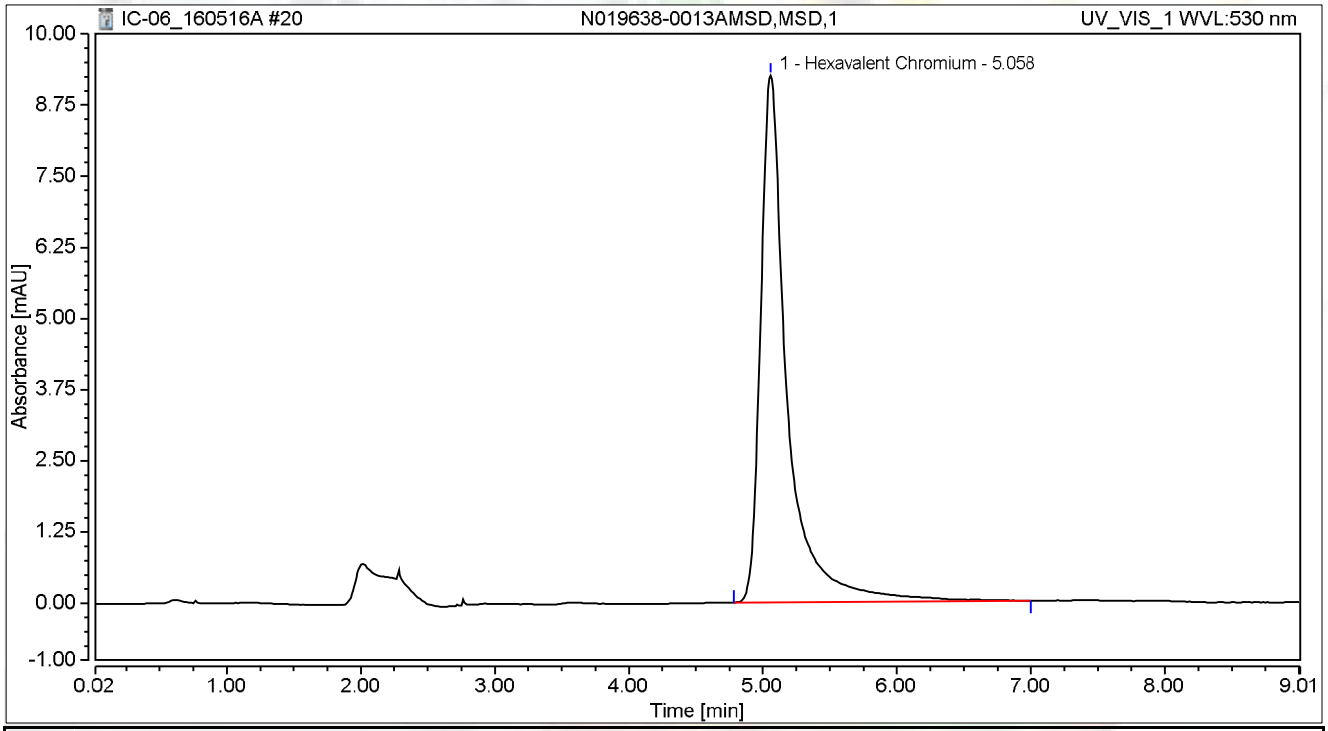
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.058	2.098	9.187	100.00	100.00	8.9640
Total:			**2.098**	**9.187**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details N019638-001AMSD

Injection Name:	~~N019638-0013AMSD~~,MSD,1	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.058	2.142	9.256	100.00	100.00	9.1512
Total:			**2.142**	**9.256**	**100.00**	**100.00**	

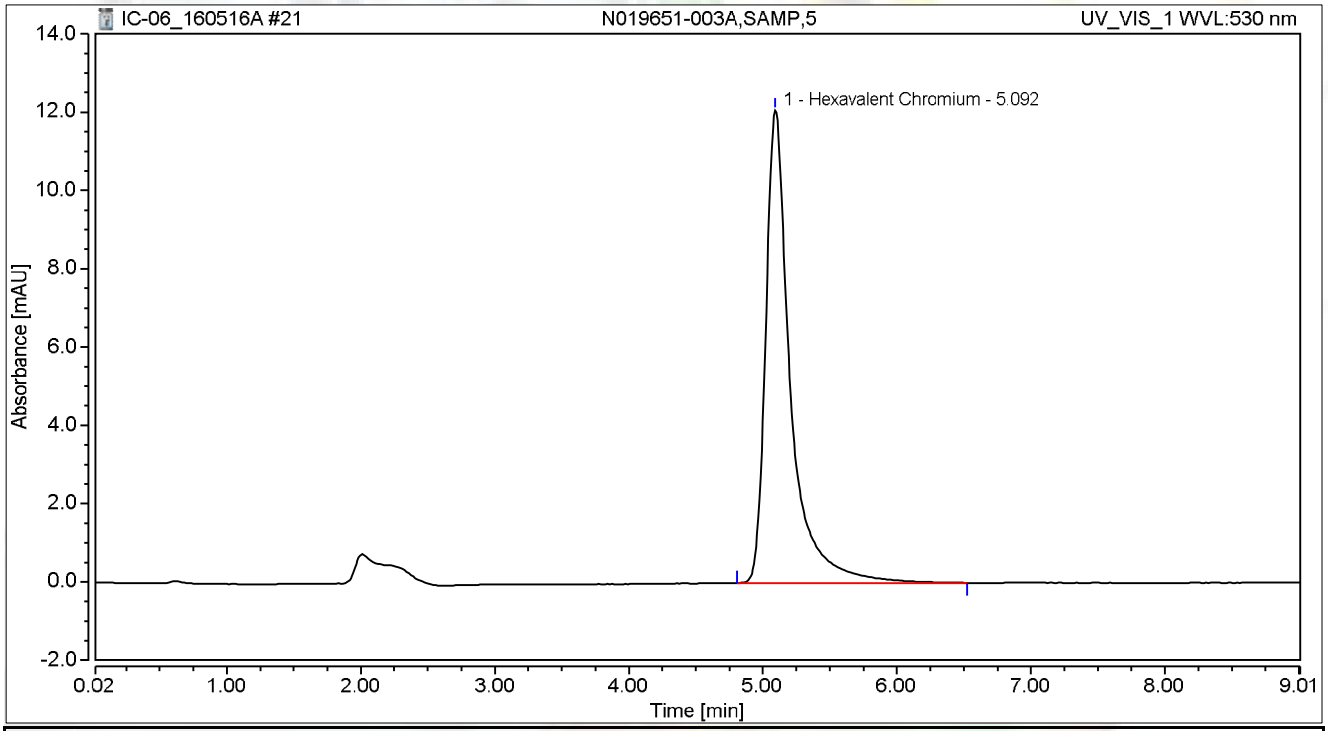
5/17/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019651-003A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

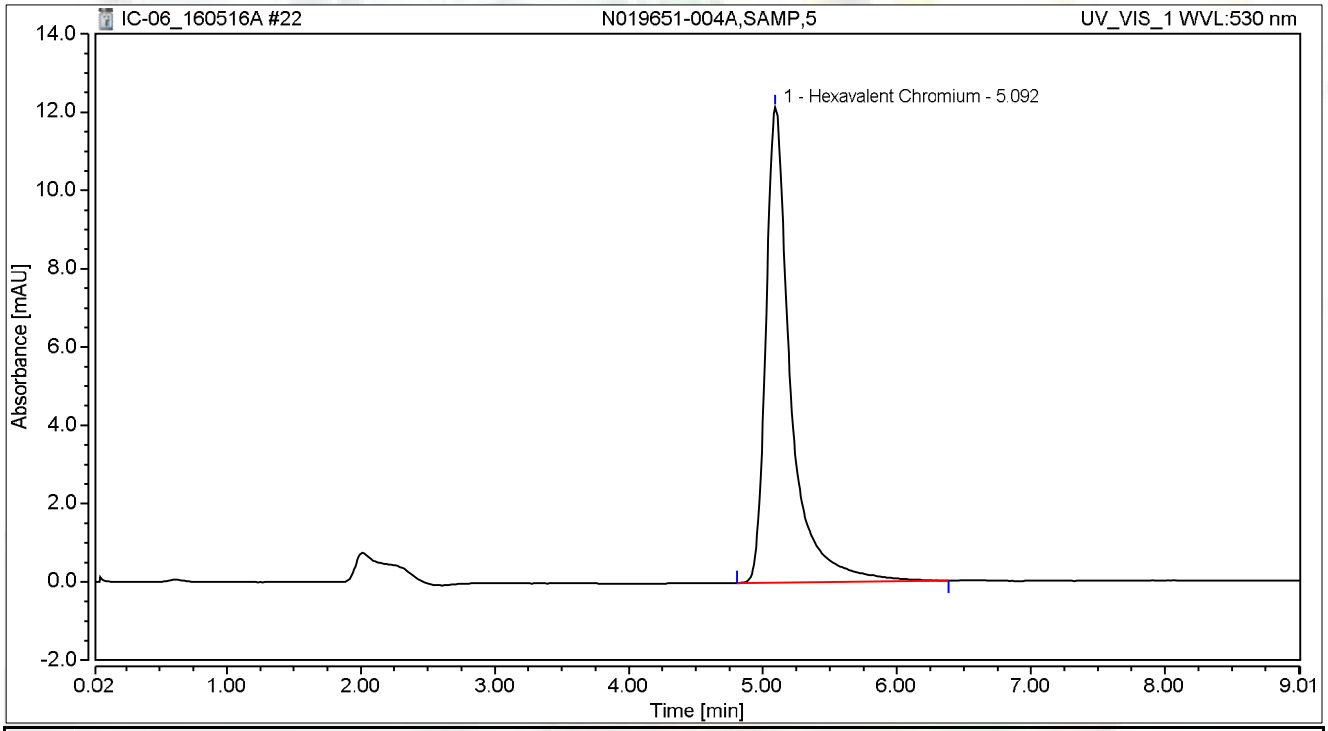
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	2.592	12.068	100.00	100.00	11.0809
Total:			**2.592**	**12.068**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019651-004A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

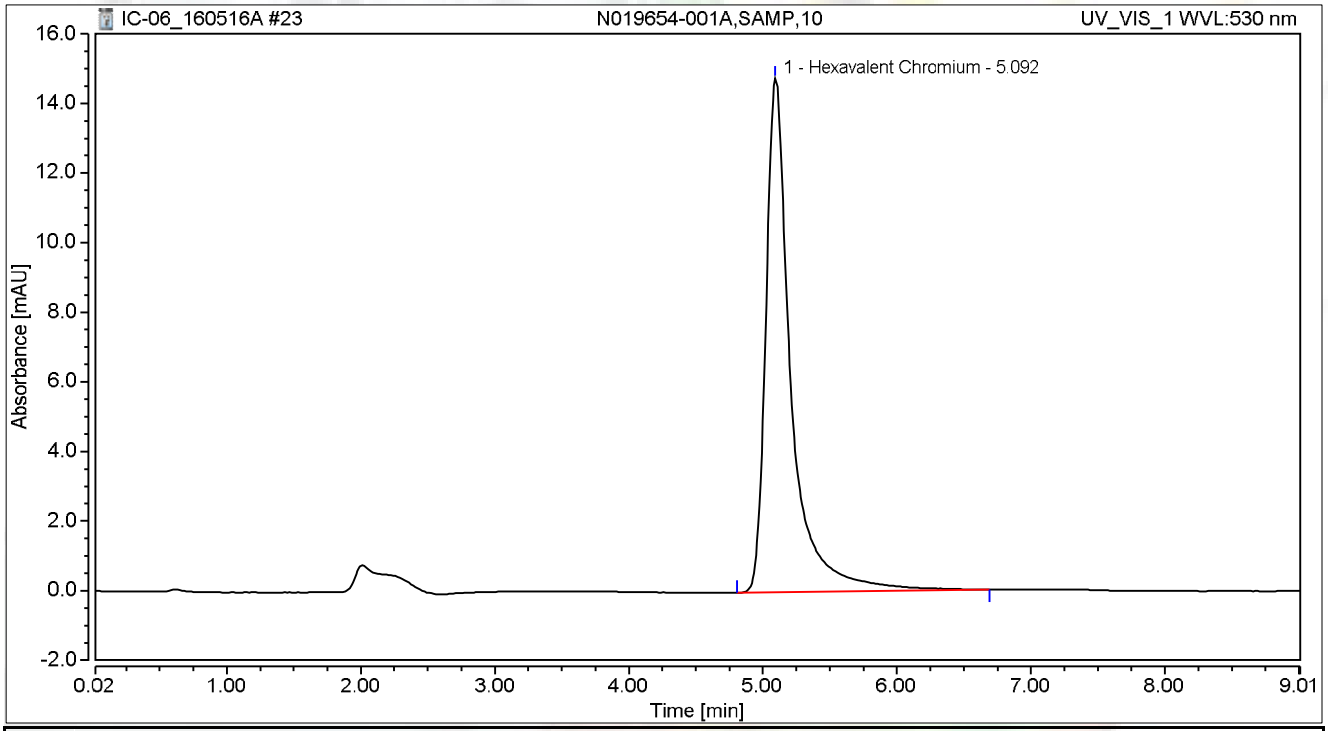
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	2.604	12.139	100.00	100.00	11.1321
Total:			**2.604**	**12.139**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-001A,SAMP,10**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 12:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

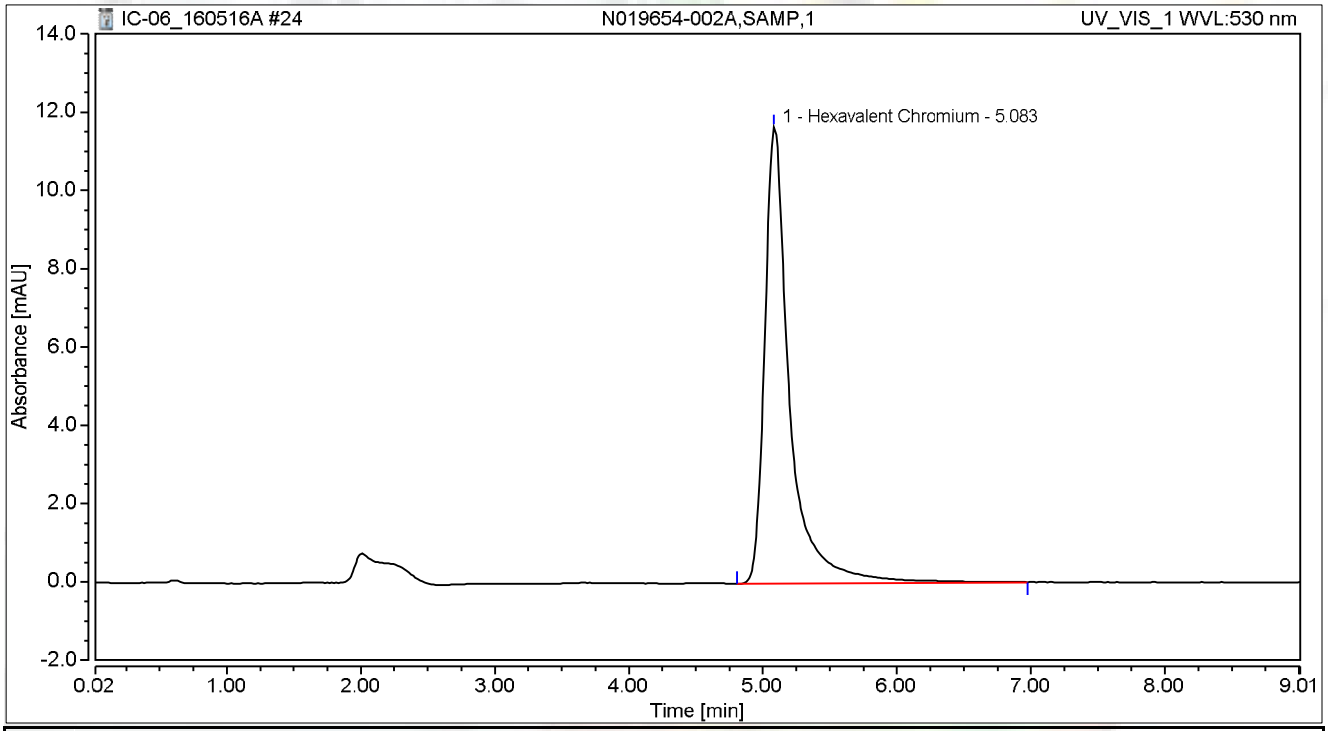
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	3.212	14.756	100.00	100.00	13.7338
Total:			**3.212**	**14.756**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-002A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 13:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

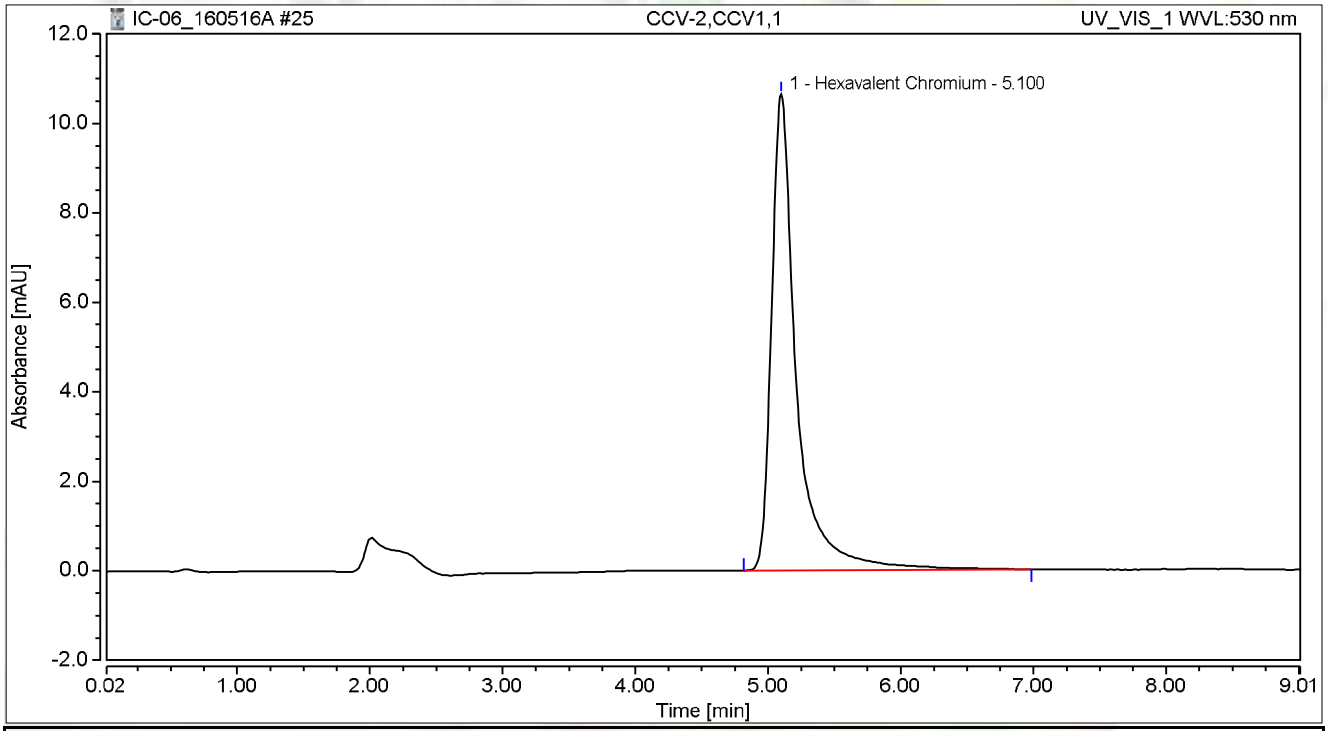
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	2.532	11.662	100.00	100.00	10.8238
Total:			**2.532**	**11.662**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 13:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

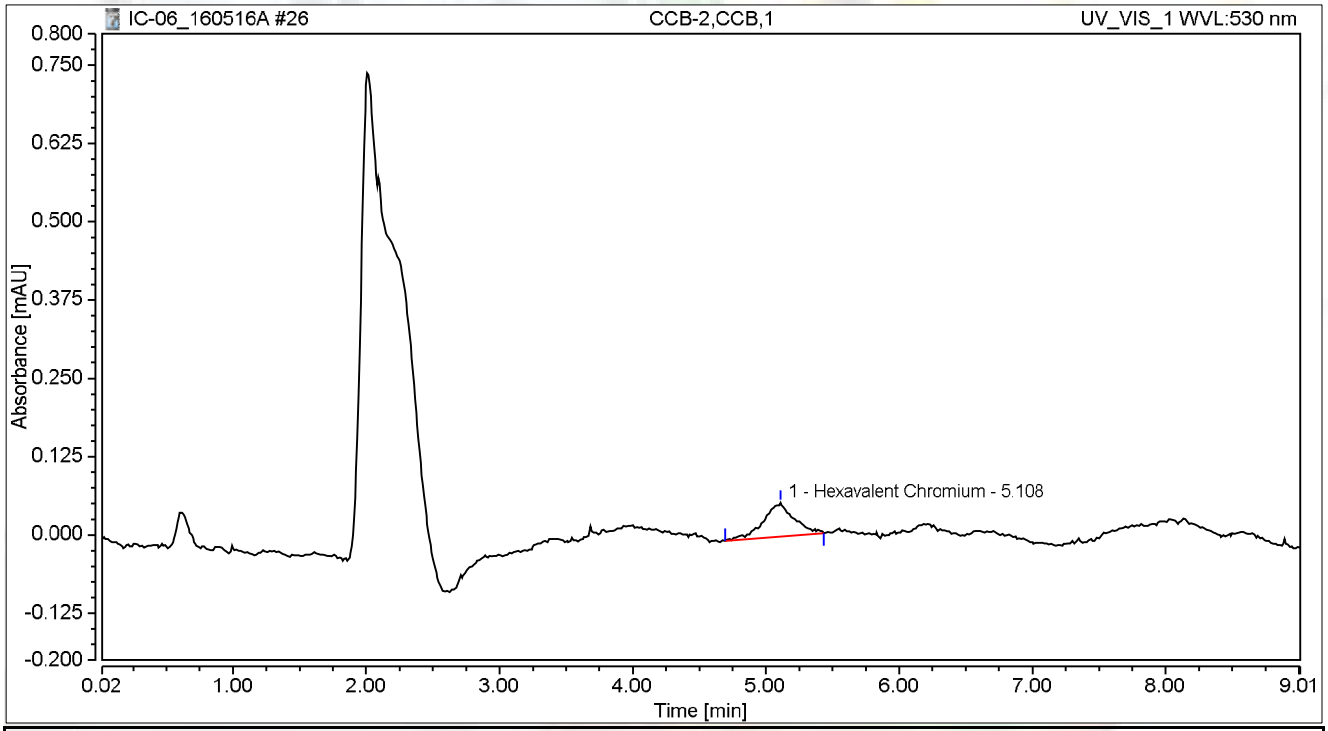
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.339	10.649	100.00	100.00	9.9942
Total:			**2.339**	**10.649**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

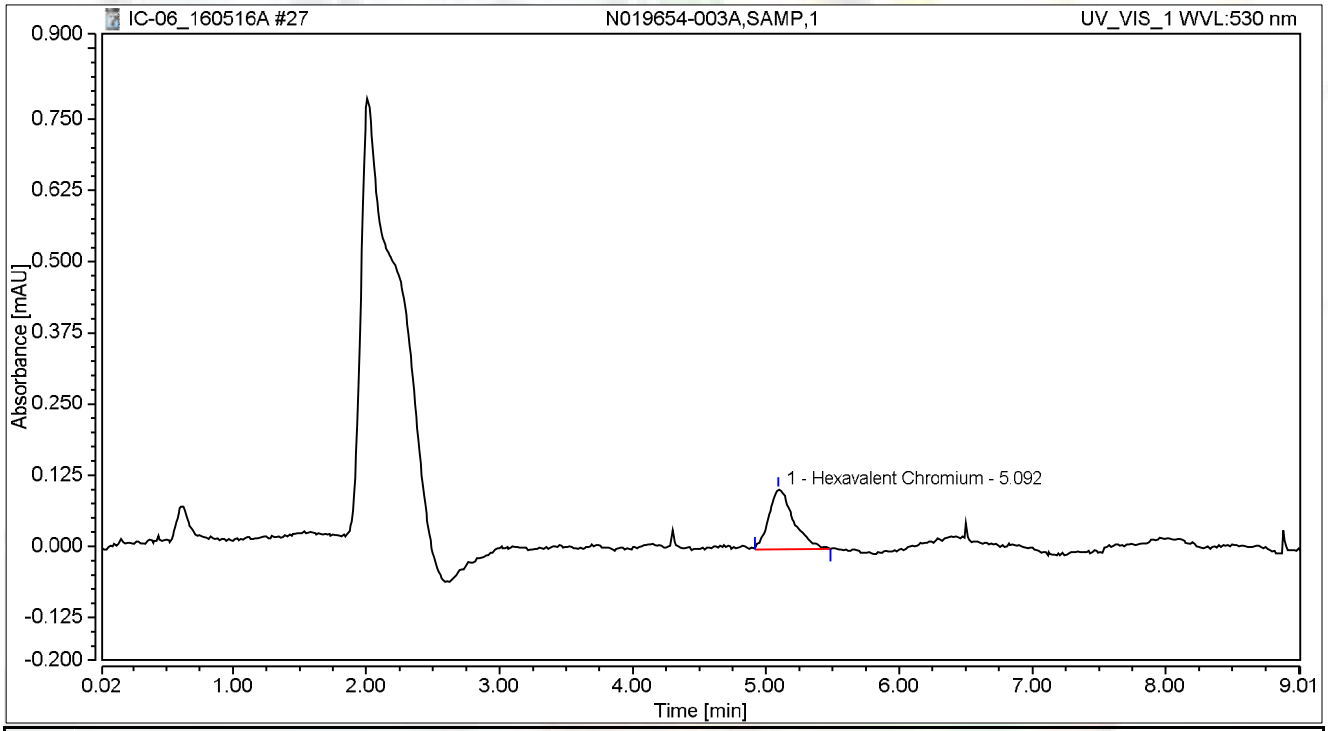
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.015	0.054	100.00	100.00	0.0443
Total:			**0.015**	**0.054**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

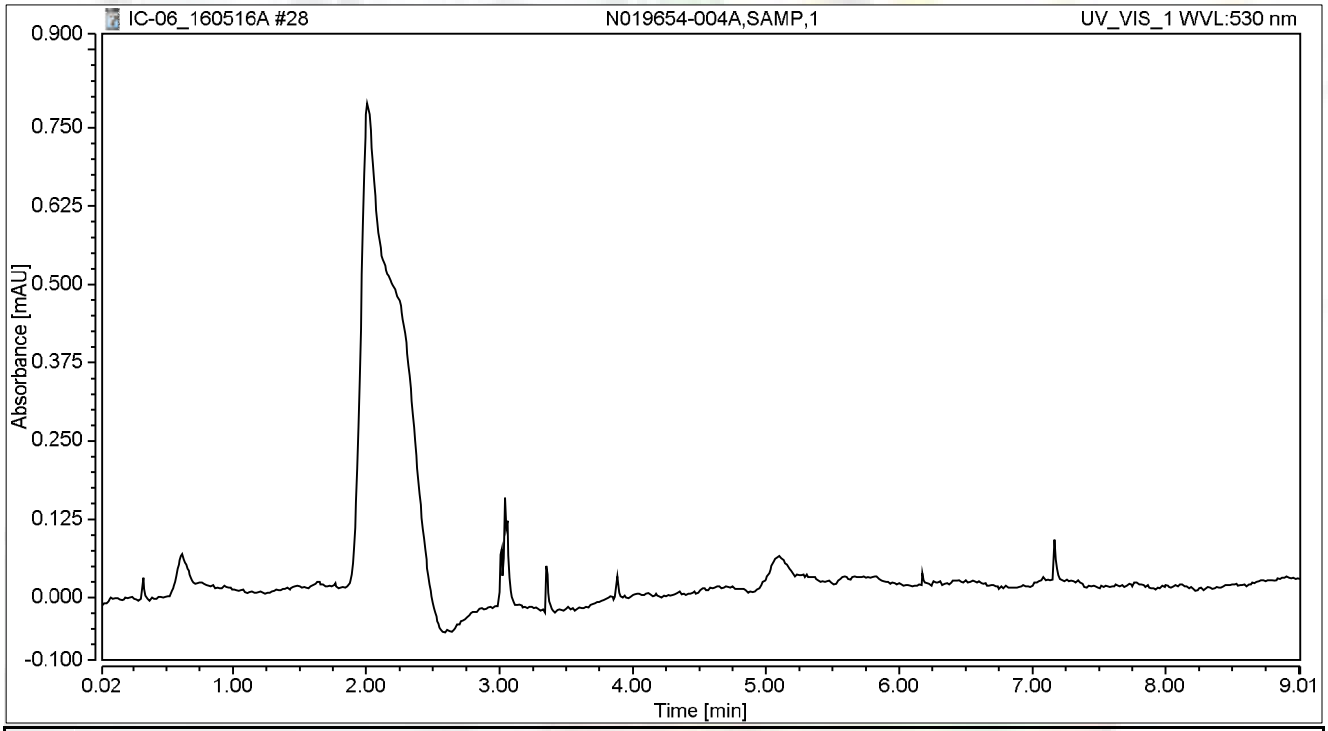
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.023	0.105	100.00	100.00	0.0786
Total:			**0.023**	**0.105**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-004A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

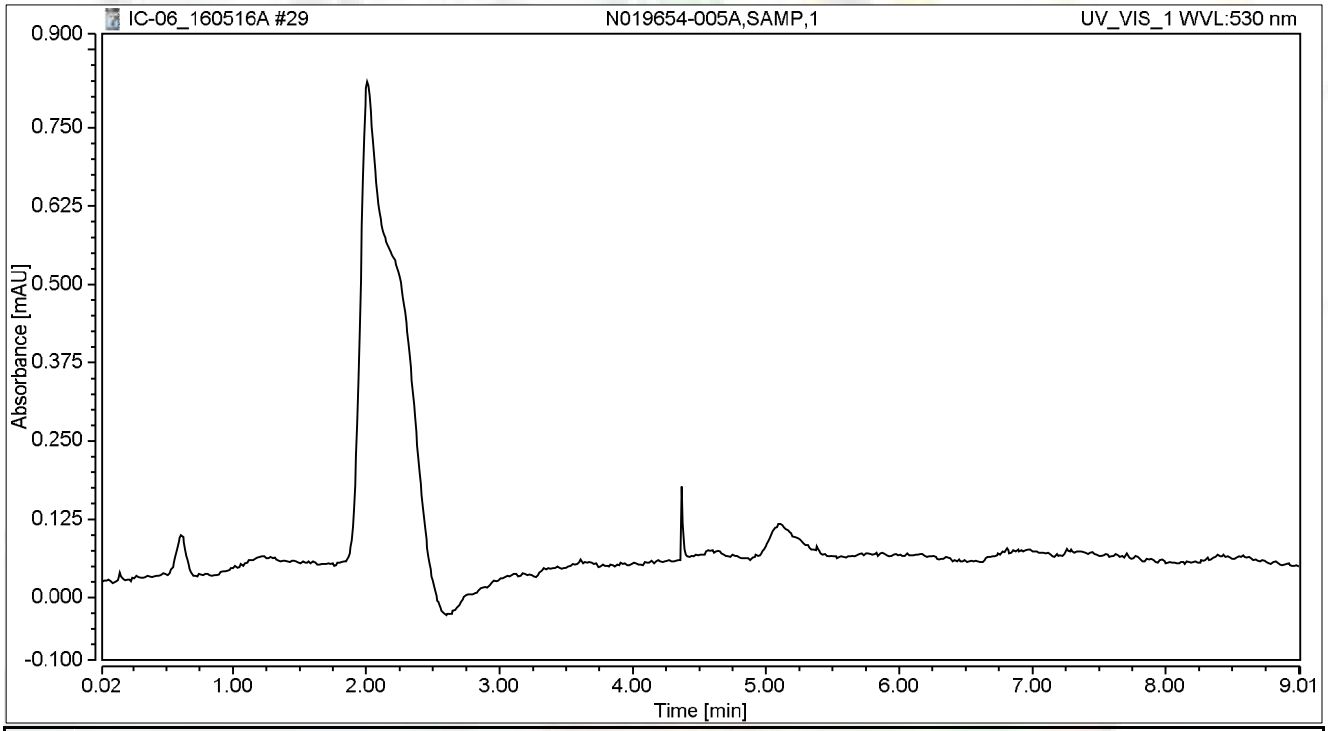
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-005A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 13:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

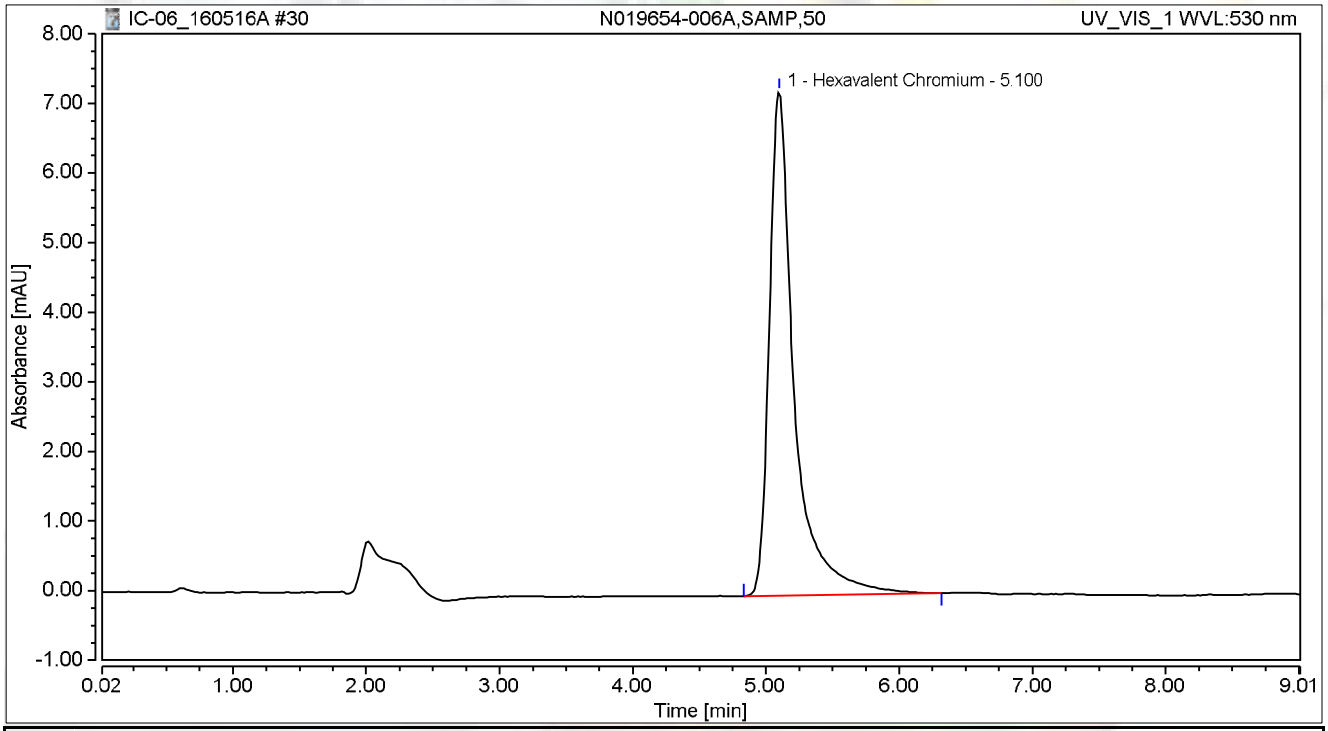
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-006A,SAMP,50**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

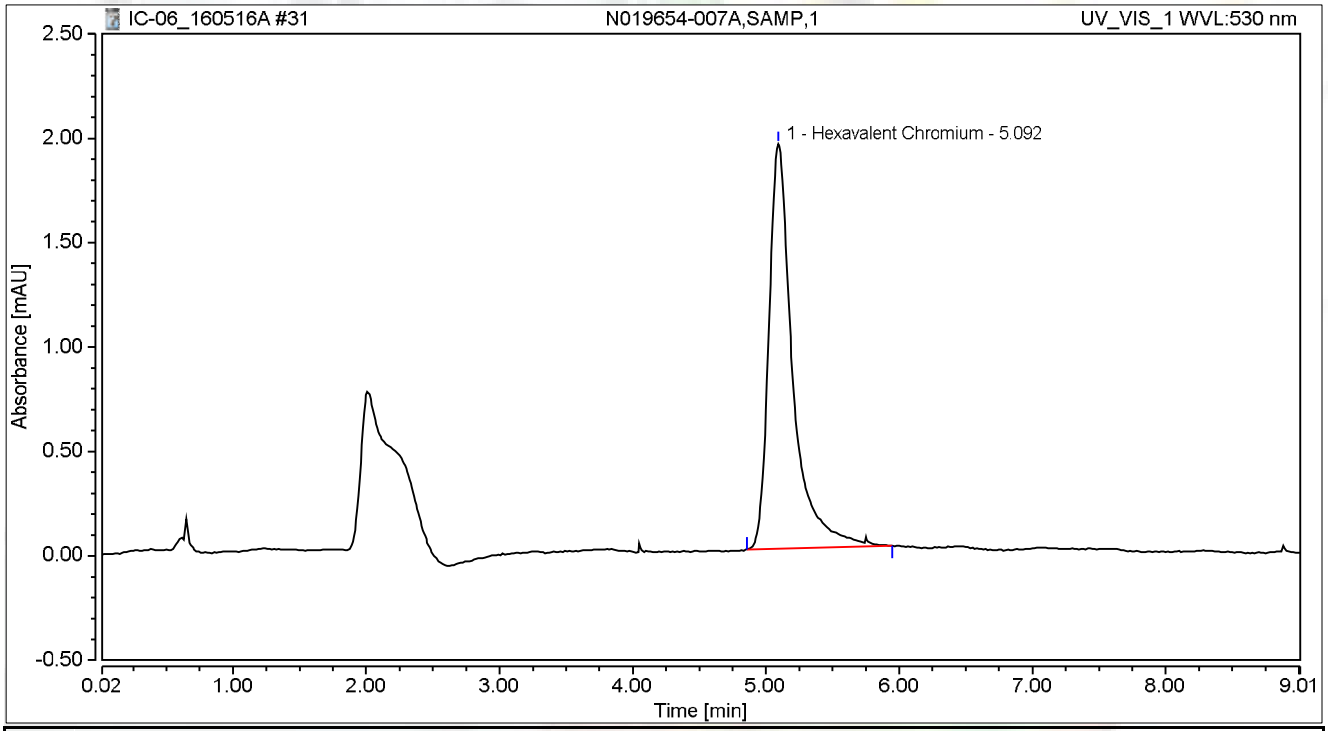
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.574	7.252	100.00	100.00	6.7221
Total:			**1.574**	**7.252**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-007A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

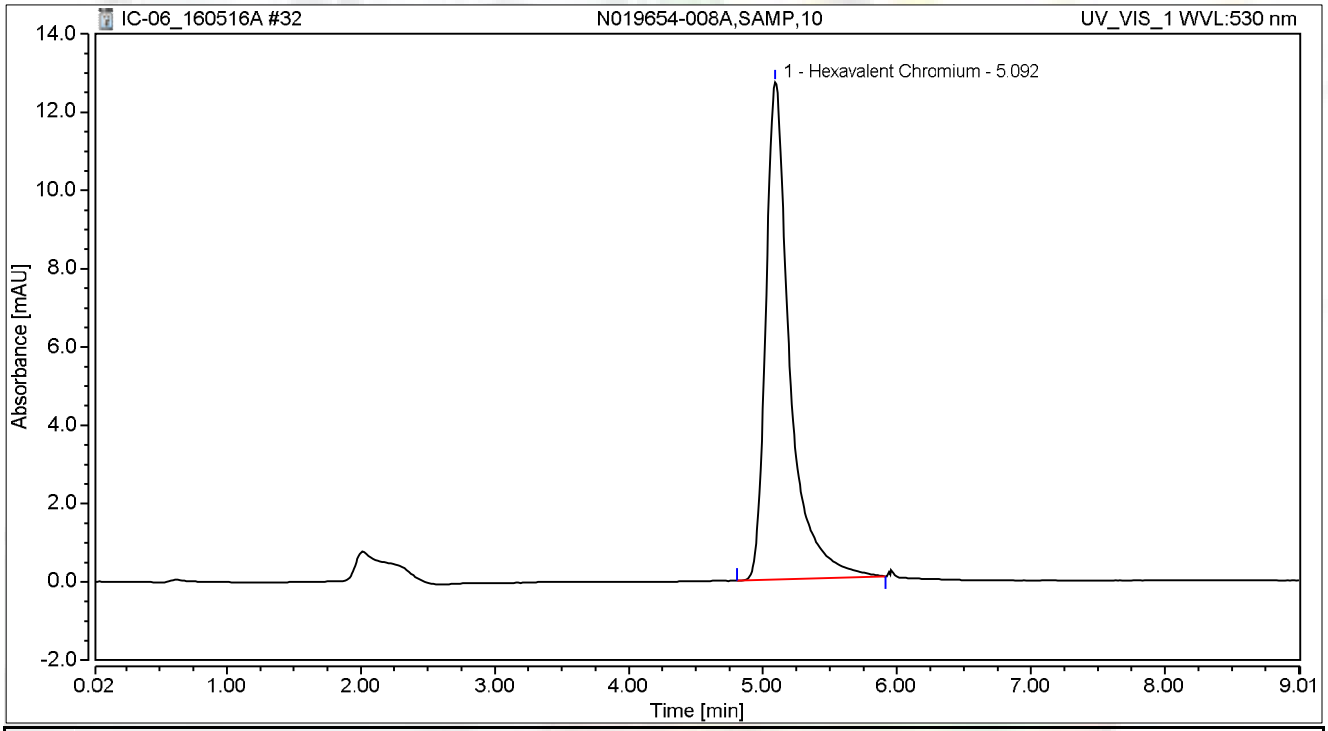
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.405	1.939	100.00	100.00	1.7139
Total:			**0.405**	**1.939**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-008A,SAMP,10**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

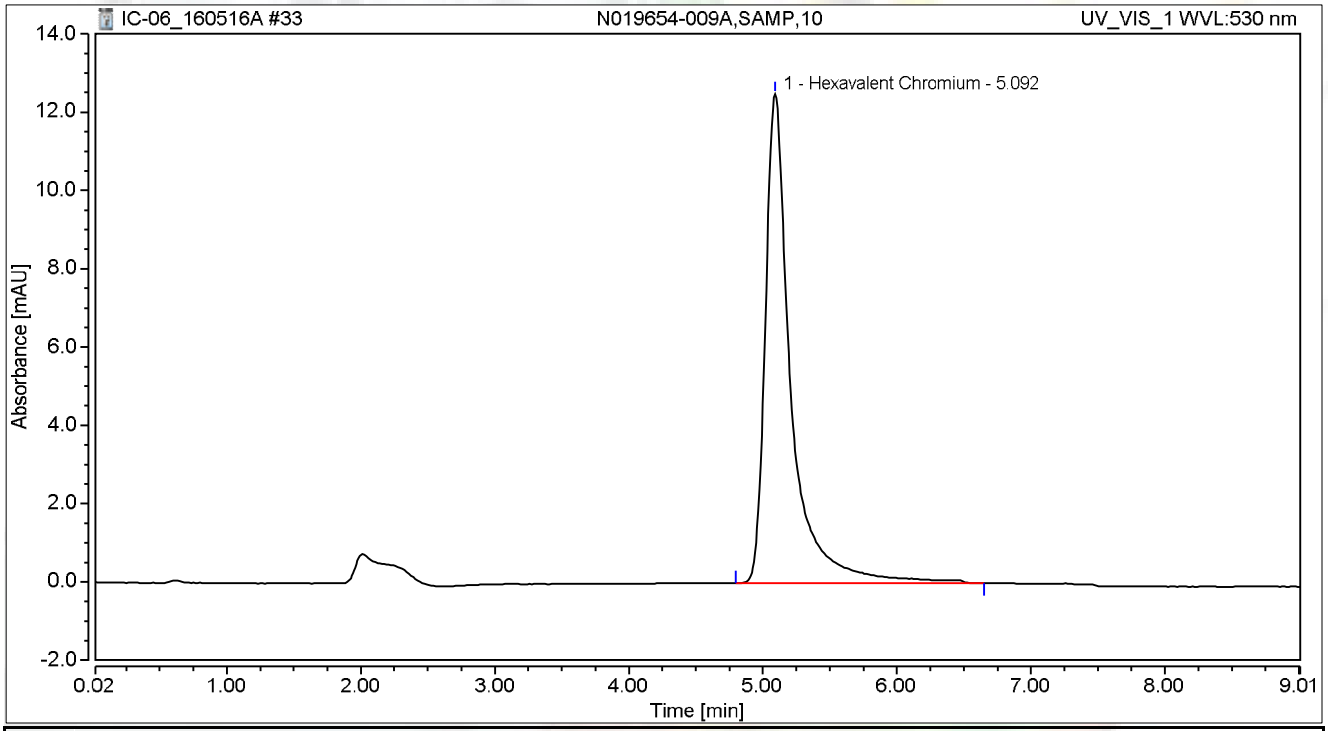
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	2.646	12.707	100.00	100.00	11.3113
Total:			**2.646**	**12.707**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-009A,SAMP,10**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

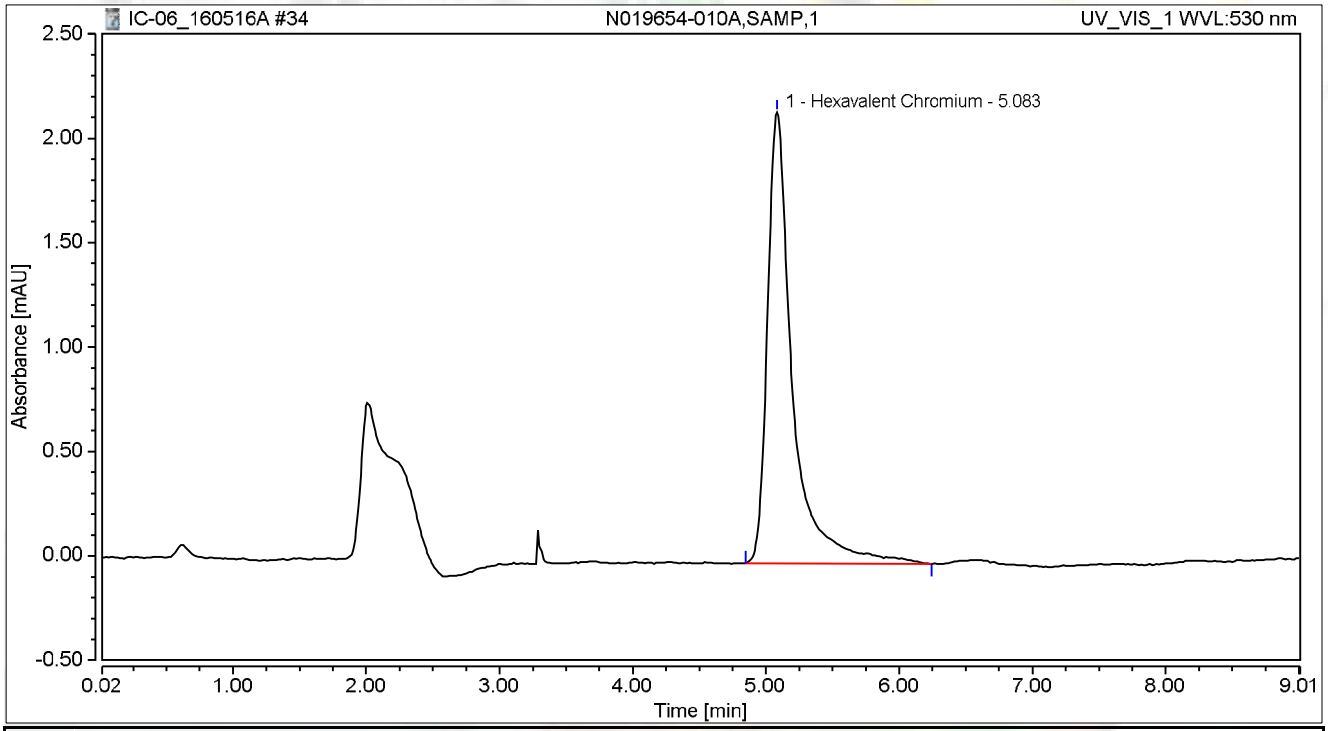
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	2.781	12.495	100.00	100.00	11.8874
Total:			**2.781**	**12.495**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-010A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

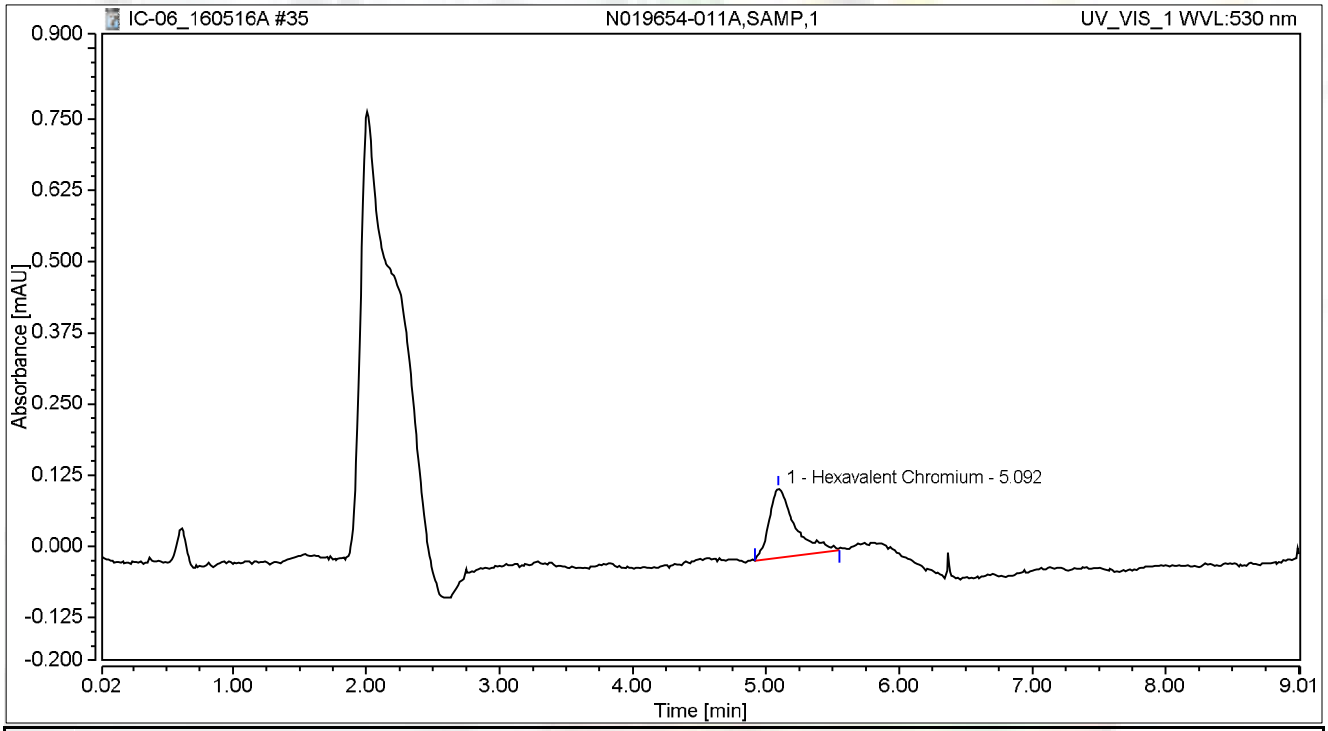
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	0.472	2.159	100.00	100.00	2.0020
Total:			**0.472**	**2.159**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-011A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 14:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

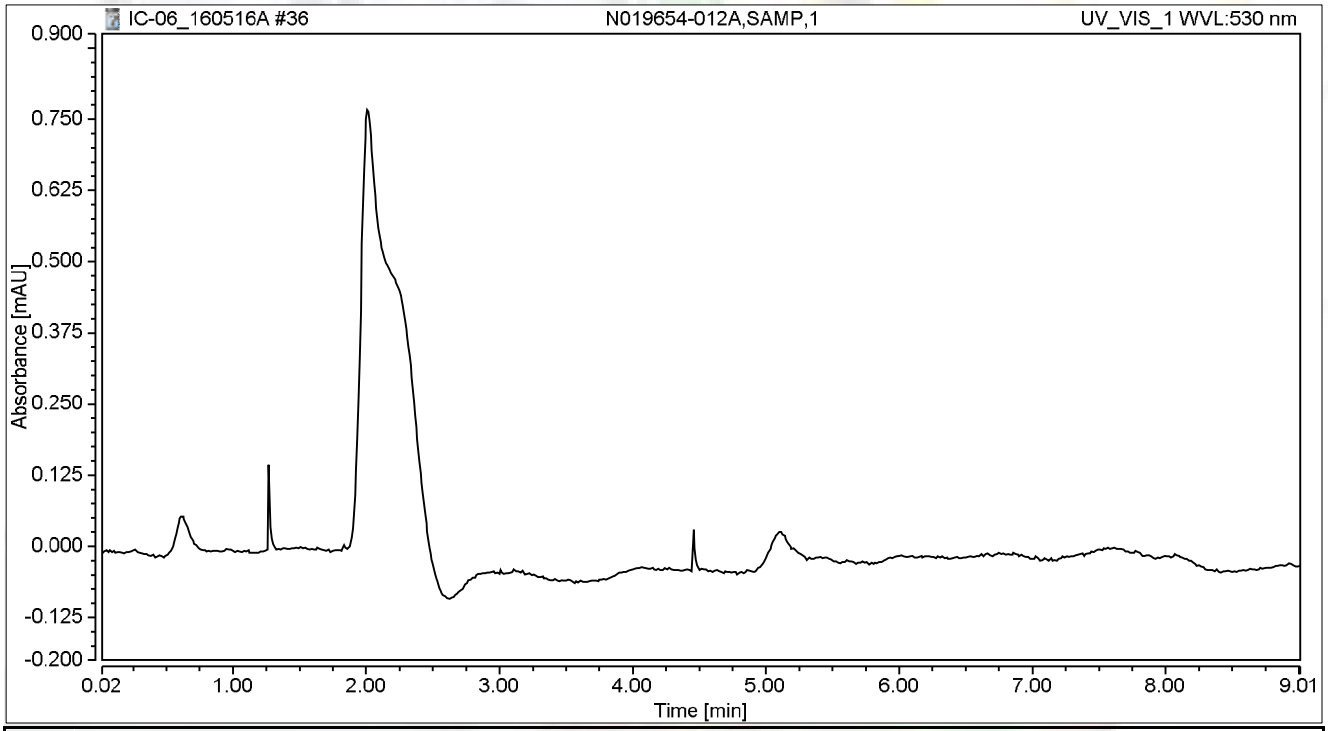
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.027	0.122	100.00	100.00	0.0998
Total:			**0.027**	**0.122**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-012A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 15:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

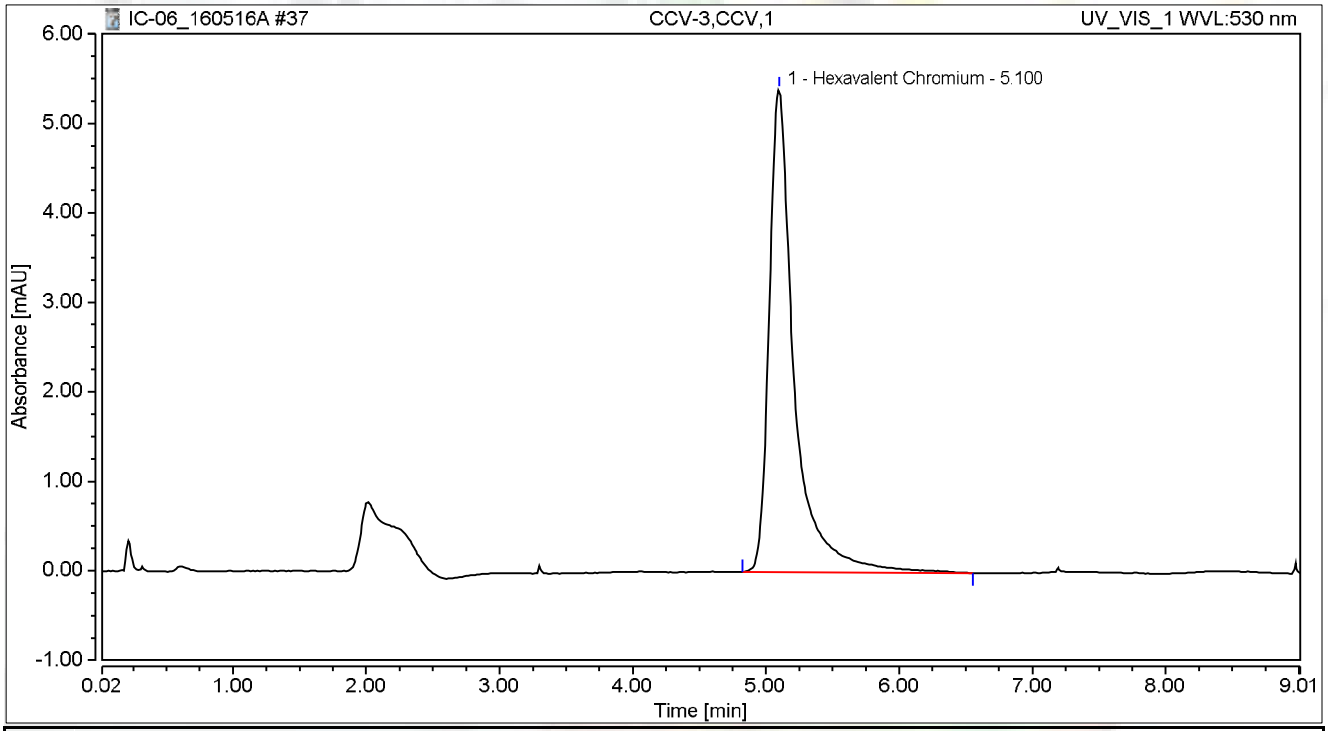
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 15:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

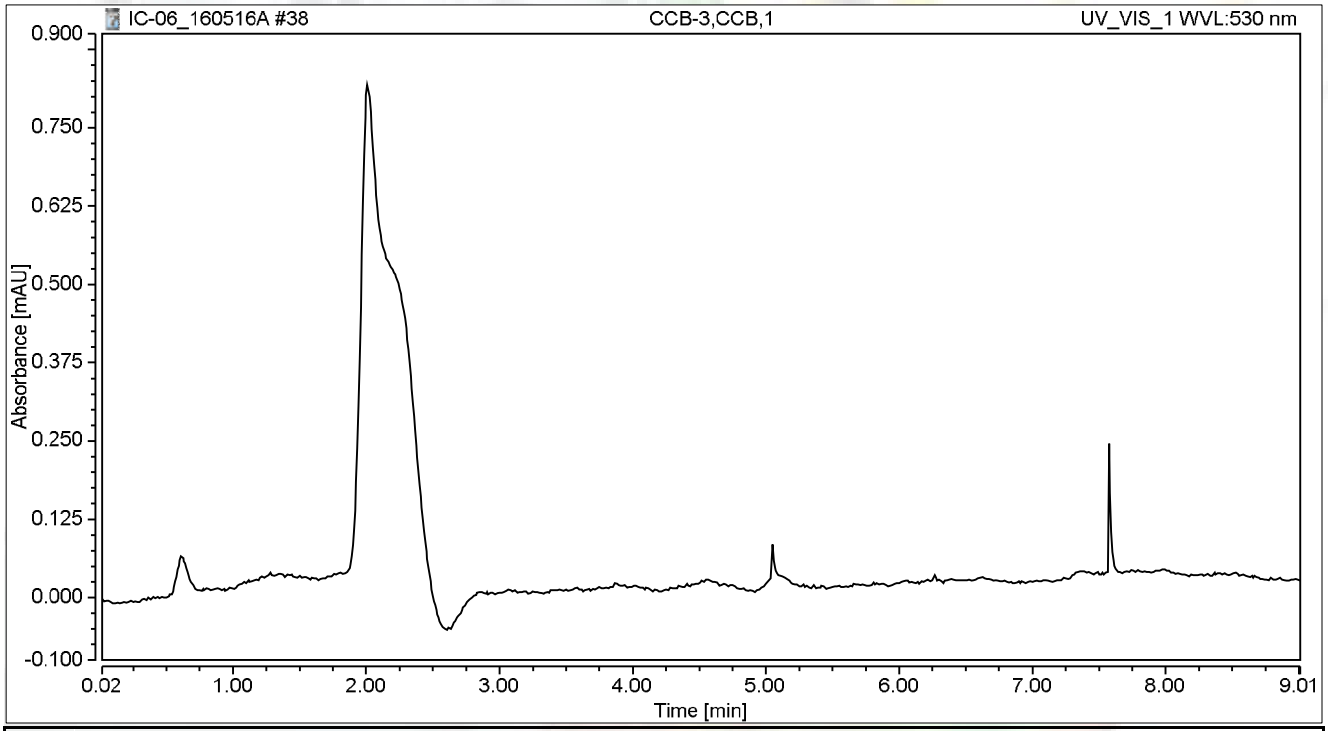
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.181	5.394	100.00	100.00	5.0399
Total:			**1.181**	**5.394**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

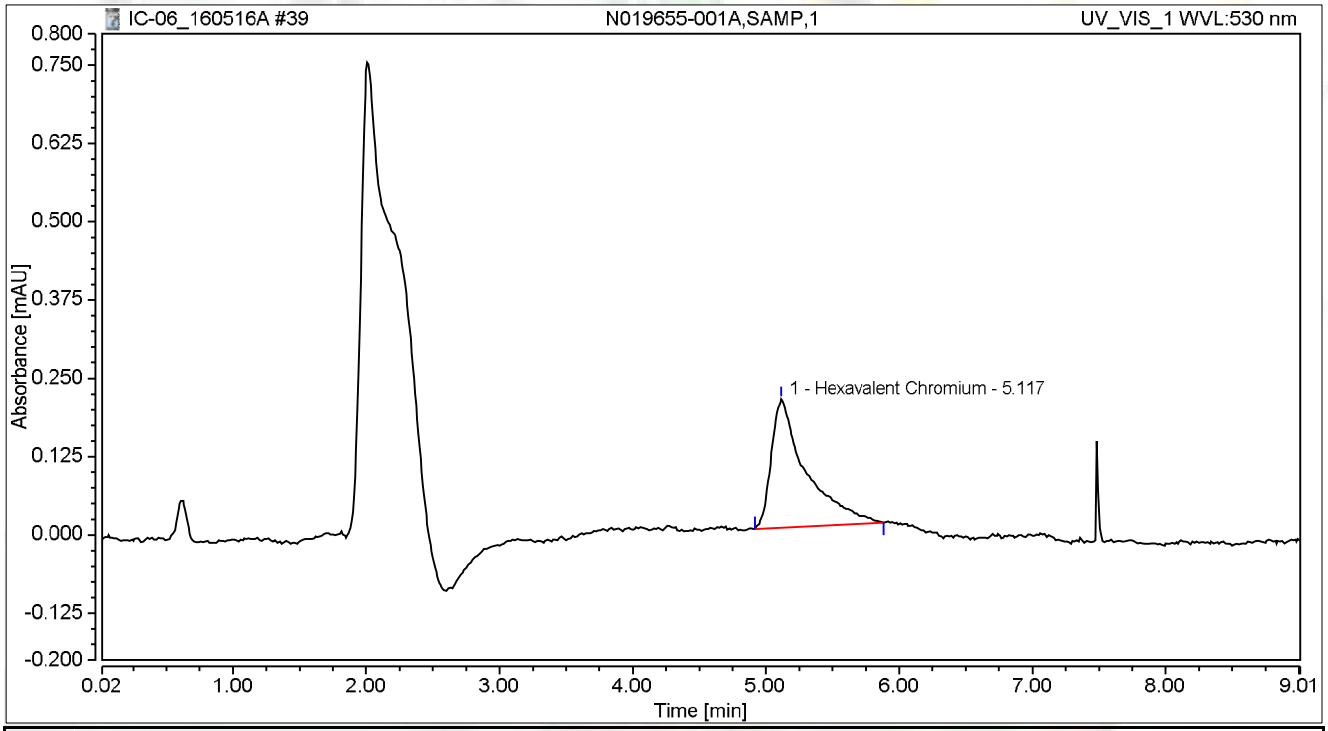
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019655-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 15:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

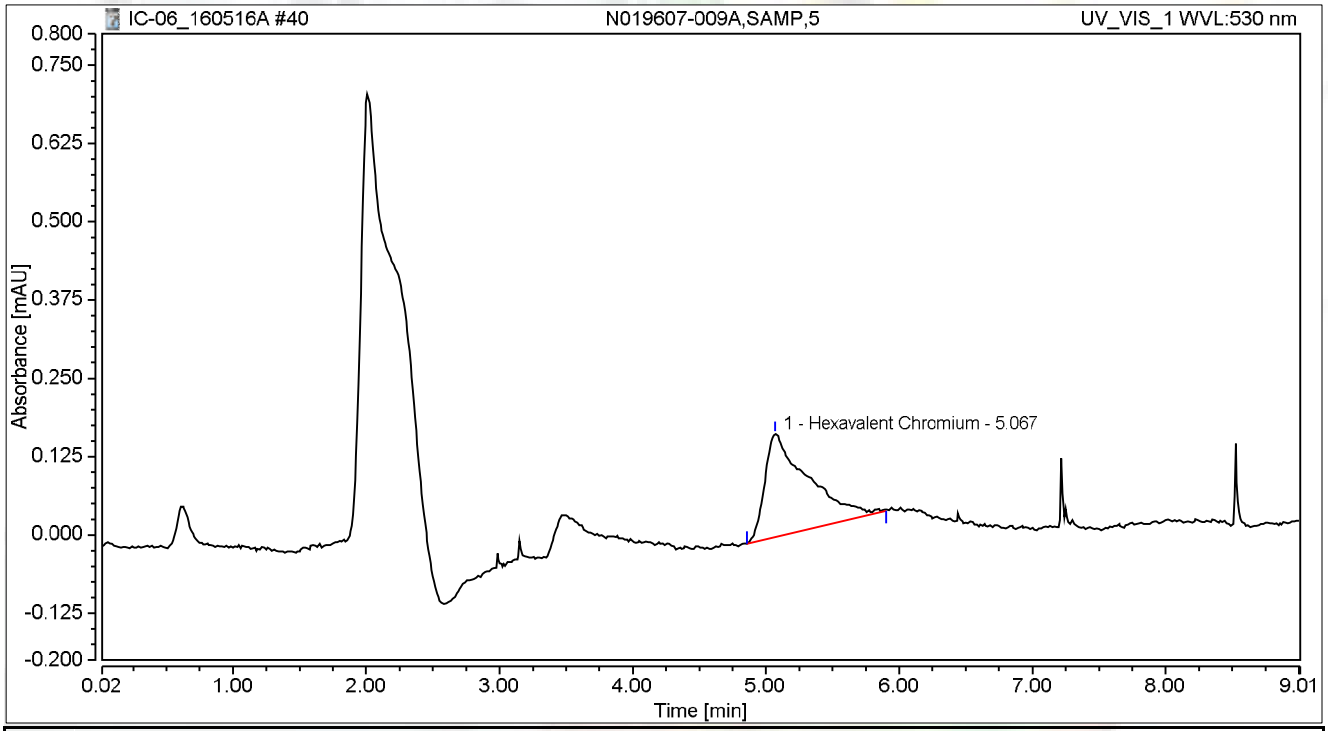
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.062	0.205	100.00	100.00	0.2483
Total:			**0.062**	**0.205**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

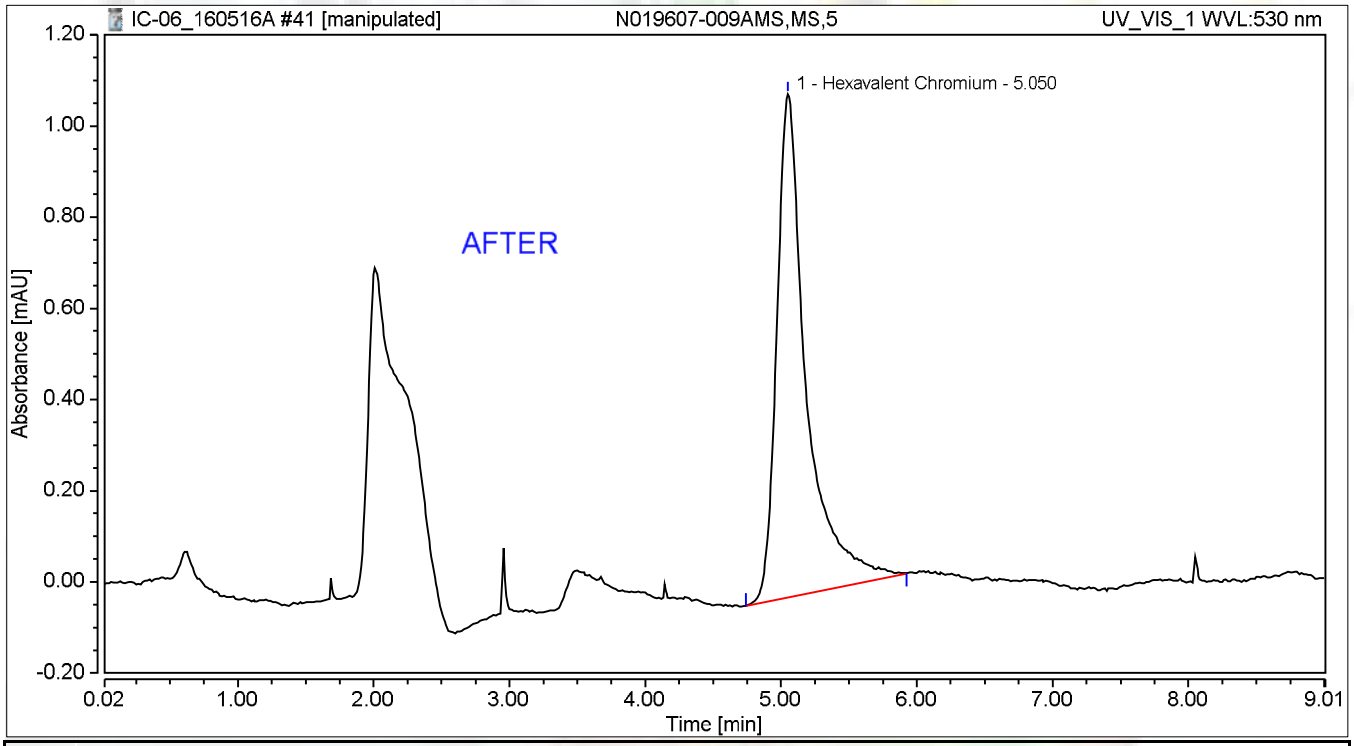
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.067	0.062	0.165	100.00	100.00	0.2472
Total:			**0.062**	**0.165**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.050	0.279	1.104	100.00	100.00	1.1765
Total:			**0.279**	**1.104**	**100.00**	**100.00**	

5/17/2016

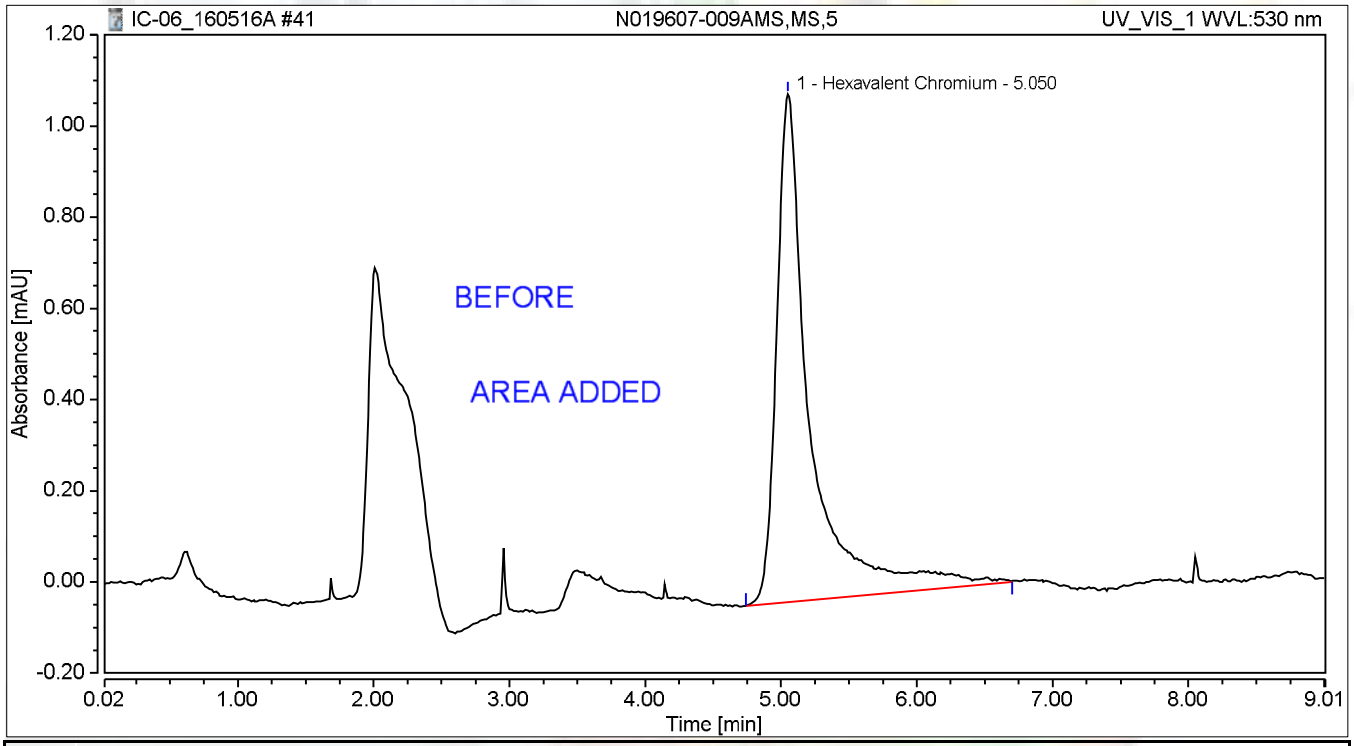
5/19/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.050	0.320	1.114	100.00	100.00	1.3509
Total:			**0.320**	**1.114**	**100.00**	**100.00**	

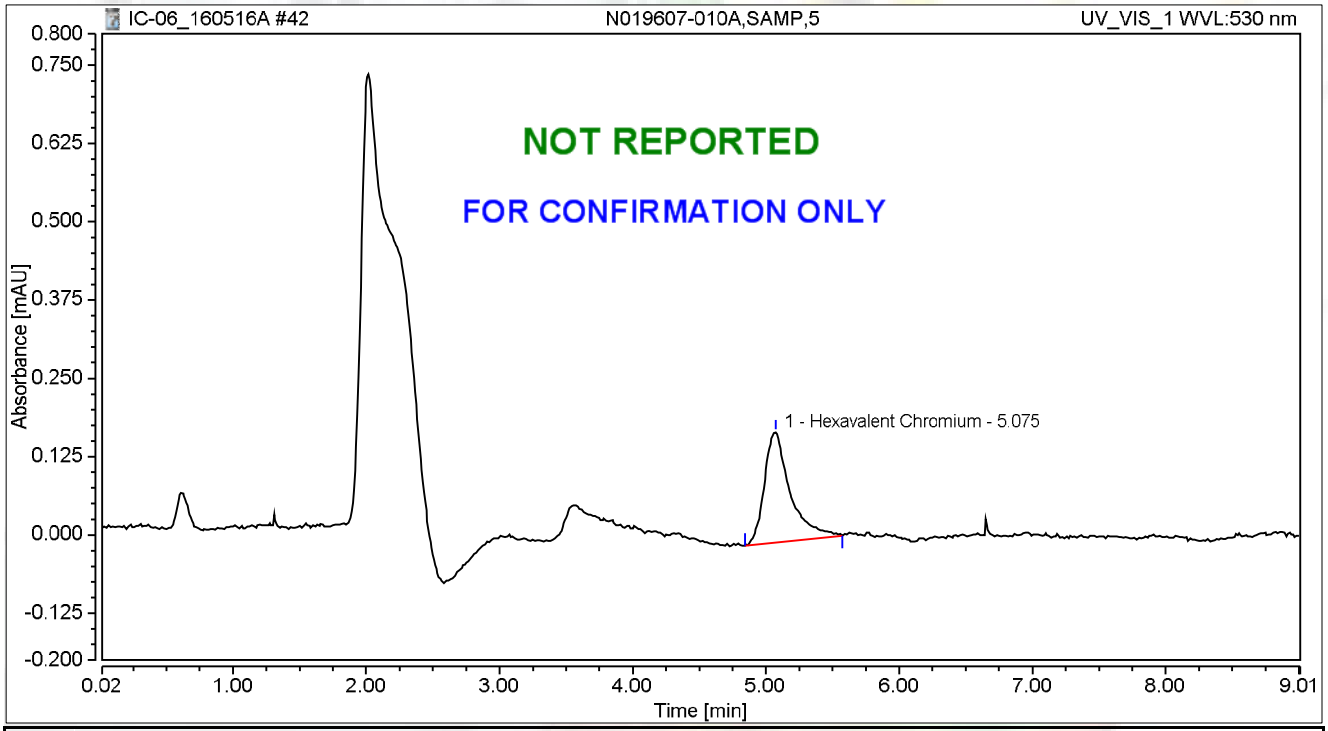
jas 5/17/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

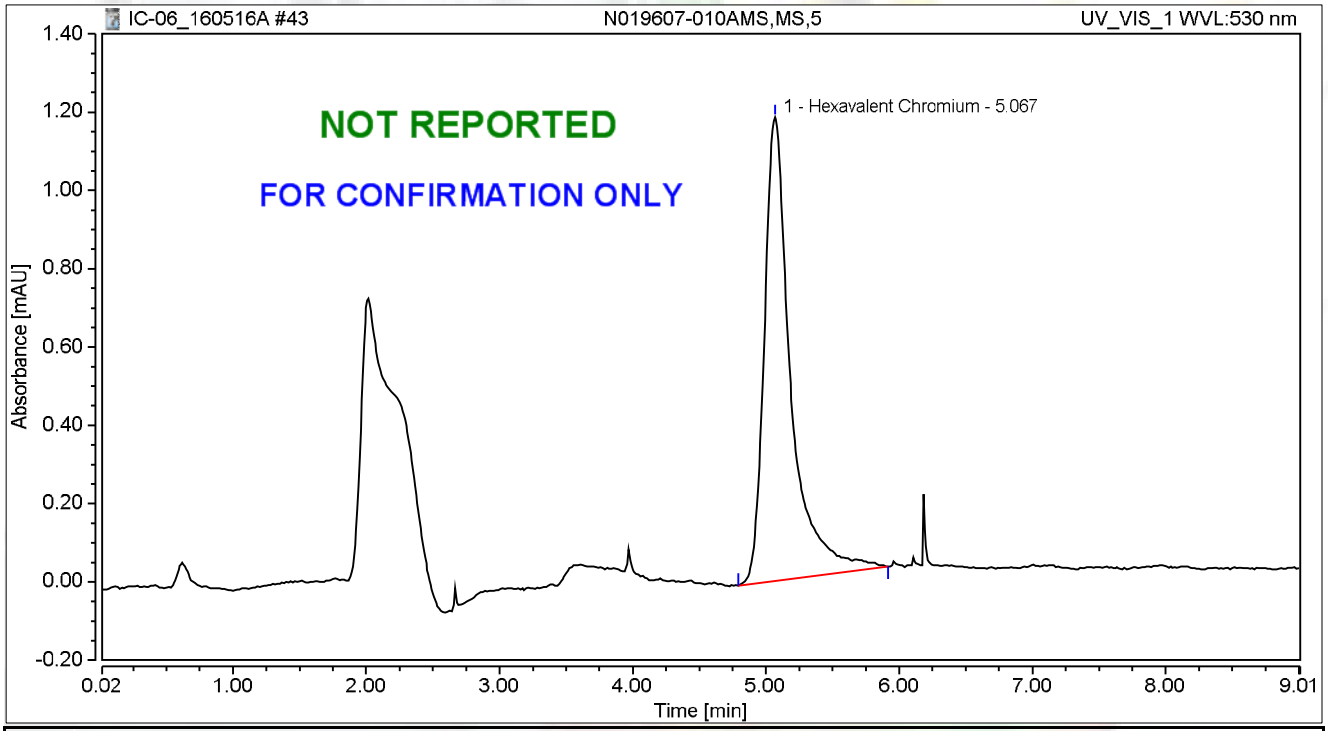
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.075	0.040	0.177	100.00	100.00	0.1532
Total:			**0.040**	**0.177**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

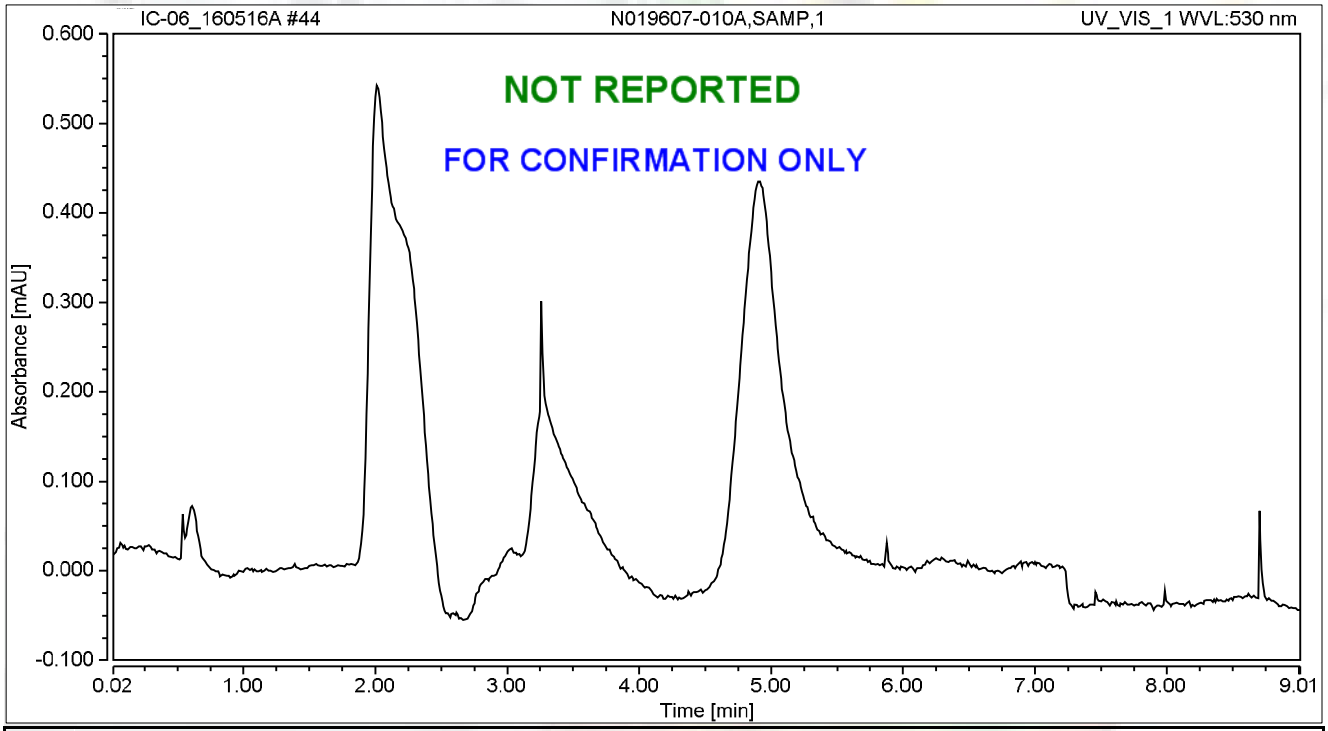
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.067	0.273	1.184	100.00	100.00	1.1504
Total:			**0.273**	**1.184**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

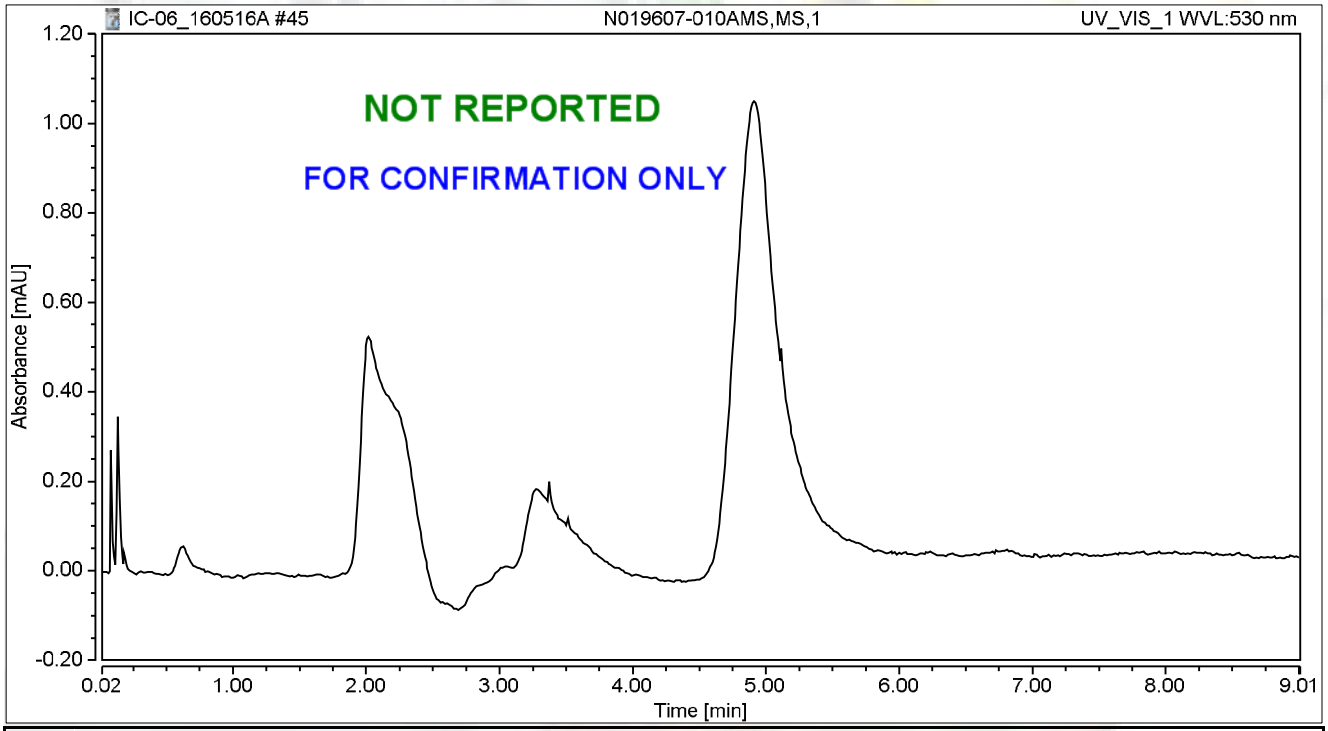
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

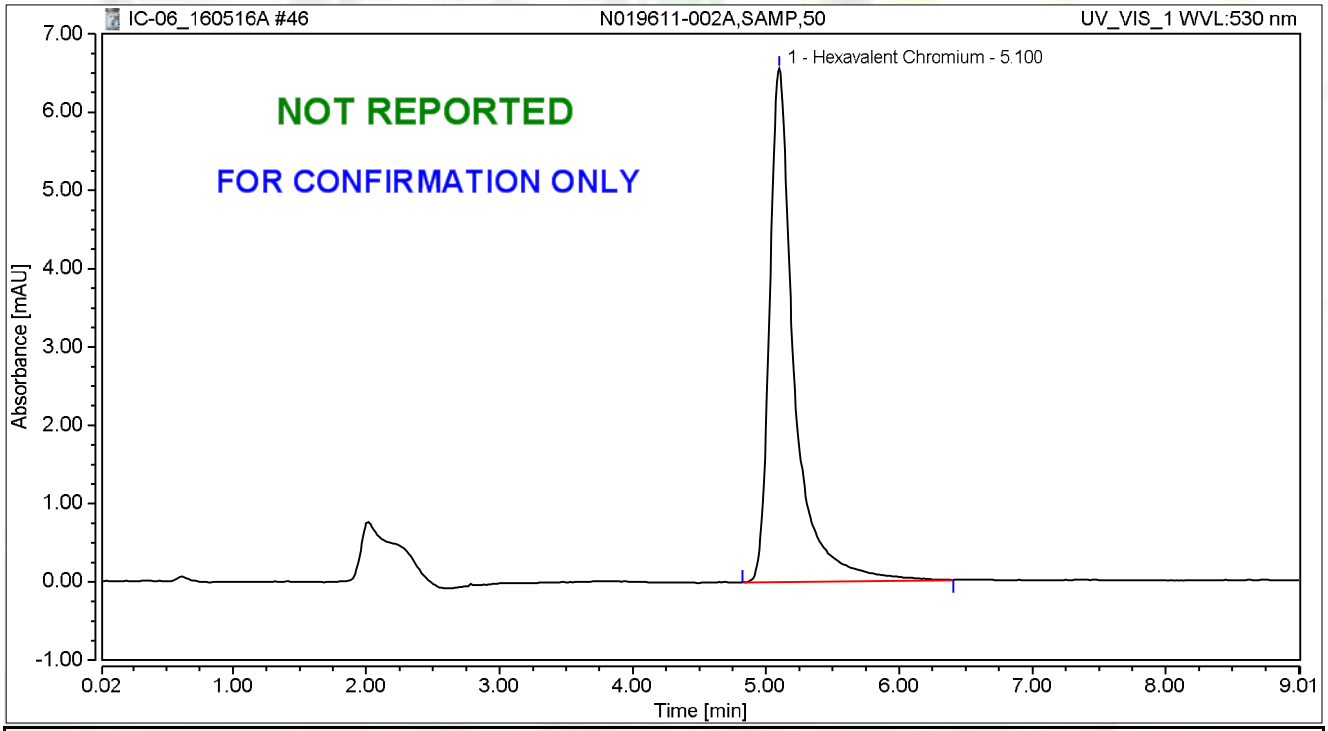
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-002A,SAMP,50**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

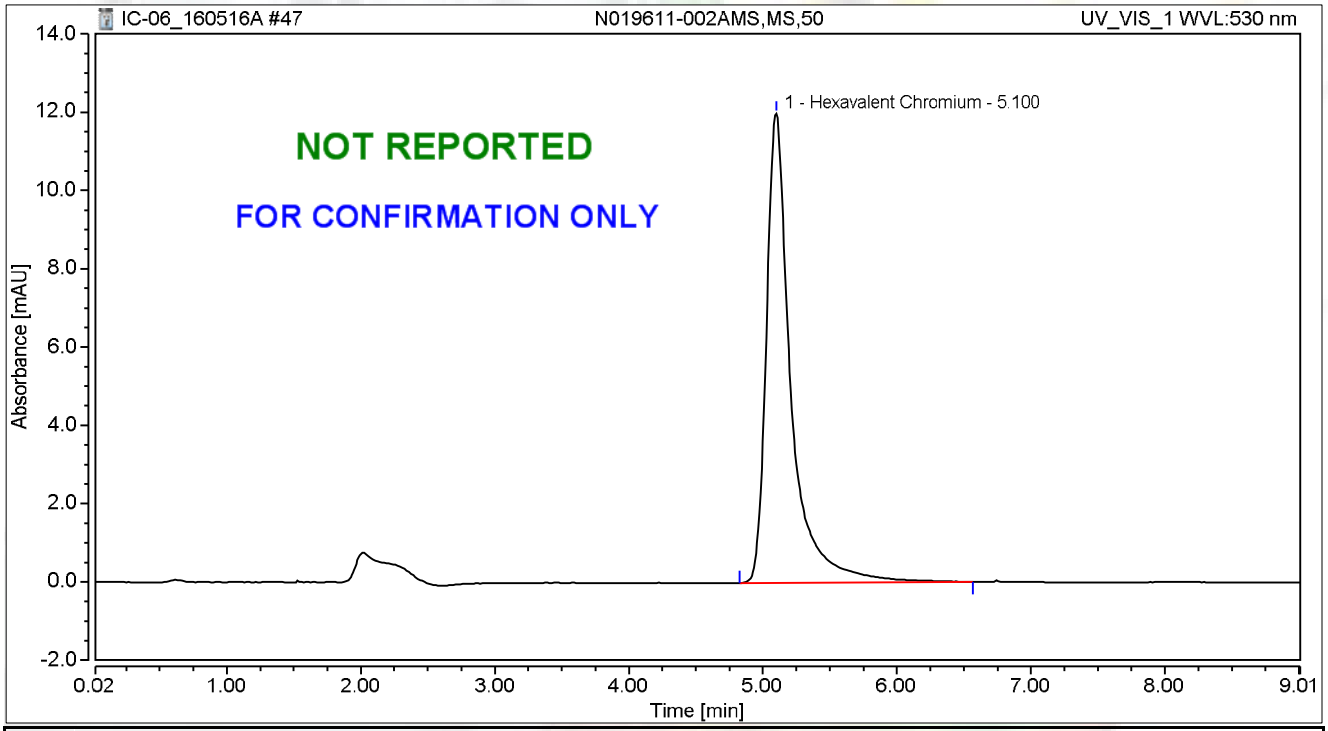
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.410	6.559	100.00	100.00	6.0191
Total:			**1.410**	**6.559**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-002AMS,MS,50**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

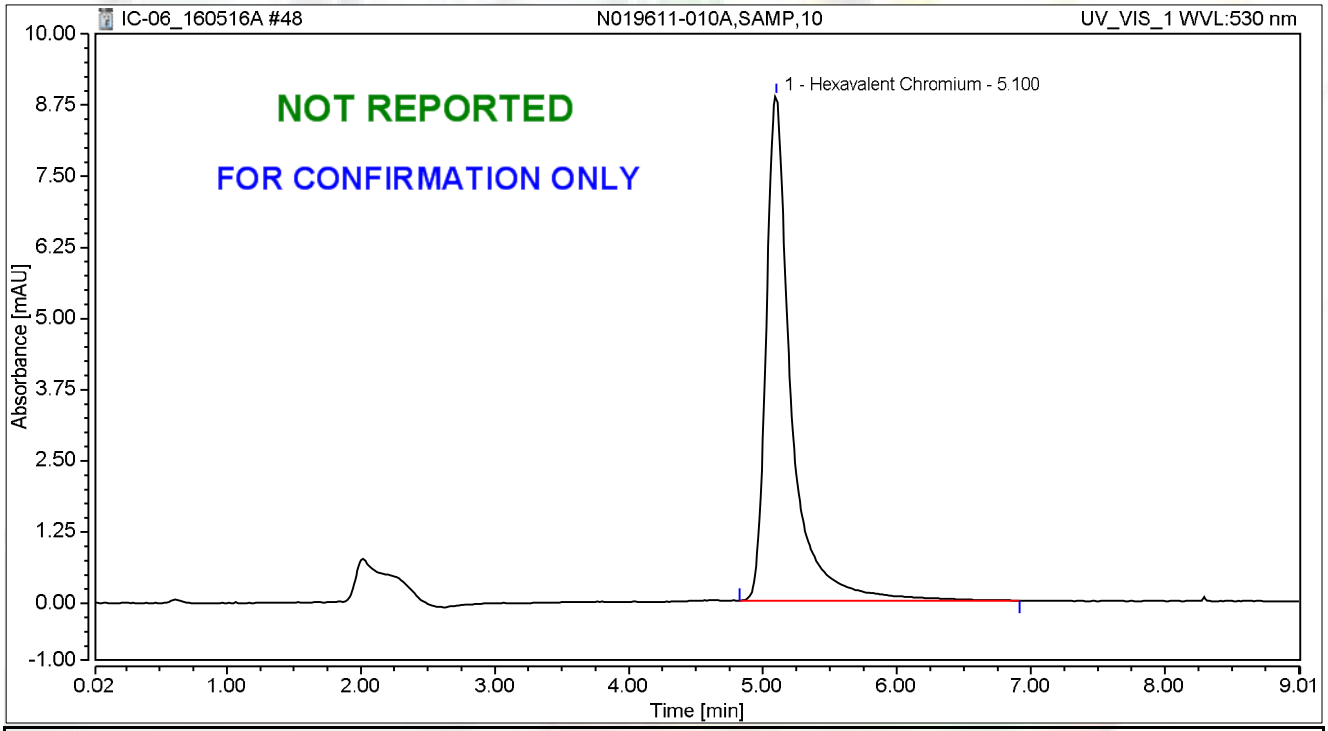
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.560	11.996	100.00	100.00	10.9420
Total:			**2.560**	**11.996**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-010A,SAMP,10**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

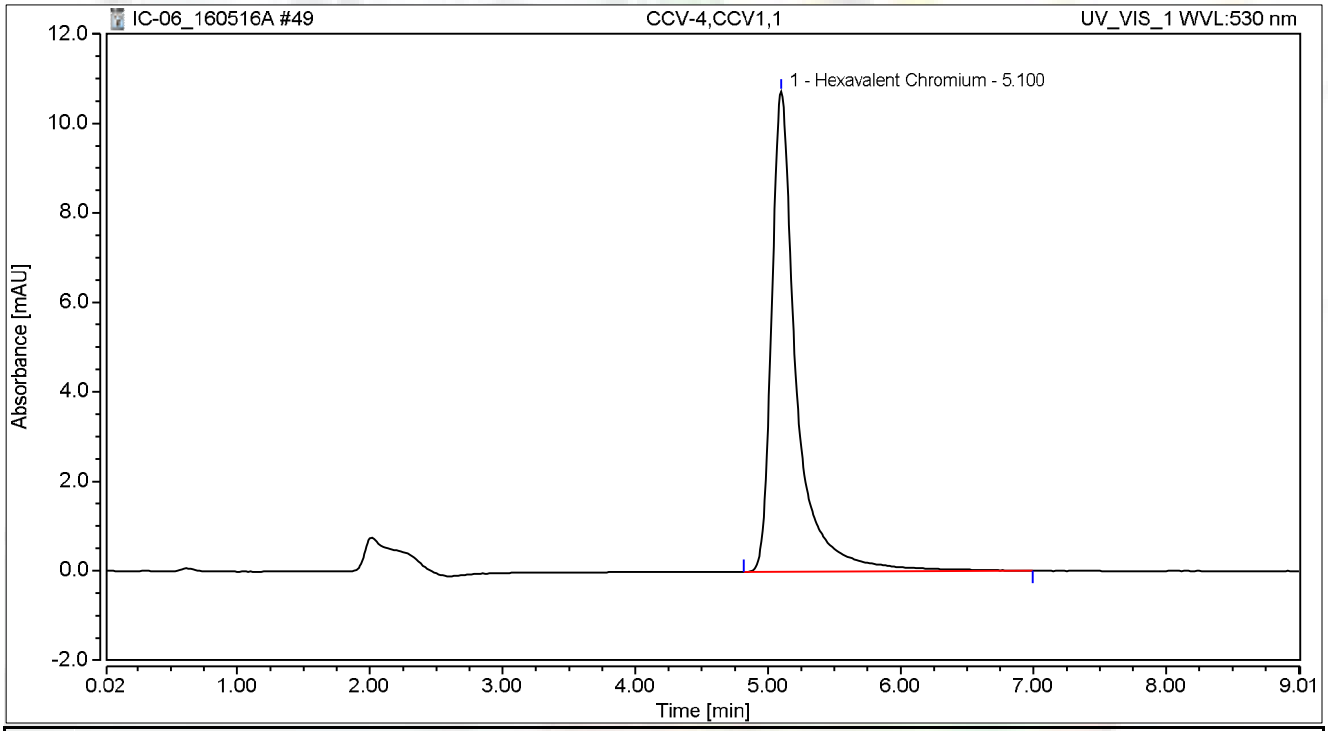
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.917	8.857	100.00	100.00	8.1898
Total:			**1.917**	**8.857**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

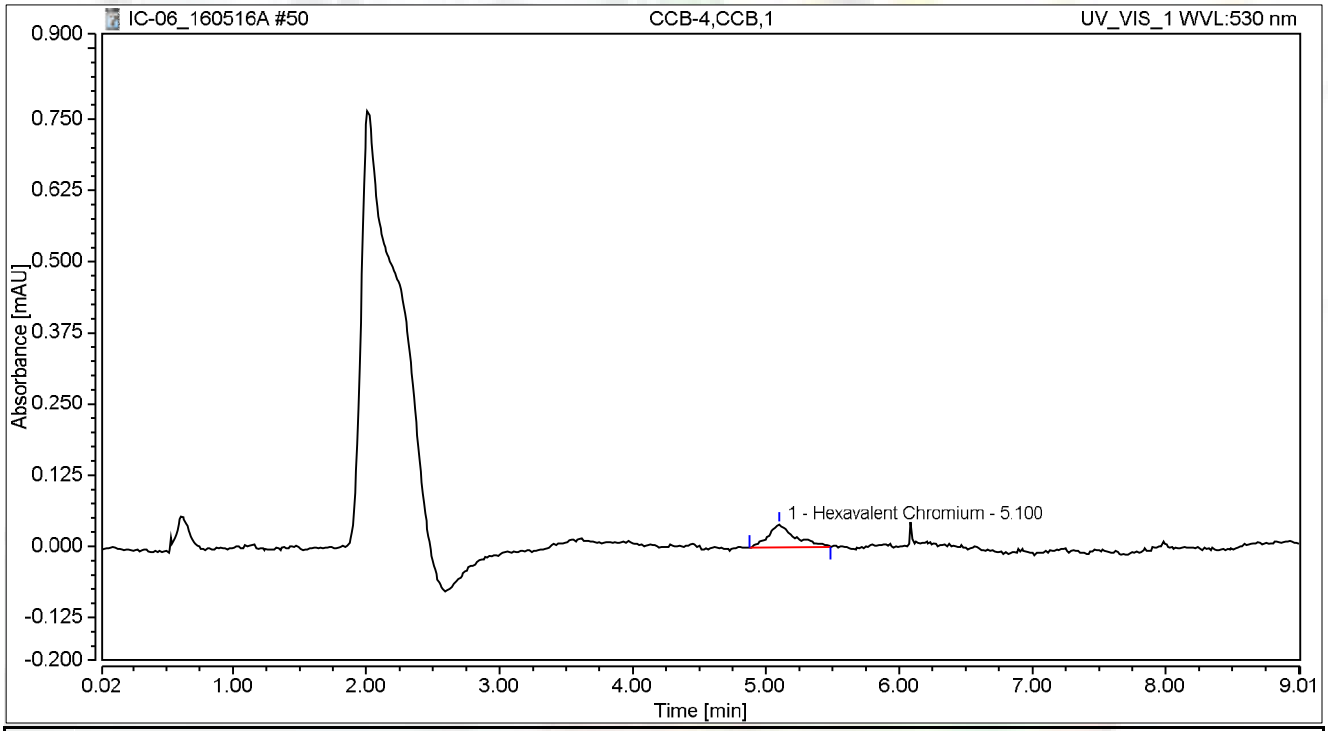
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	2.331	10.728	100.00	100.00	9.9602
Total:			**2.331**	**10.728**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 17:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

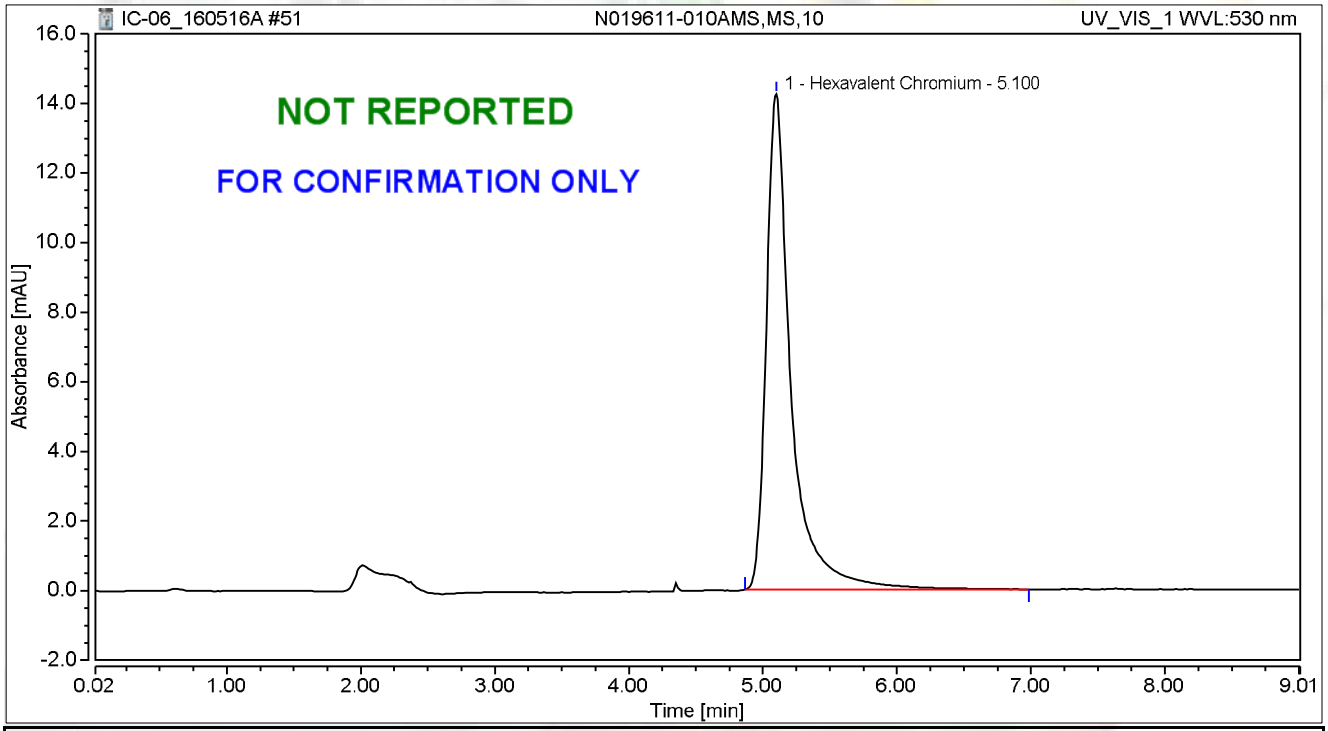
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.010	0.040	100.00	100.00	0.0240
Total:			**0.010**	**0.040**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-010AMS,MS,10**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 17:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

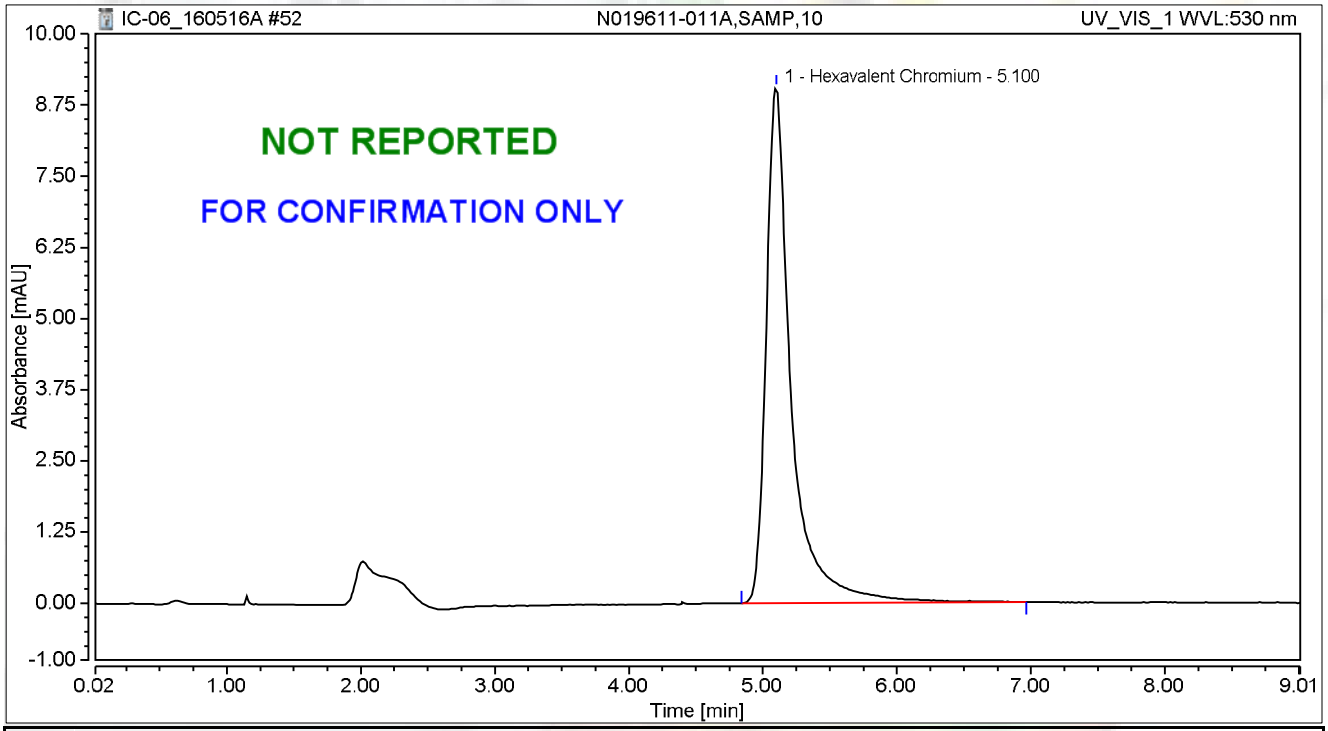
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	3.059	14.244	100.00	100.00	13.0798
Total:			**3.059**	**14.244**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-011A,SAMP,10**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

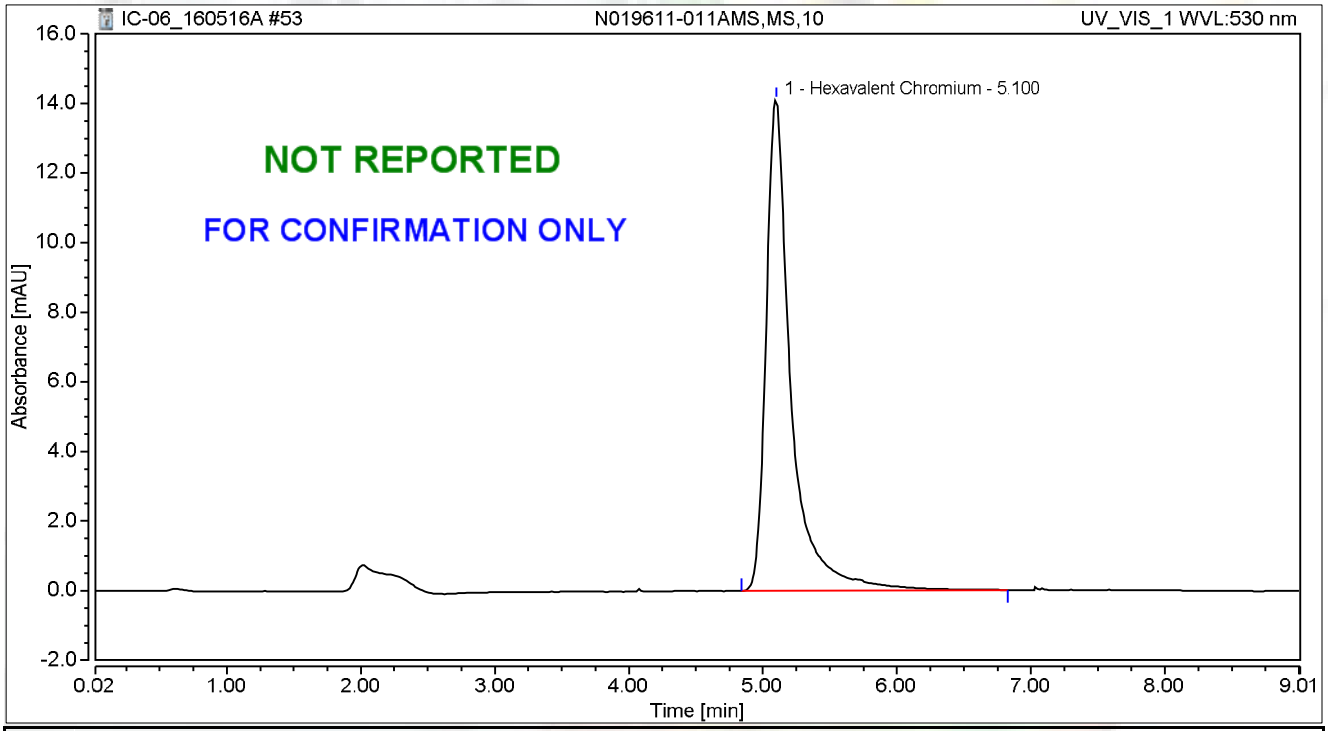
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.962	9.056	100.00	100.00	8.3822
Total:			**1.962**	**9.056**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-011AMS,MS,10**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

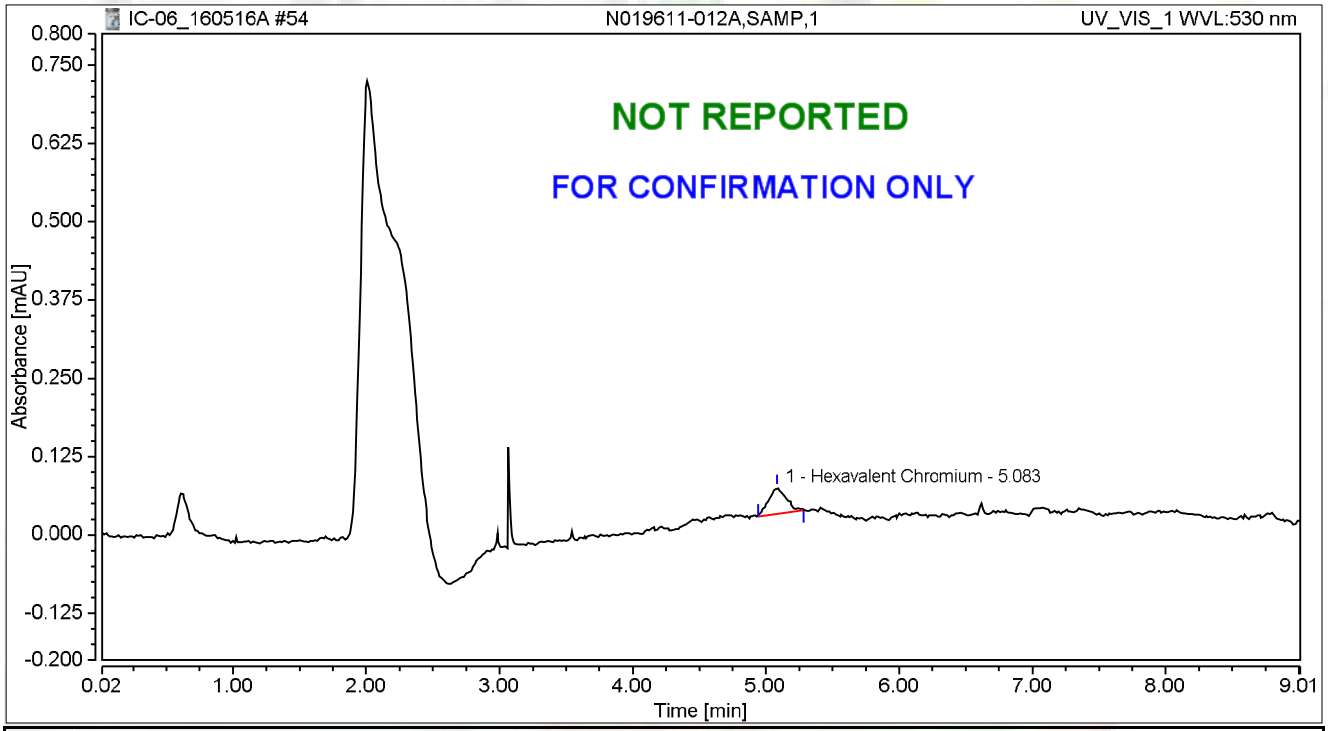
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	3.048	14.115	100.00	100.00	13.0333
Total:			**3.048**	**14.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-012A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 18:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

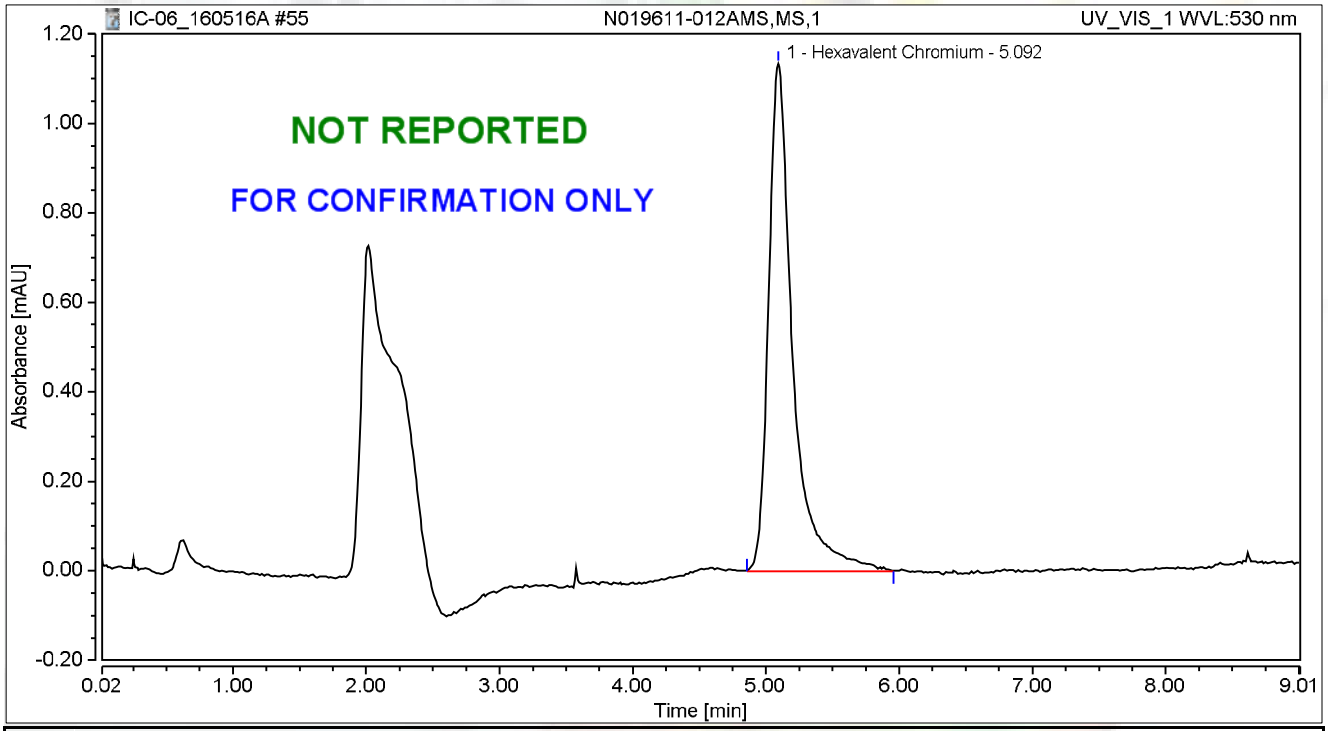
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	0.007	0.043	100.00	100.00	0.0099
Total:			**0.007**	**0.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-012AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

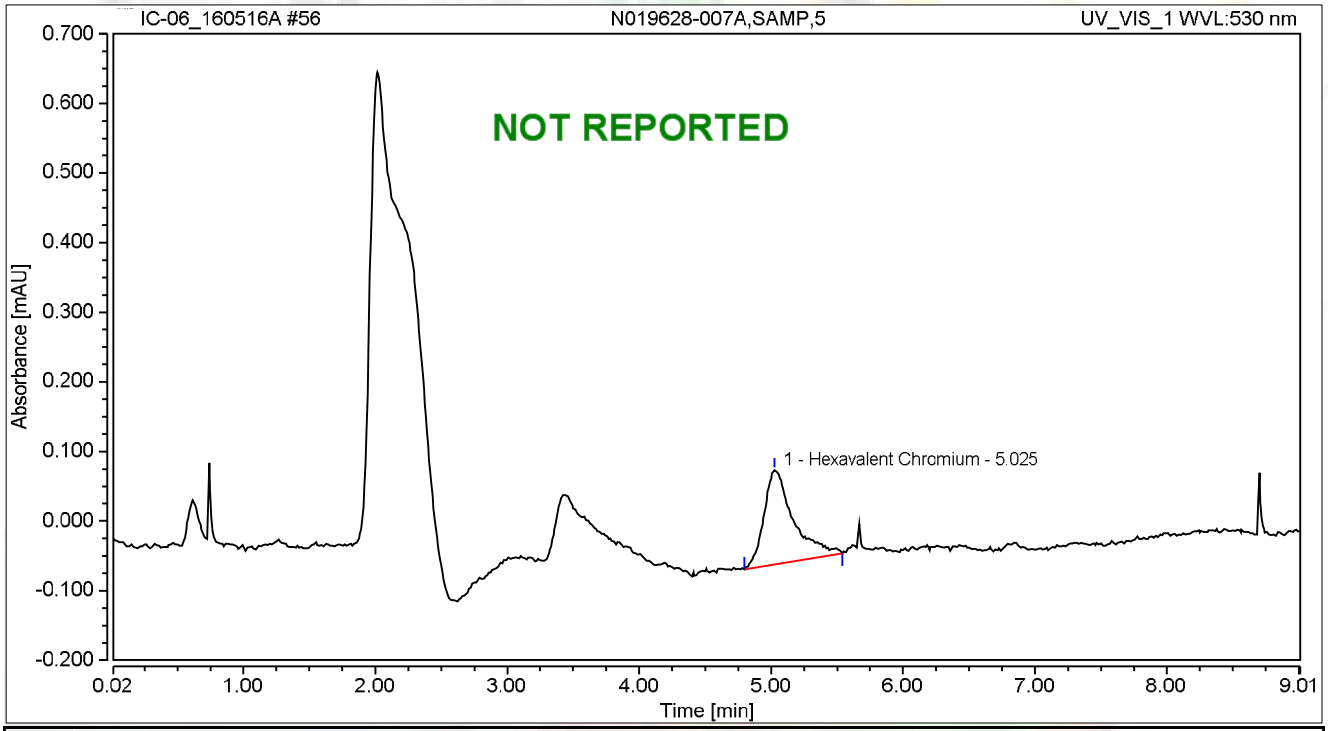
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.239	1.135	100.00	100.00	1.0054
Total:			**0.239**	**1.135**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

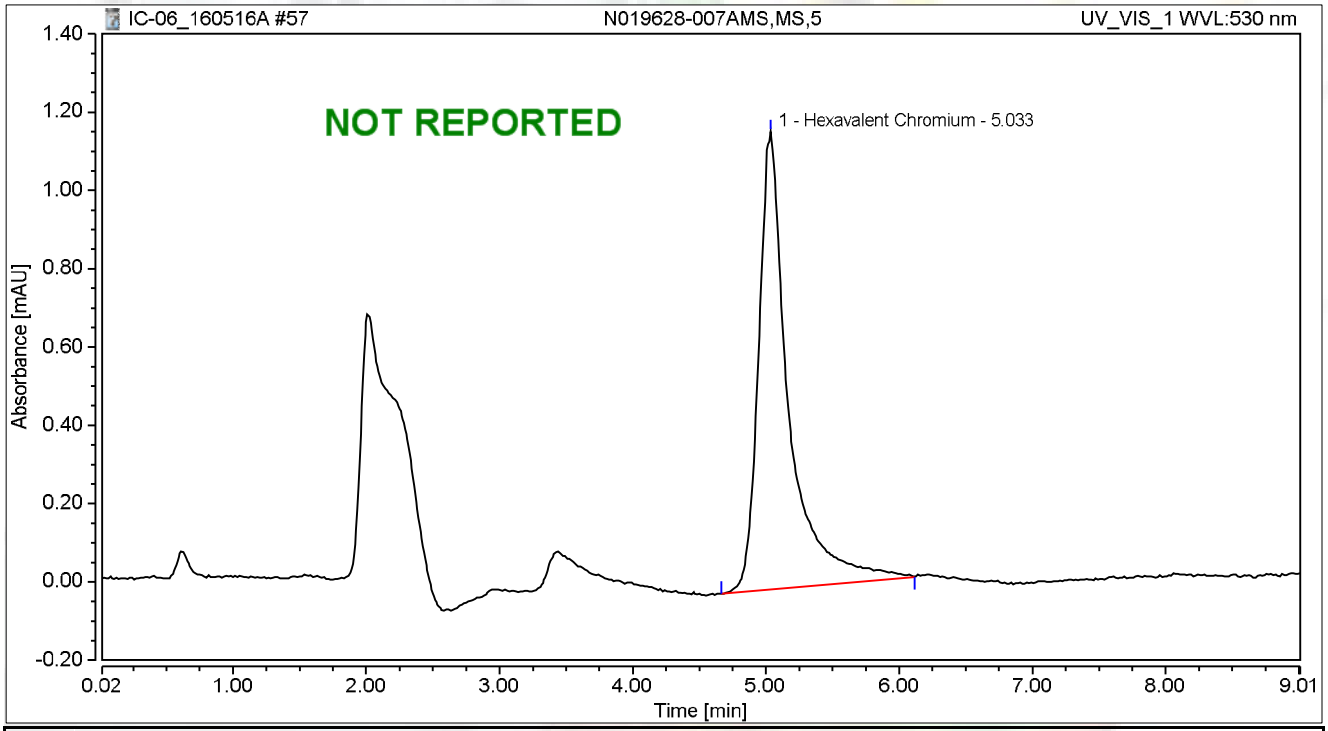
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.025	0.035	0.135	100.00	100.00	0.1325
Total:			**0.035**	**0.135**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 18:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

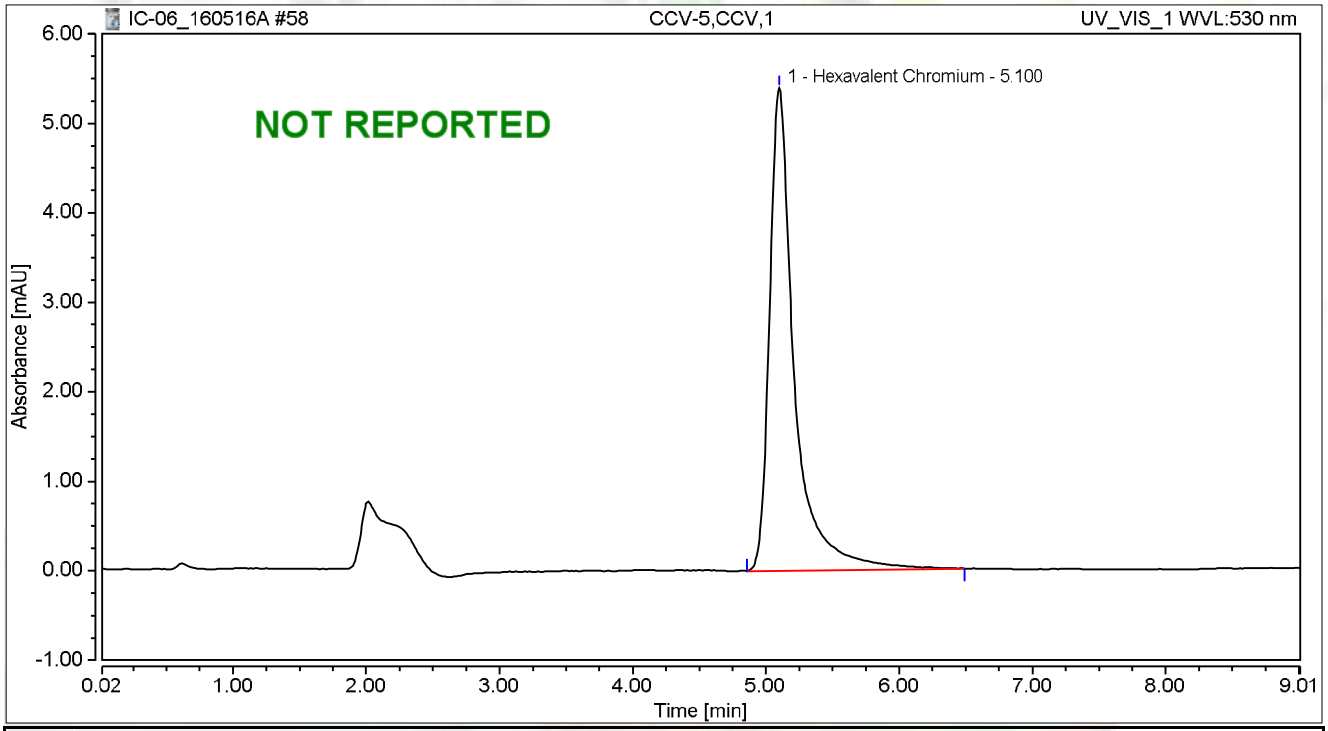
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.033	0.308	1.169	100.00	100.00	1.3012
Total:			**0.308**	**1.169**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 18:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

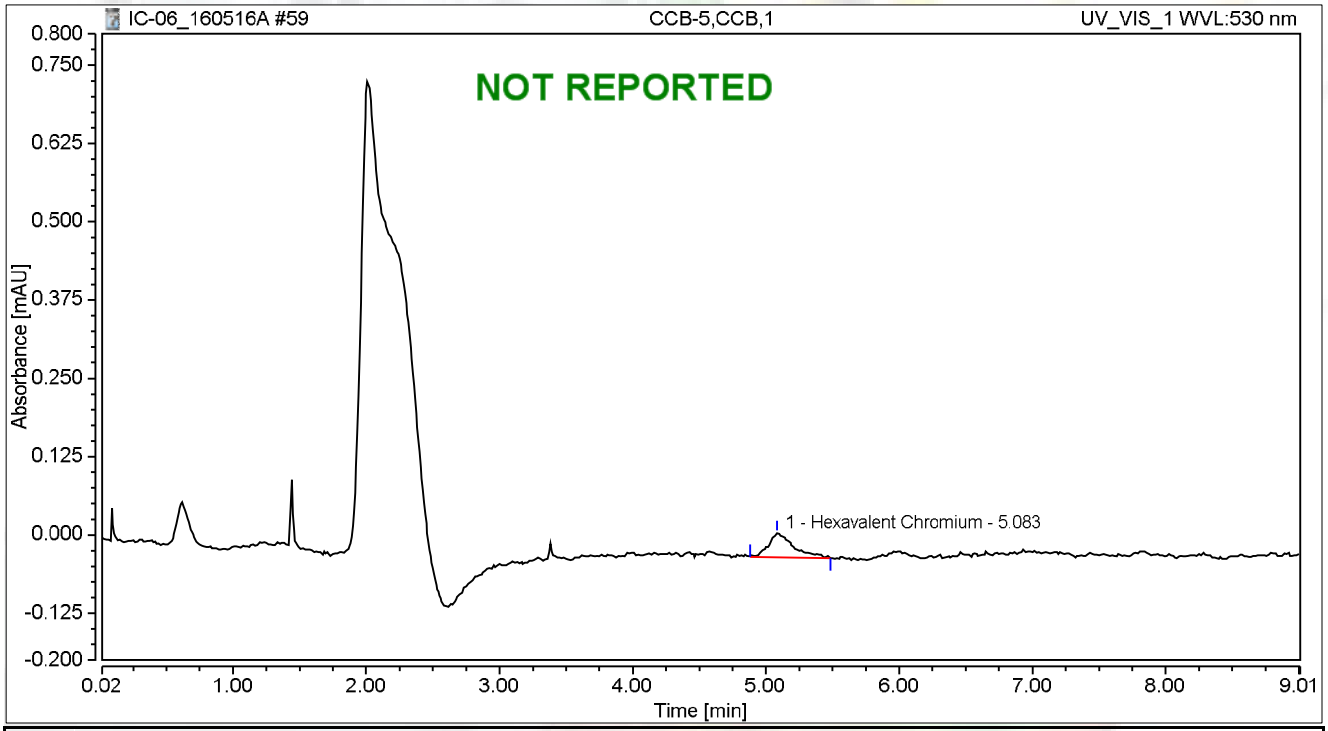
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.171	5.399	100.00	100.00	4.9937
Total:			**1.171**	**5.399**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 18:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	0.008	0.038	100.00	100.00	0.0183
Total:			**0.008**	**0.038**	**100.00**	**100.00**	

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160420B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	ICV	ICV	1	Hexavalent Chromium	04/20/16 3:44 PM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	04/20/16 5:23 PM	Not Reported
10	ICV	ICV	1	Hexavalent Chromium	04/20/16 5:34 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/20/16 5:43 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/20/16 5:53 PM	Reported
13	LCS-R107042	LCS	1	Hexavalent Chromium	04/20/16 6:03 PM	Reported
14	MB-R107042	MBLK	1	Hexavalent Chromium	04/20/16 6:17 PM	Reported
15	N019464-001A	SAMP	1	Hexavalent Chromium	04/20/16 6:28 PM	Reported
16	N019464-001ADUP	DUP	1	Hexavalent Chromium	04/20/16 6:37 PM	Reported
17	N019464-001AMS	MS	1	Hexavalent Chromium	04/20/16 6:47 PM	Reported
18	N019464-001AMSD	MSD	1	Hexavalent Chromium	04/20/16 6:56 PM	Reported
19	N019464-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:06 PM	Reported
20	N019433-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:15 PM	Reported
21	N019447-008A	SAMP	1	Hexavalent Chromium	04/20/16 7:25 PM	Not Reported
22	N019447-010A	SAMP	1	Hexavalent Chromium	04/20/16 7:34 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/20/16 7:44 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/20/16 7:53 PM	Reported
25	N019449-001A	SAMP	1	Hexavalent Chromium	04/20/16 8:04 PM	Reported
26	N019449-002A	SAMP	10	Hexavalent Chromium	04/20/16 8:15 PM	Not Reported
27	N019449-003A	SAMP	1	Hexavalent Chromium	04/20/16 8:24 PM	Reported
28	N019449-004A	SAMP	1	Hexavalent Chromium	04/20/16 8:34 PM	Reported
29	N019449-005A	SAMP	1	Hexavalent Chromium	04/20/16 8:43 PM	Reported
30	N019449-006A	SAMP	1	Hexavalent Chromium	04/20/16 8:53 PM	Reported
31	N019449-007A	SAMP	1	Hexavalent Chromium	04/20/16 9:02 PM	Reported
32	N019449-008A	SAMP	1	Hexavalent Chromium	04/20/16 9:12 PM	Reported
33	N019449-009A	SAMP	1	Hexavalent Chromium	04/20/16 9:21 PM	Reported
34	N019449-010A	SAMP	1	Hexavalent Chromium	04/20/16 9:31 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/20/16 9:40 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/20/16 9:49 PM	Reported
37	N019347-002A	SAMP	1	Hexavalent Chromium	04/20/16 9:59 PM	Not Reported
38	N019347-002AMS	MS	1	Hexavalent Chromium	04/20/16 10:08 PM	Not Reported
39	MB-R107053	MBLK	1	Hexavalent Chromium	04/20/16 10:18 PM	Reported
40	LCS-R107053	LCS	1	Hexavalent Chromium	04/20/16 10:27 PM	Reported
41	N019448-001A	SAMP	10	Hexavalent Chromium	04/20/16 10:37 PM	Reported
42	N019448-001ADUP	DUP	10	Hexavalent Chromium	04/20/16 10:46 PM	Reported
43	N019448-001AMS	MS	10	Hexavalent Chromium	04/20/16 10:56 PM	Reported
44	N019448-001AMSD	MSD	10	Hexavalent Chromium	04/20/16 11:05 PM	Reported
45	N019448-002A	SAMP	1	Hexavalent Chromium	04/20/16 11:15 PM	Not Reported
46	N019448-003A	SAMP	1	Hexavalent Chromium	04/20/16 11:24 PM	Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/20/16 11:34 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/20/16 11:43 PM	Reported
49	N019448-004A	SAMP	1	Hexavalent Chromium	04/20/16 11:53 PM	Reported

INJECTION LOG: 160420B

Instrument ID: IC-07

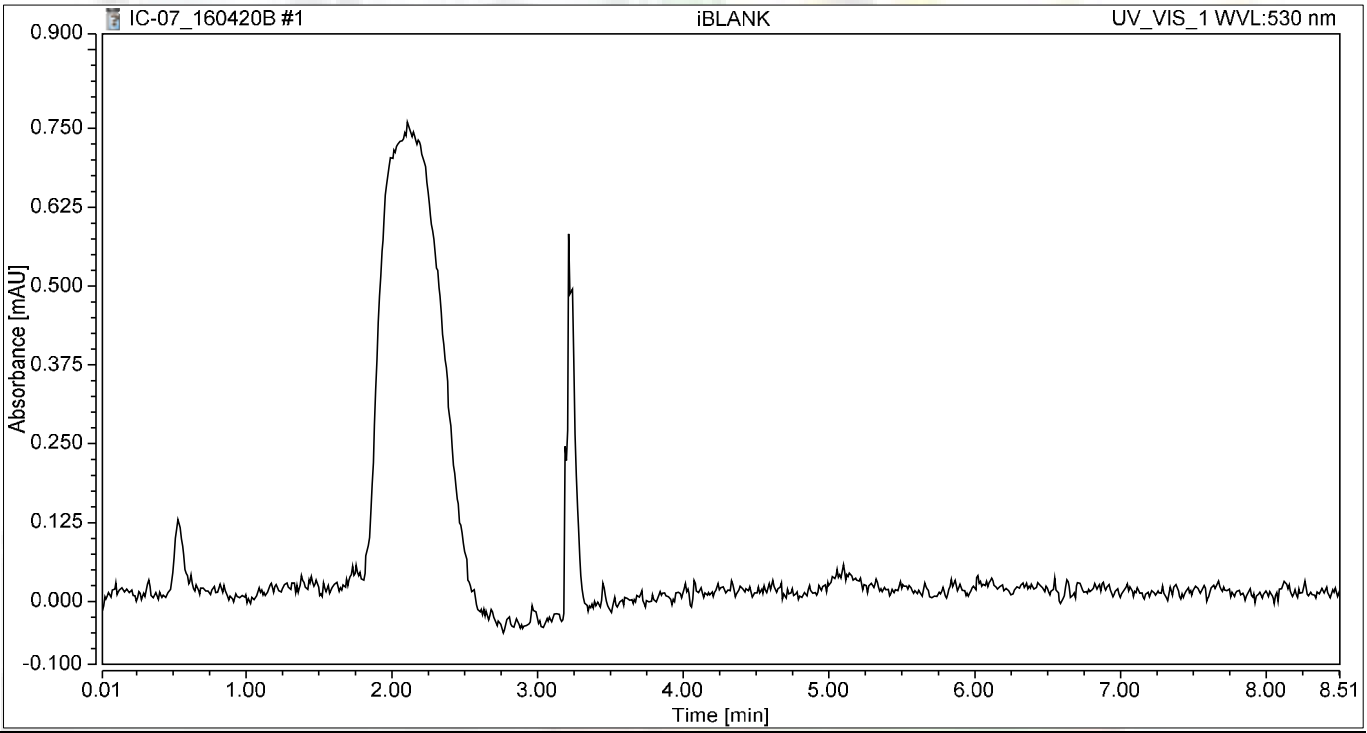
Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019448-005A	SAMP	1	Hexavalent Chromium	04/21/16 12:02 AM	Reported
51	N019448-006A	SAMP	1	Hexavalent Chromium	04/21/16 12:11 AM	Reported
52	N019448-007A	SAMP	1	Hexavalent Chromium	04/21/16 12:21 AM	Reported
53	N019458-001A	SAMP	1	Hexavalent Chromium	04/21/16 12:30 AM	Reported
54	N019458-002A	SAMP	1	Hexavalent Chromium	04/21/16 12:40 AM	Reported
55	N019458-003A	SAMP	1	Hexavalent Chromium	04/21/16 12:49 AM	Reported
56	N019458-004A	SAMP	1	Hexavalent Chromium	04/21/16 12:59 AM	Reported
57	N019458-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:08 AM	Reported
58	N019458-006A	SAMP	1	Hexavalent Chromium	04/21/16 1:18 AM	Not Reported
59	CCV-4	CCV	1	Hexavalent Chromium	04/21/16 1:27 AM	Reported
60	CCB-4	CCB	1	Hexavalent Chromium	04/21/16 1:37 AM	Reported
61	N019458-007A	SAMP	1	Hexavalent Chromium	04/21/16 1:46 AM	Reported
62	N019368-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:55 AM	Not Reported
63	N019368-005AMS	MS	1	Hexavalent Chromium	04/21/16 2:05 AM	Not Reported
64	N019368-006A	SAMP	1	Hexavalent Chromium	04/21/16 2:14 AM	Not Reported
65	N019368-006AMS	MS	1	Hexavalent Chromium	04/21/16 2:24 AM	Not Reported
66	N019368-008A	SAMP	1	Hexavalent Chromium	04/21/16 2:33 AM	Not Reported
67	N019368-008AMS	MS	1	Hexavalent Chromium	04/21/16 2:43 AM	Not Reported
68	N019368-013A	SAMP	1	Hexavalent Chromium	04/21/16 2:52 AM	Not Reported
69	N019368-013AMS	MS	1	Hexavalent Chromium	04/21/16 3:02 AM	Not Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	04/21/16 3:11 AM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	04/21/16 3:21 AM	Reported

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

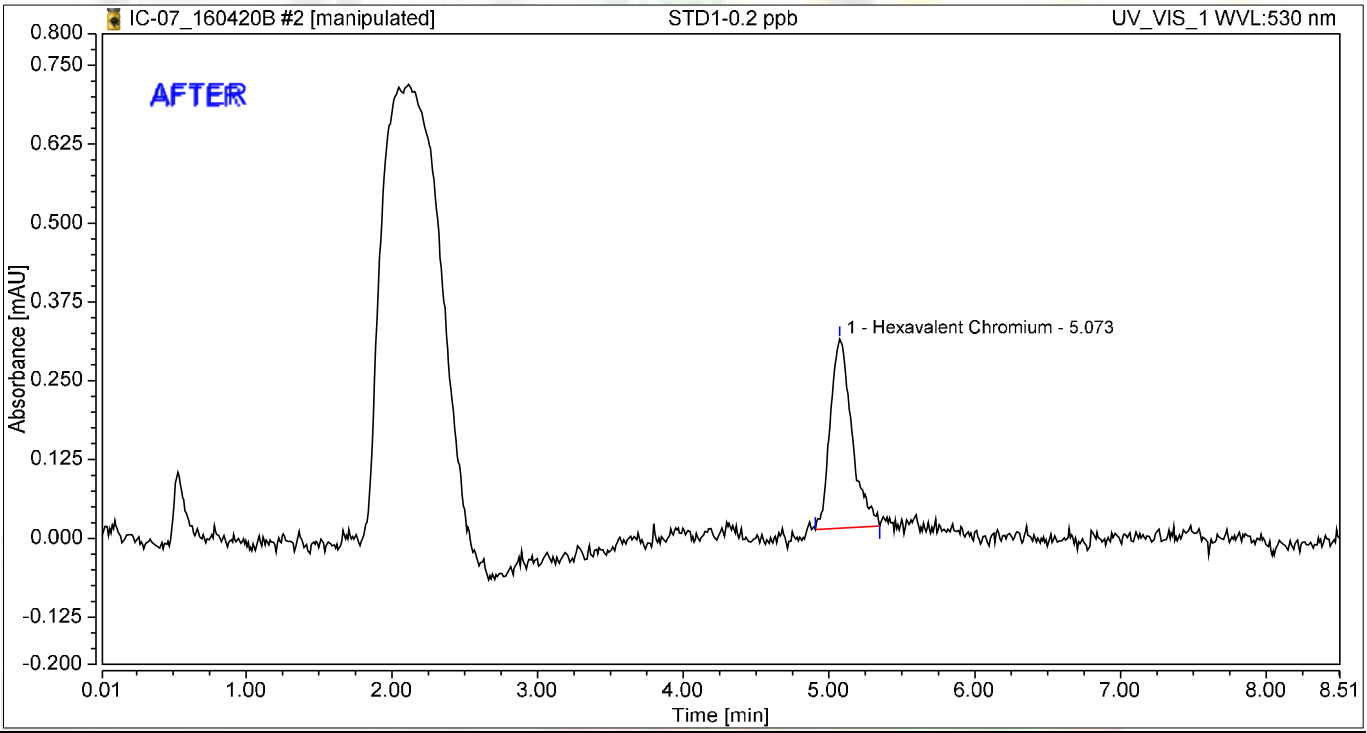
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.052	0.300	100.00	100.00	0.2206
Total:			**0.052**	**0.300**	**100.00**	**100.00**	

4/25/2016

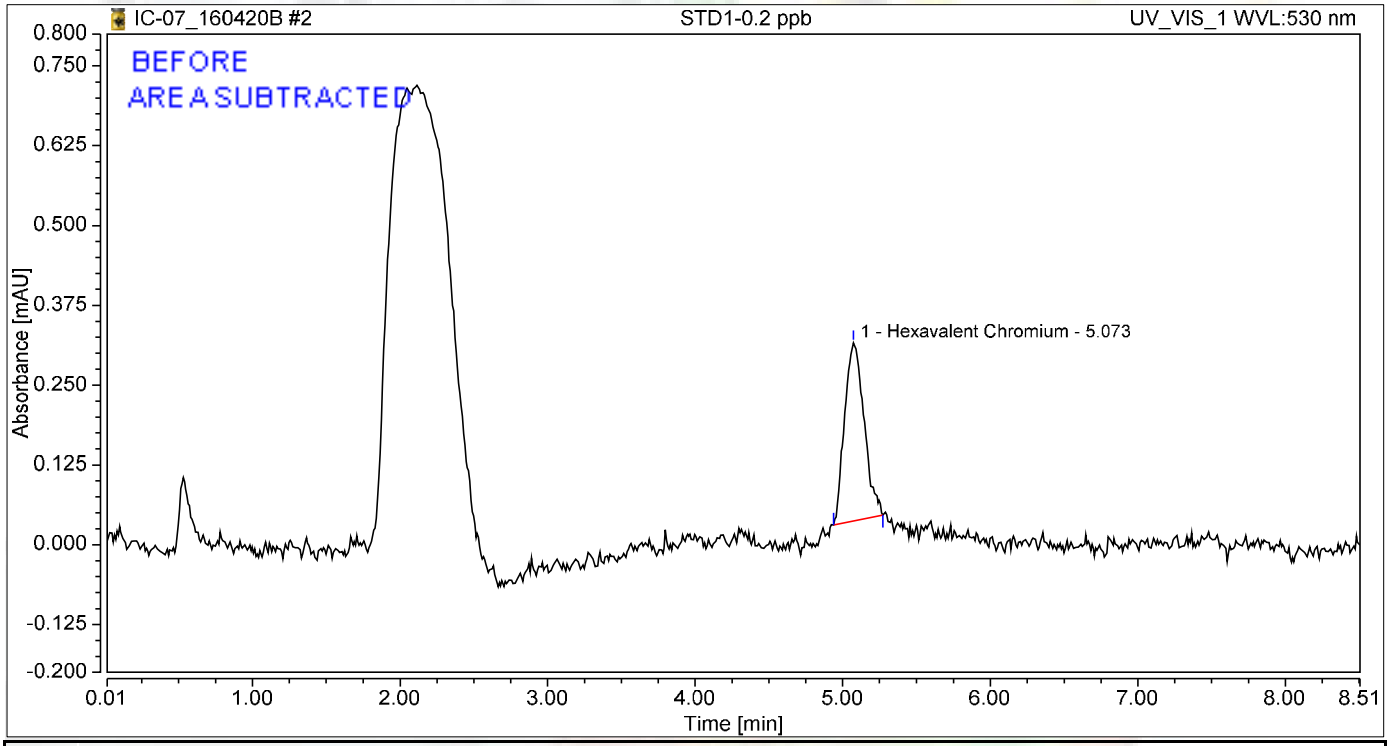
4/27/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.043	0.279	100.00	100.00	0.1807
Total:			**0.043**	**0.279**	**100.00**	**100.00**	

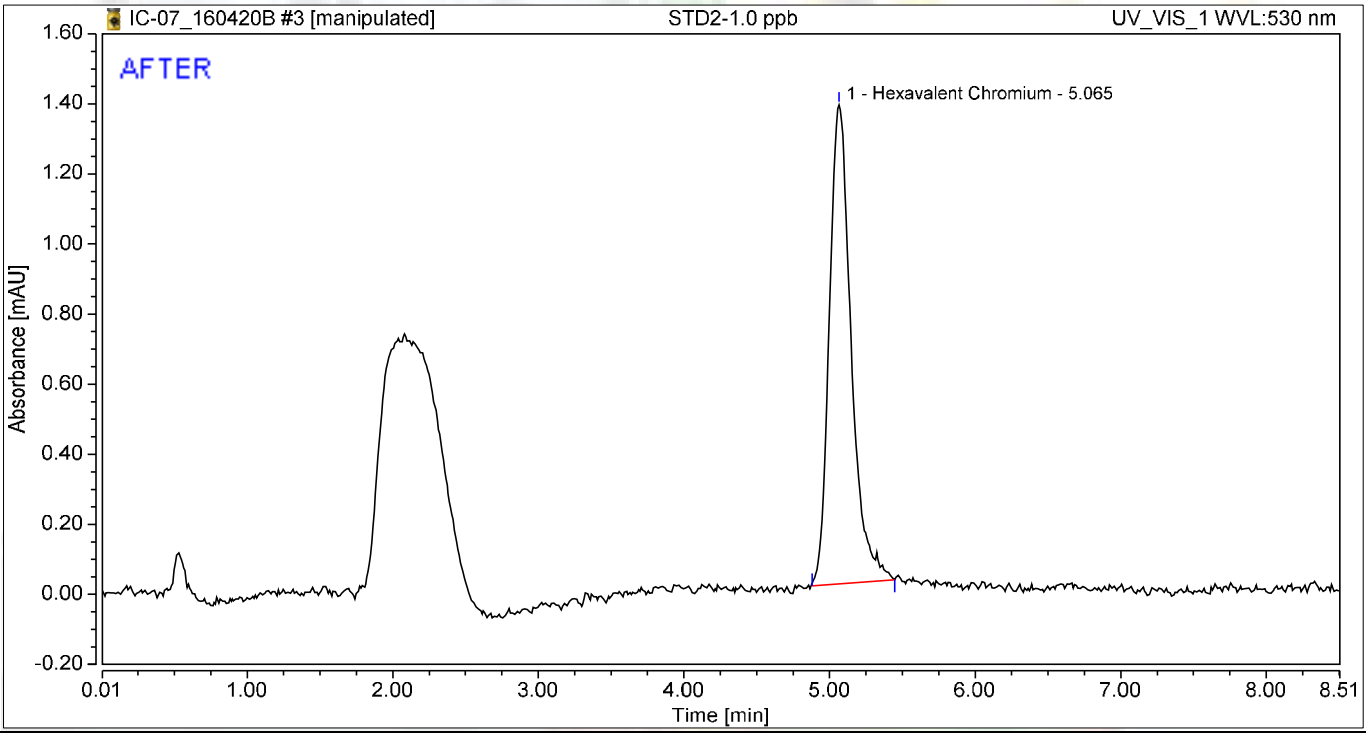
4/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.238	1.368	100.00	100.00	1.0102
Total:			**0.238**	**1.368**	**100.00**	**100.00**	

jas 4/25/2016

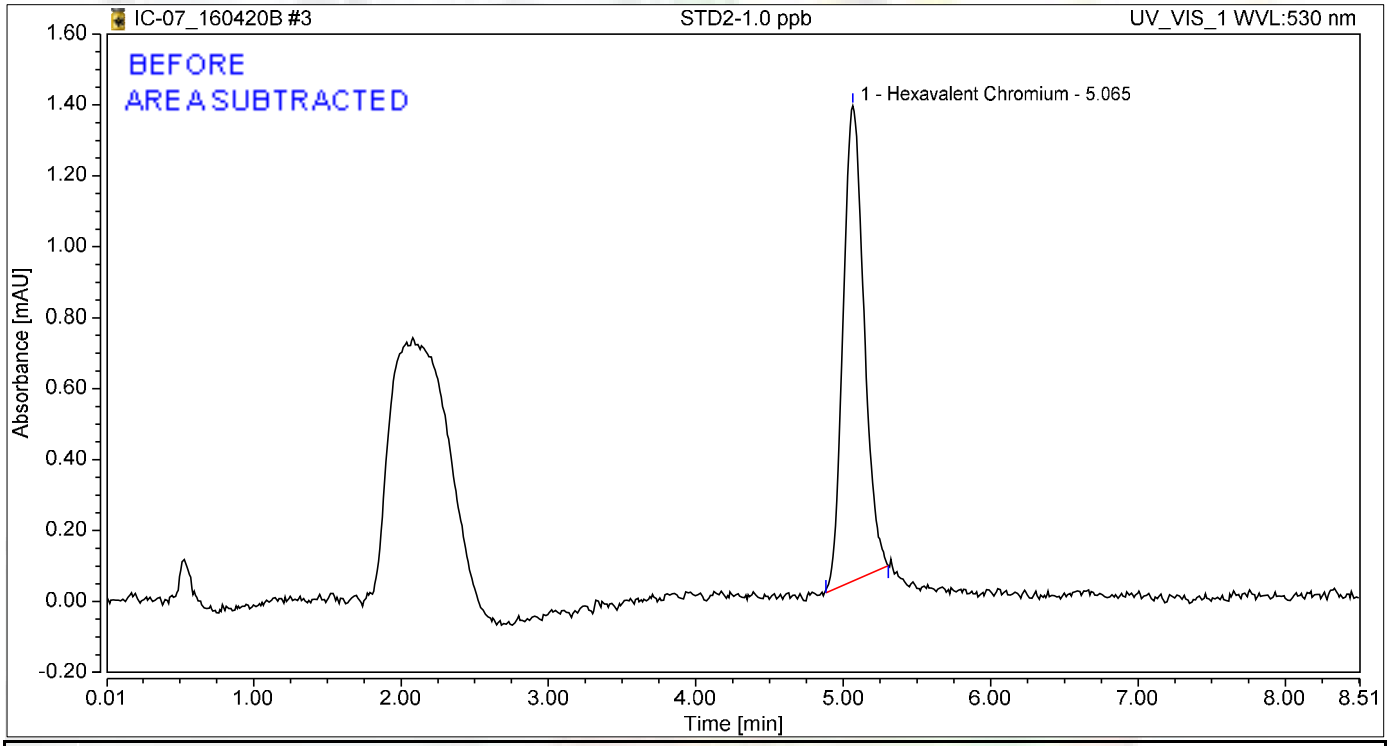
Mary 4/27/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.219	1.340	100.00	100.00	0.9309
Total:			**0.219**	**1.340**	**100.00**	**100.00**	

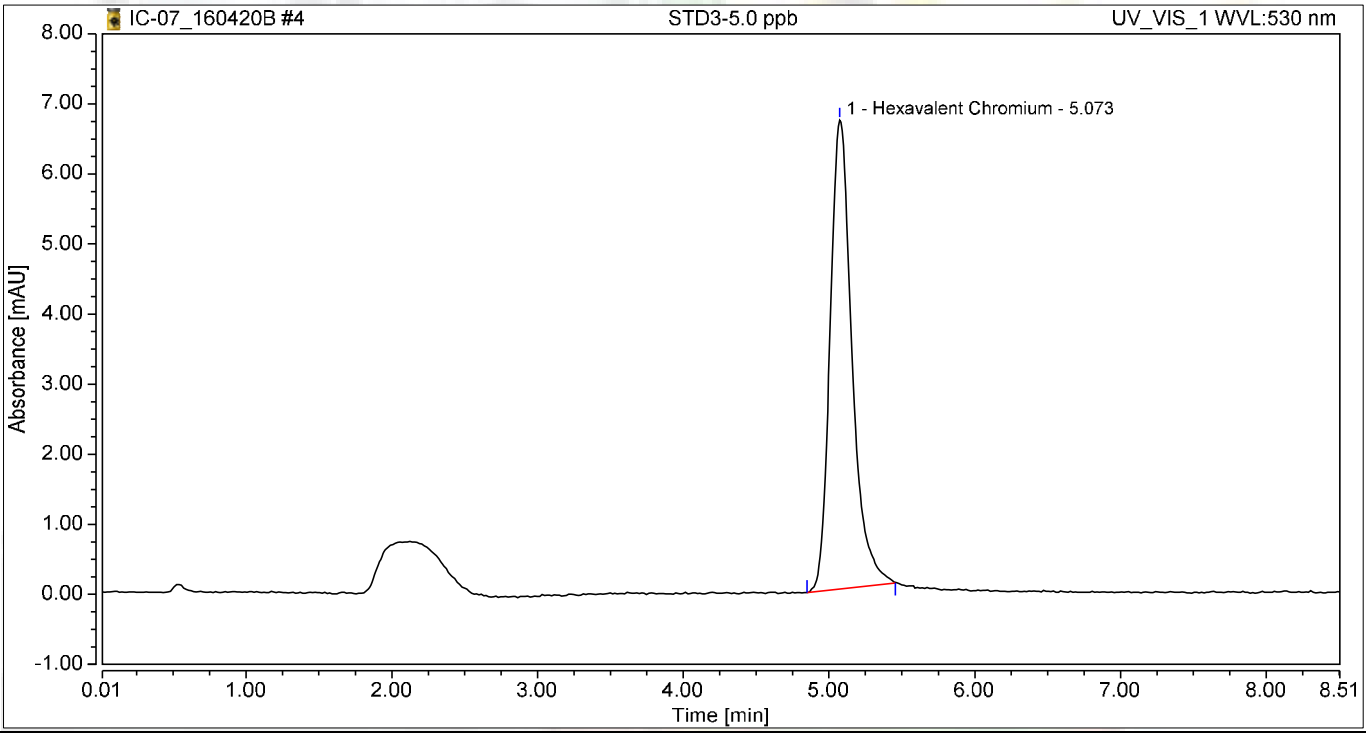
jas 4/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

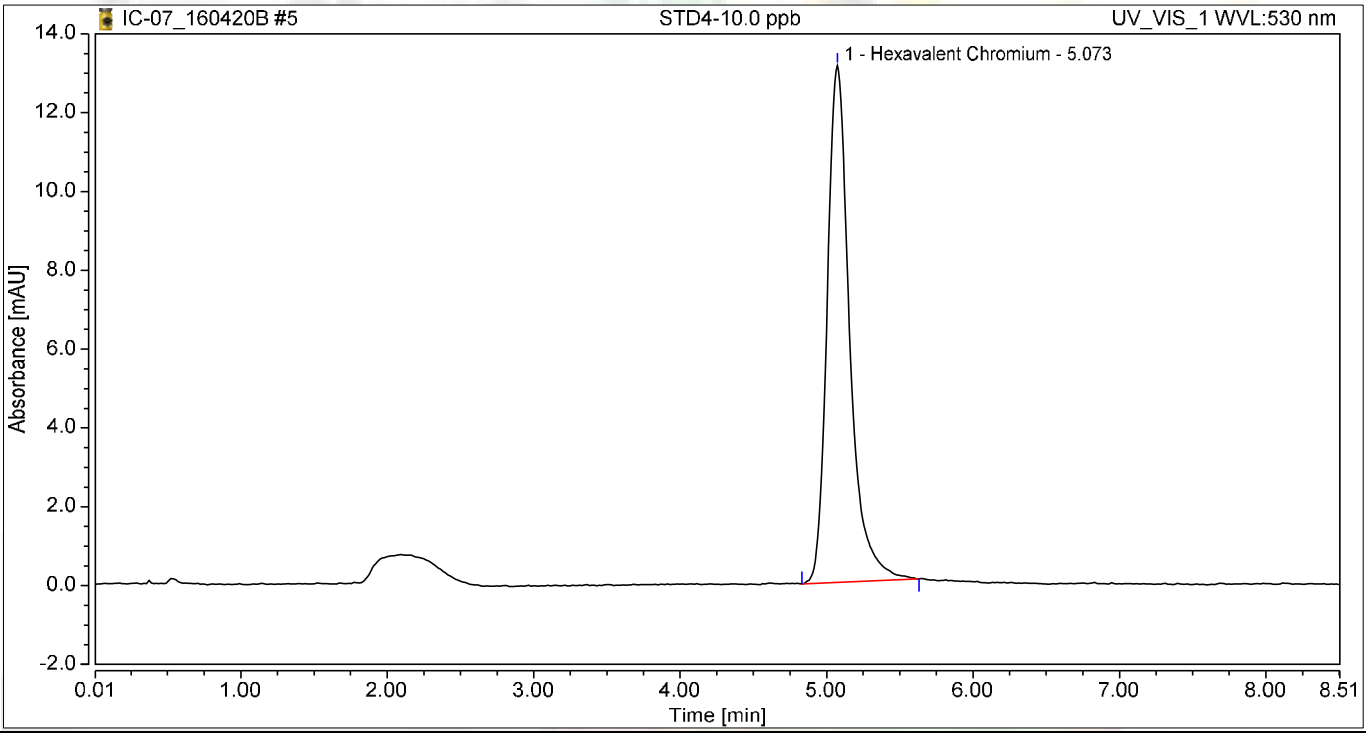
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.167	6.694	100.00	100.00	4.9574
Total:			**1.167**	**6.694**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

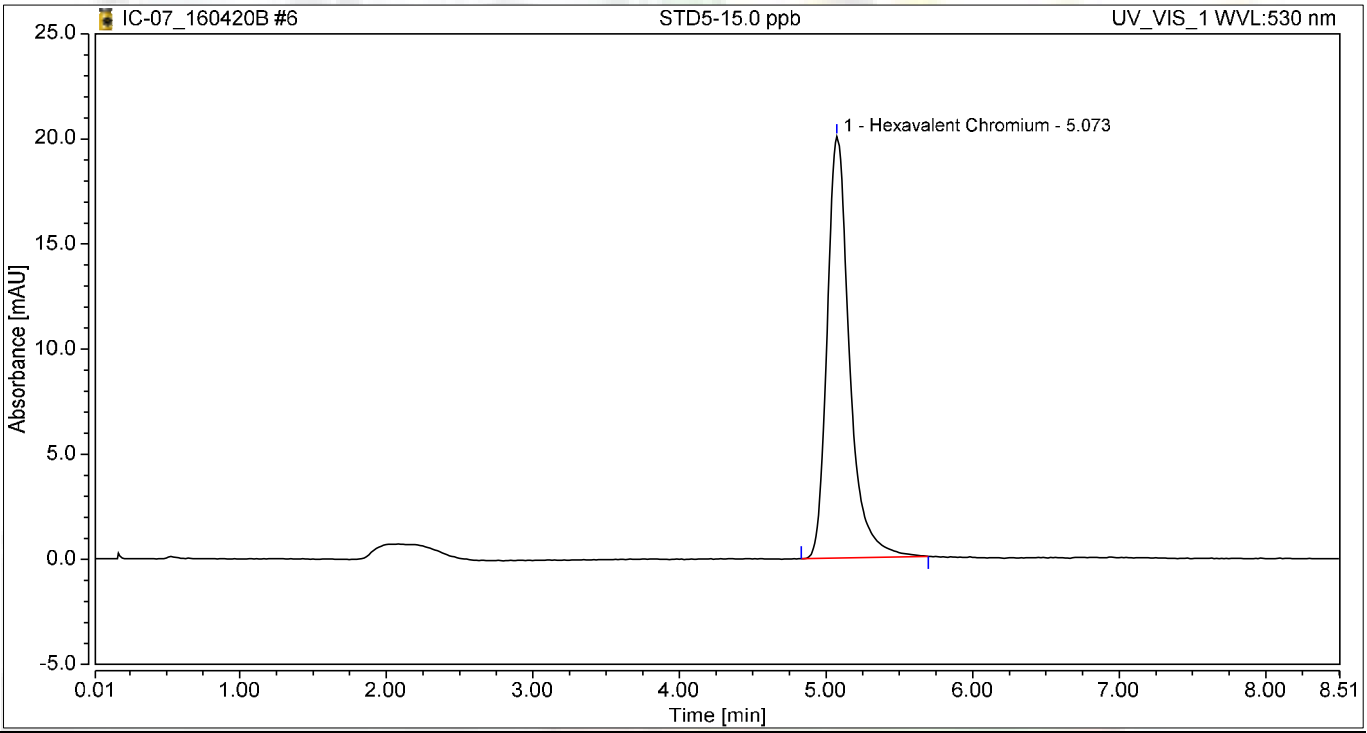
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	2.336	13.113	100.00	100.00	9.9223
Total:			**2.336**	**13.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

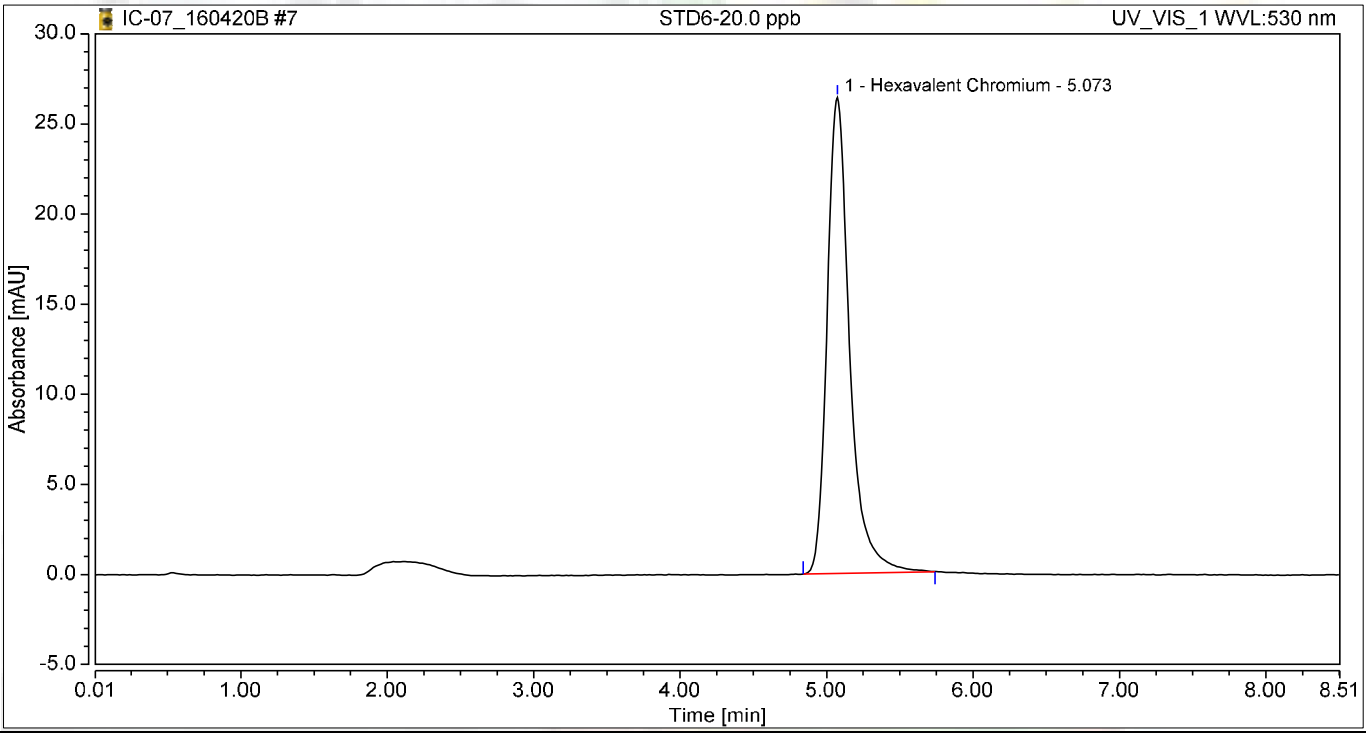
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	3.544	20.049	100.00	100.00	15.0511
Total:			**3.544**	**20.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



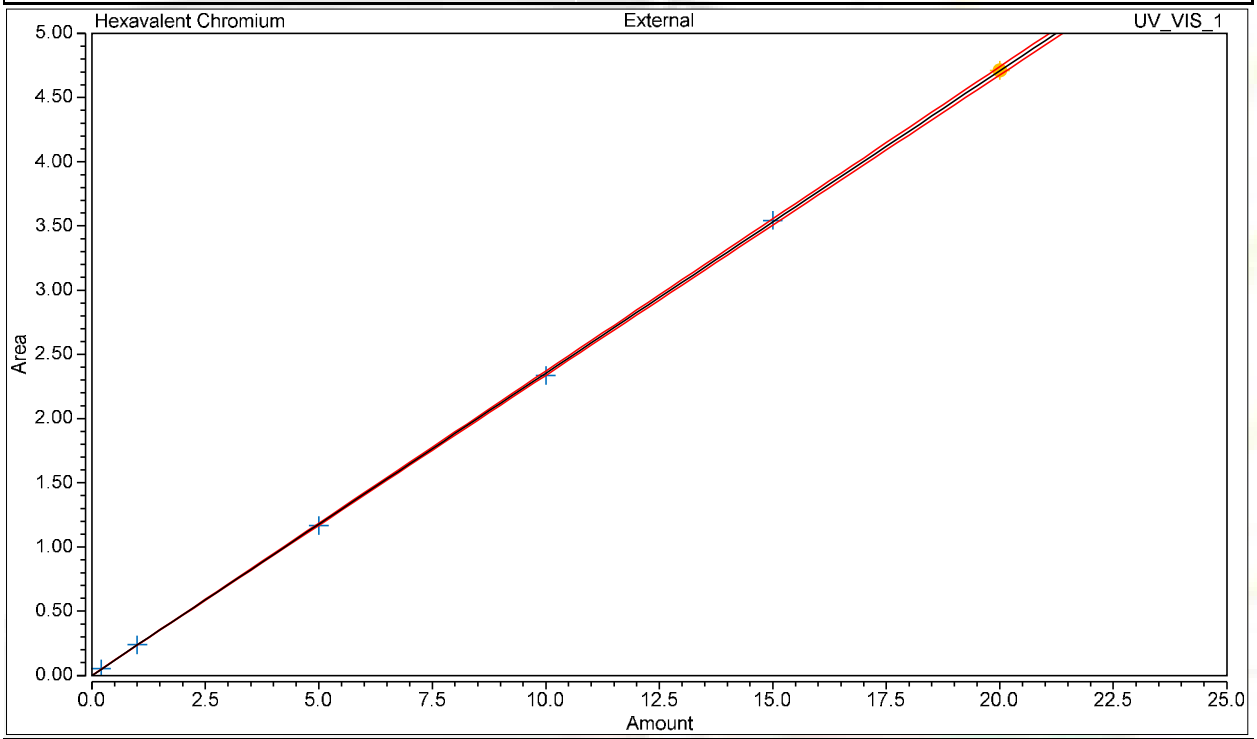
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	4.711	26.416	100.00	100.00	20.0105
Total:			**4.711**	**26.416**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2354
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

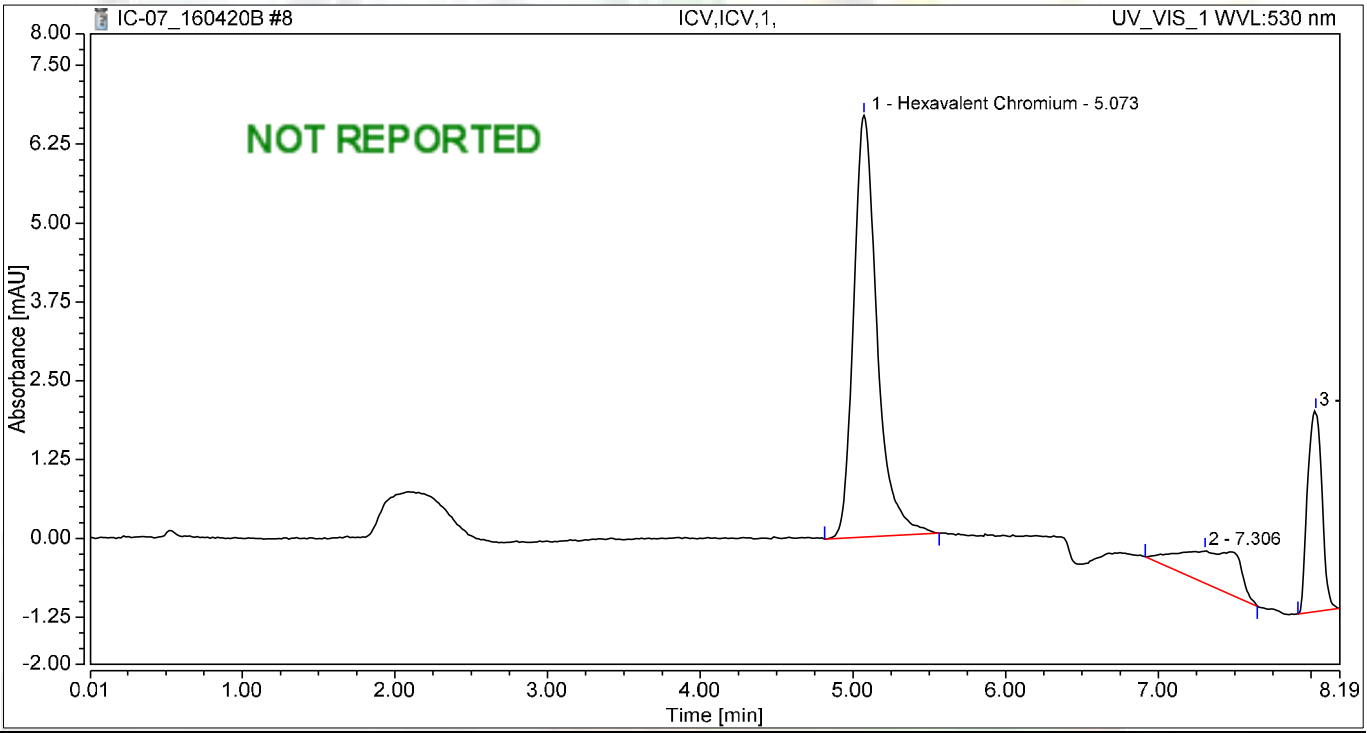
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
2	STD1-0.2 ppb	01	0.2000	0.0519	0.052	0.300
3	STD2-1.0 ppb	02	1.0000	0.2378	0.238	1.368
4	STD3-5.0 ppb	03	5.0000	1.1671	1.167	6.694
5	STD4-10.0 ppb	04	10.0000	2.3360	2.336	13.113
6	STD5-15.0 ppb	05	15.0000	3.5435	3.544	20.049
7	STD6-20.0 ppb	06	20.0000	4.7112	4.711	26.416

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.18**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

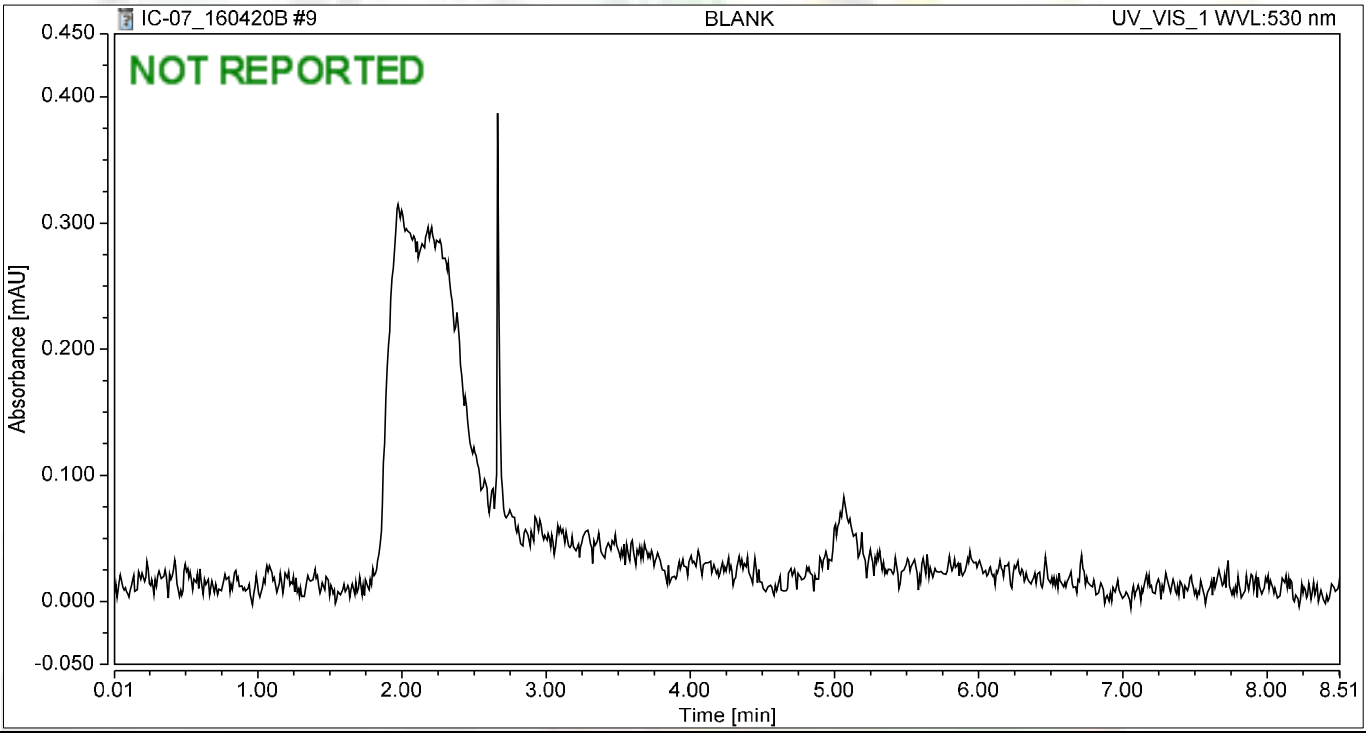
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.188	6.683	66.14	64.35	5.0459
2		7.306	0.258	0.519	14.37	5.00	n.a.
3		8.031	0.350	3.183	19.49	30.65	n.a.
Total:			**1.796**	**10.385**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

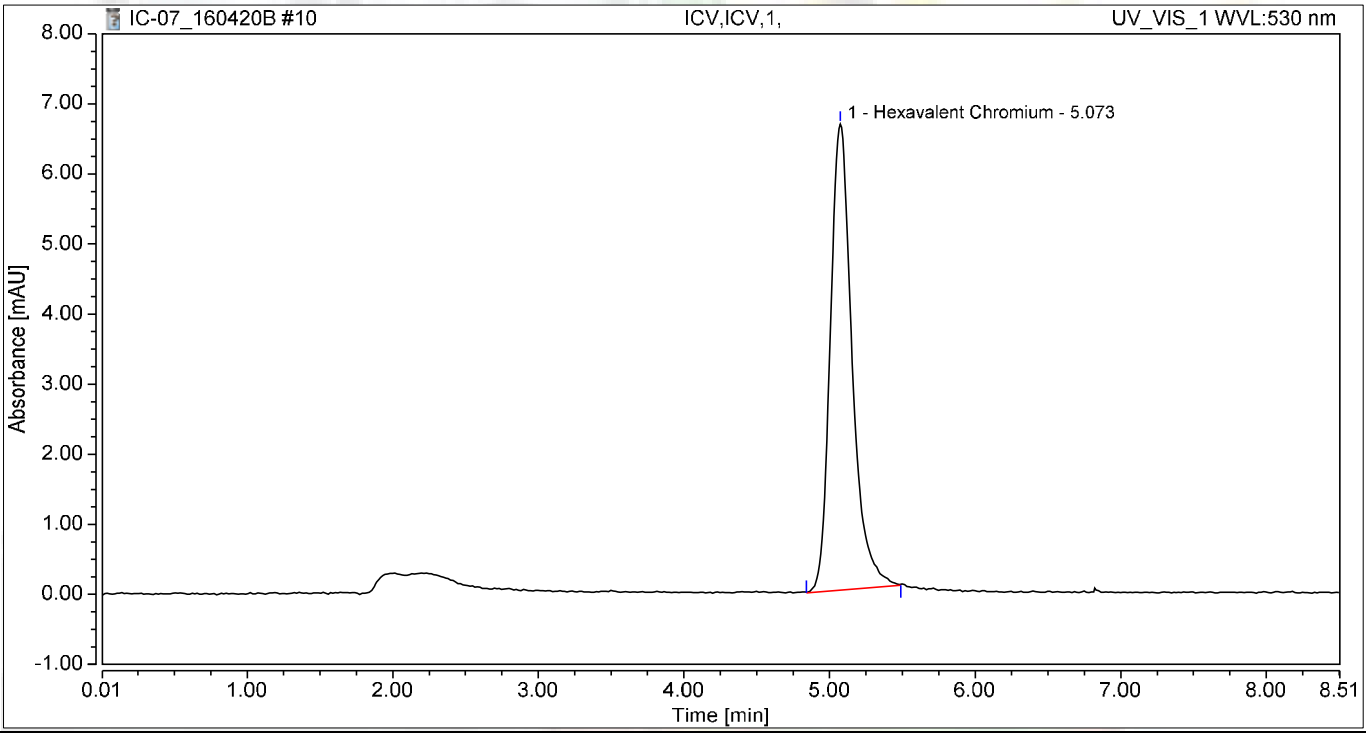
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

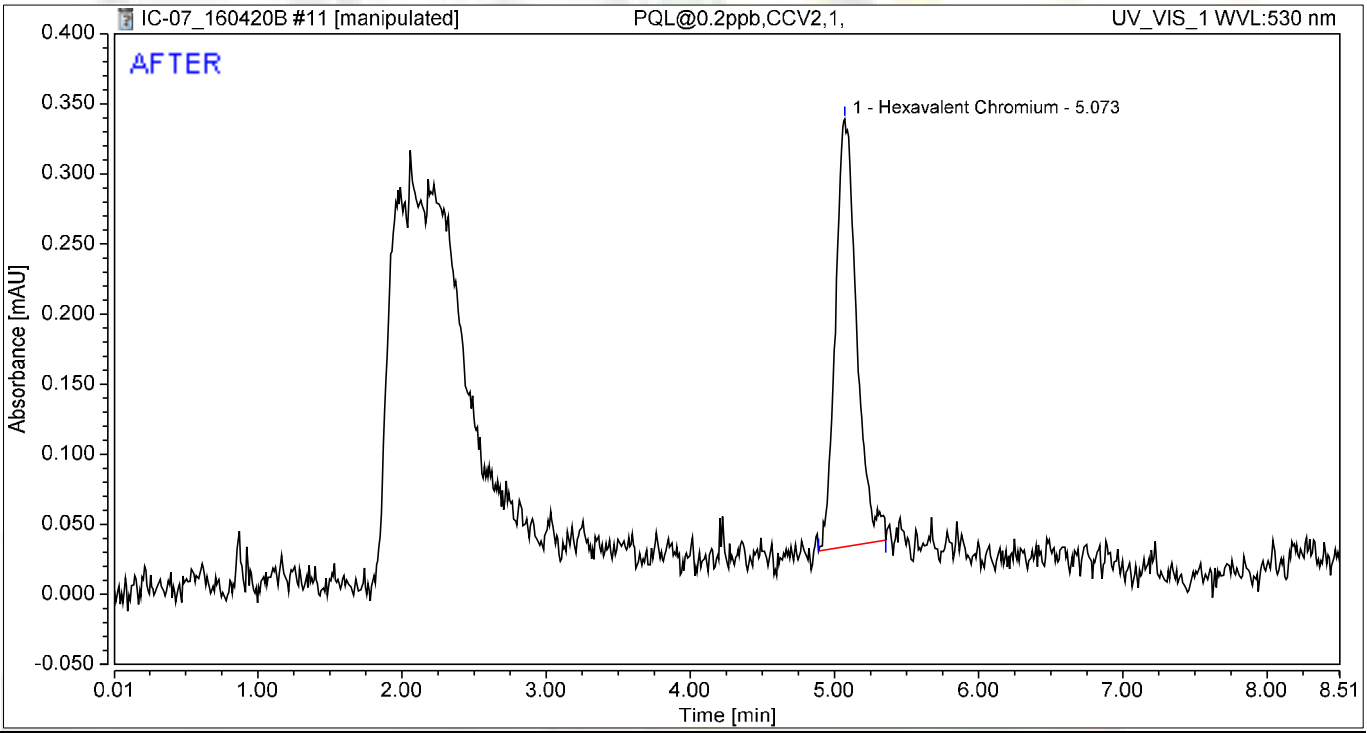
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.157	6.654	100.00	100.00	4.9132
Total:			**1.157**	**6.654**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.052	0.305	100.00	100.00	0.2212
Total:			**0.052**	**0.305**	**100.00**	**100.00**	

4/25/2016

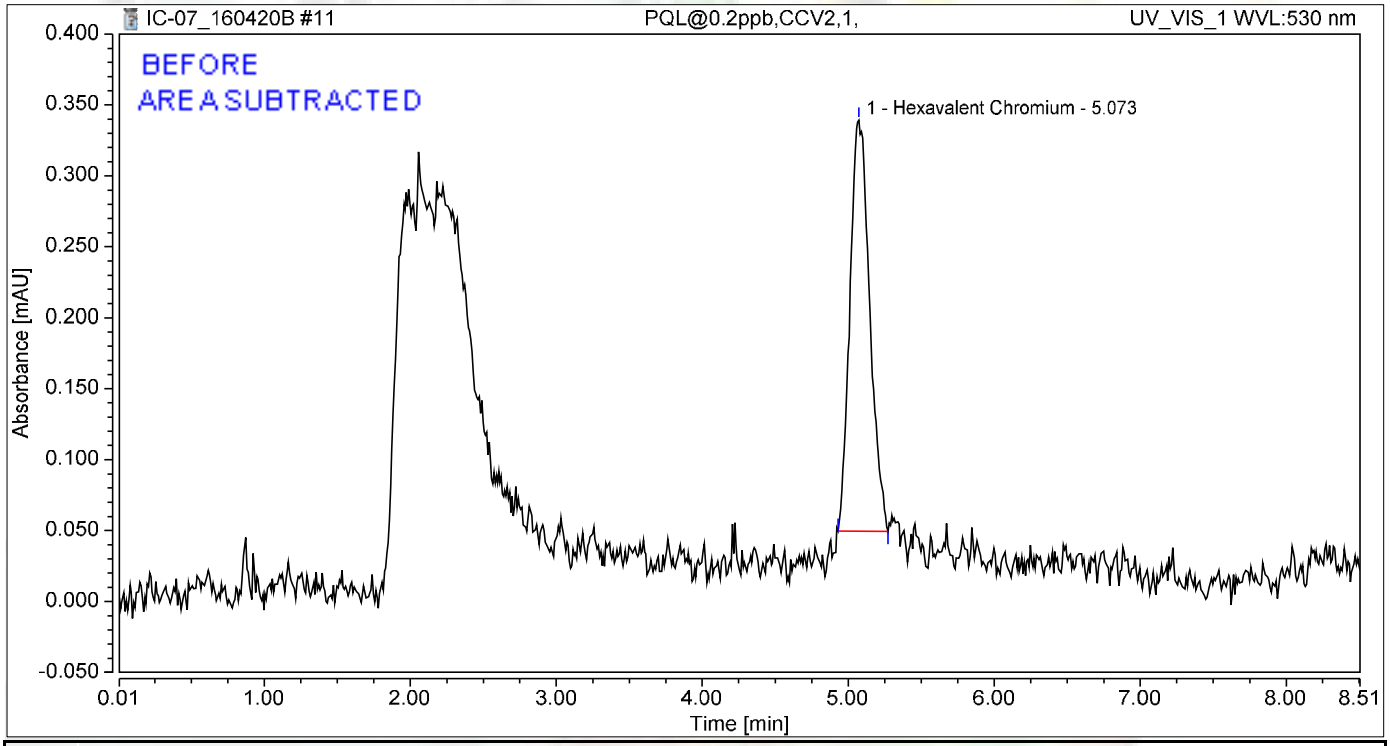
4/27/2016

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.045	0.290	100.00	100.00	0.1921
Total:			**0.045**	**0.290**	**100.00**	**100.00**	

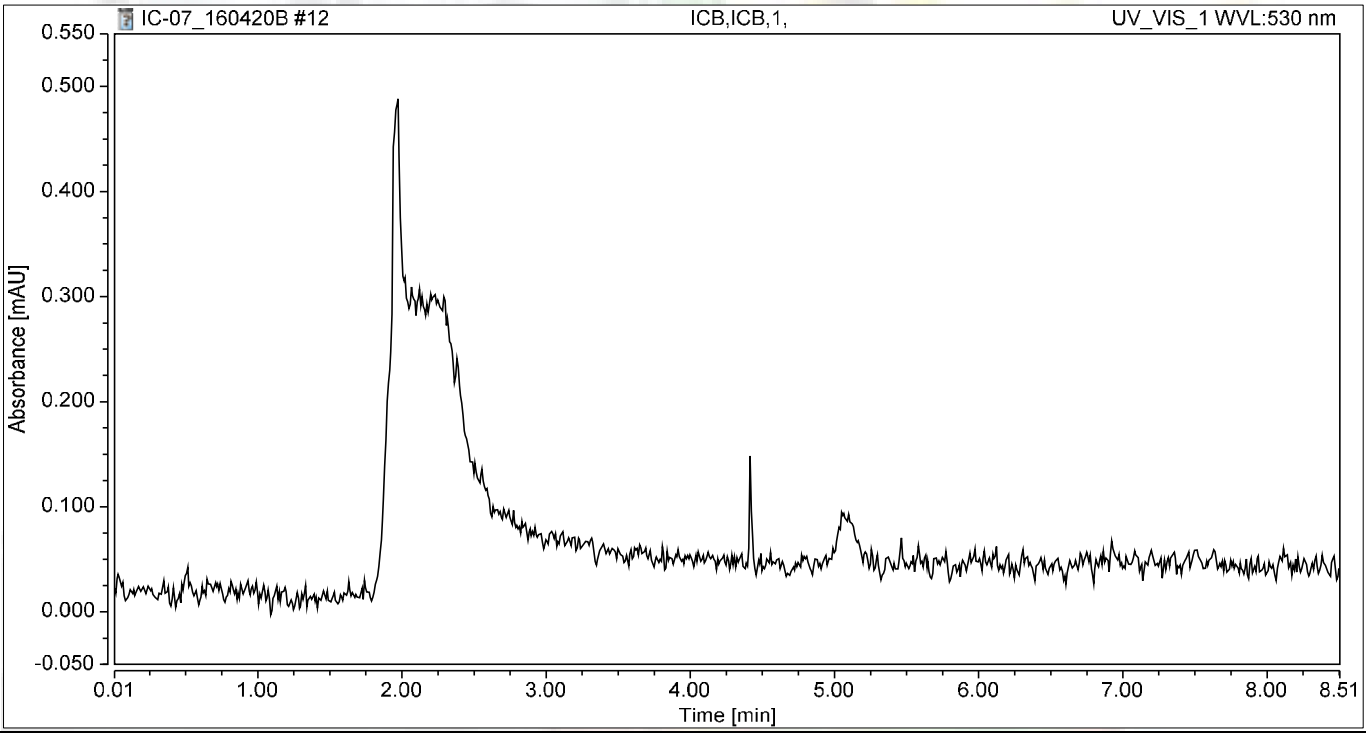
4/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160510A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	BLANK	BLANK	1	Hexavalent Chromium	05/10/16 10:40 AM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	05/10/16 10:51 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	05/10/16 11:01 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/10/16 11:10 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	05/10/16 11:20 AM	Reported
13	MB-R108366	MBLK	1	Hexavalent Chromium	05/10/16 11:29 AM	Reported
14	LCS-R108366	LCS	1	Hexavalent Chromium	05/10/16 11:39 AM	Reported
15	N019716-001A	SAMP	5	Hexavalent Chromium	05/10/16 11:51 AM	Reported
16	N019716-002A	SAMP	1	Hexavalent Chromium	05/10/16 12:02 PM	Reported
17	N019716-003A	SAMP	5	Hexavalent Chromium	05/10/16 12:11 PM	Reported
18	N019716-001AREP	DUP	5	Hexavalent Chromium	05/10/16 12:22 PM	Reported
19	N019716-002AREP	DUP	1	Hexavalent Chromium	05/10/16 12:33 PM	Reported
20	N019716-003AREP	DUP	5	Hexavalent Chromium	05/10/16 12:42 PM	Reported
21	N019611-001A	SAMP	50	Hexavalent Chromium	05/10/16 12:51 PM	Not Reported
22	N019611-001ADUP	DUP	50	Hexavalent Chromium	05/10/16 1:01 PM	Not Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	05/10/16 1:10 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	05/10/16 1:20 PM	Reported
25	N019611-001A	SAMP	20	Hexavalent Chromium	05/10/16 1:29 PM	Reported
26	N019611-001ADUP	DUP	20	Hexavalent Chromium	05/10/16 1:39 PM	Reported
27	N019611-001AMS	MS	20	Hexavalent Chromium	05/10/16 1:48 PM	Reported
28	N019611-001AMSD	MSD	20	Hexavalent Chromium	05/10/16 1:58 PM	Reported
29	N019611-002A	SAMP	50	Hexavalent Chromium	05/10/16 2:07 PM	Reported
30	N019611-003A	SAMP	10	Hexavalent Chromium	05/10/16 2:17 PM	Not Reported
31	N019611-004A	SAMP	1	Hexavalent Chromium	05/10/16 2:26 PM	Reported
32	N019611-005A	SAMP	50	Hexavalent Chromium	05/10/16 2:36 PM	Reported
33	N019611-006A	SAMP	1	Hexavalent Chromium	05/10/16 2:45 PM	Reported
34	N019611-007A	SAMP	50	Hexavalent Chromium	05/10/16 2:54 PM	Reported
35	CCV-3	CCV	1	Hexavalent Chromium	05/10/16 3:04 PM	Reported
36	CCB-3	CCB	1	Hexavalent Chromium	05/10/16 3:13 PM	Reported
37	N019611-008A	SAMP	20	Hexavalent Chromium	05/10/16 3:23 PM	Reported
38	N019611-009A	SAMP	1	Hexavalent Chromium	05/10/16 3:32 PM	Reported
39	N019611-010A	SAMP	10	Hexavalent Chromium	05/10/16 3:42 PM	Reported
40	N019611-011A	SAMP	1	Hexavalent Chromium	05/10/16 3:51 PM	Not Reported
41	N019611-012A	SAMP	1	Hexavalent Chromium	05/10/16 4:01 PM	Reported
42	N019611-013A	SAMP	1	Hexavalent Chromium	05/10/16 4:10 PM	Not Reported
43	N019611-014A	SAMP	1	Hexavalent Chromium	05/10/16 4:20 PM	Reported
44	N019611-015A	SAMP	50	Hexavalent Chromium	05/10/16 4:29 PM	Not Reported
45	N019699-001A	SAMP	1	Hexavalent Chromium	05/10/16 4:39 PM	Reported
46	N019611-003A	SAMP	25	Hexavalent Chromium	05/10/16 4:48 PM	Reported
47	CCV-4	CCV1	1	Hexavalent Chromium	05/10/16 4:57 PM	Reported
48	CCB-4	CCB	1	Hexavalent Chromium	05/10/16 5:07 PM	Reported
49	N019611-011A	SAMP	10	Hexavalent Chromium	05/10/16 5:17 PM	Reported

Nancy 5/18/2016

INJECTION LOG: 160510A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019611-013A	SAMP	5	Hexavalent Chromium	05/10/16 5:28 PM	Reported
51	N019611-015A	SAMP	1	Hexavalent Chromium	05/10/16 5:38 PM	Reported
52	MB-R108381	MBLK	1	Hexavalent Chromium	05/10/16 5:47 PM	Reported
53	LCS-R108381	LCS	1	Hexavalent Chromium	05/10/16 5:57 PM	Reported
54	N019607-001A	SAMP	1	Hexavalent Chromium	05/10/16 6:06 PM	Reported
55	N019607-001ADUP	DUP	1	Hexavalent Chromium	05/10/16 6:16 PM	Reported
56	N019607-001AMS	MS	1	Hexavalent Chromium	05/10/16 6:25 PM	Reported
57	N019607-001AMSD	MSD	1	Hexavalent Chromium	05/10/16 6:35 PM	Reported
58	N019606-006A	SAMP	5	Hexavalent Chromium	05/10/16 6:44 PM	Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/10/16 6:58 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/10/16 7:10 PM	Reported
61	N019606-006AMS	MS	5	Hexavalent Chromium	05/10/16 7:19 PM	Reported
62	N019606-013A	SAMP	20	Hexavalent Chromium	05/10/16 7:29 PM	Reported
63	N019606-013AMS	MS	20	Hexavalent Chromium	05/10/16 7:38 PM	Reported
64	N019607-002A	SAMP	200	Hexavalent Chromium	05/10/16 7:47 PM	Reported
65	N019607-002AMS	MS	200	Hexavalent Chromium	05/10/16 7:57 PM	Reported
66	N019607-003A	SAMP	20	Hexavalent Chromium	05/10/16 8:06 PM	Reported
67	N019607-003AMS	MS	20	Hexavalent Chromium	05/10/16 8:16 PM	Reported
68	N019607-004A	SAMP	1	Hexavalent Chromium	05/10/16 8:25 PM	Reported
69	N019607-004AMS	MS	1	Hexavalent Chromium	05/10/16 8:35 PM	Reported
70	N019607-005A	SAMP	1	Hexavalent Chromium	05/10/16 8:44 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/10/16 8:54 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/10/16 9:03 PM	Reported
73	N019607-005AMS	MS	1	Hexavalent Chromium	05/10/16 9:13 PM	Not Reported
74	N019607-006A	SAMP	1	Hexavalent Chromium	05/10/16 9:22 PM	Not Reported
75	N019607-006AMS	MS	1	Hexavalent Chromium	05/10/16 9:32 PM	Not Reported
76	N019607-007A	SAMP	10	Hexavalent Chromium	05/10/16 9:41 PM	Not Reported
77	N019607-007AMS	MS	10	Hexavalent Chromium	05/10/16 9:50 PM	Not Reported
78	N019607-008A	SAMP	1	Hexavalent Chromium	05/10/16 10:00 PM	Not Reported
79	N019607-008AMS	MS	1	Hexavalent Chromium	05/10/16 10:09 PM	Not Reported
80	N019607-009A	SAMP	1	Hexavalent Chromium	05/10/16 10:19 PM	Not Reported
81	N019607-009AMS	MS	1	Hexavalent Chromium	05/10/16 10:28 PM	Not Reported
82	N019607-010A	SAMP	1	Hexavalent Chromium	05/10/16 10:38 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/10/16 10:47 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/10/16 10:57 PM	Reported
85	N019607-010AMS	MS	1	Hexavalent Chromium	05/10/16 11:06 PM	Not Reported
86	N019607-011A	SAMP	1	Hexavalent Chromium	05/10/16 11:16 PM	Reported
87	N019607-011AMS	MS	1	Hexavalent Chromium	05/10/16 11:25 PM	Reported
88	N019607-005A	SAMP	5	Hexavalent Chromium	05/10/16 11:34 PM	Reported
89	N019607-005AMS	MS	5	Hexavalent Chromium	05/10/16 11:44 PM	Reported
90	N019607-009A	SAMP	5	Hexavalent Chromium	05/10/16 11:53 PM	Reported
91	N019607-009AMS	MS	5	Hexavalent Chromium	05/11/16 12:03 AM	Reported
92	N019612-001A	SAMP	10	Hexavalent Chromium	05/11/16 12:12 AM	Reported
93	N019612-002A	SAMP	10	Hexavalent Chromium	05/11/16 12:22 AM	Reported
94	N019612-003A	SAMP	1	Hexavalent Chromium	05/11/16 12:31 AM	Reported
95	CCV-8	CCV1	1	Hexavalent Chromium	05/11/16 12:41 AM	Reported
96	CCB-8	CCB	1	Hexavalent Chromium	05/11/16 12:50 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160510A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/May/16 07:11:02**
No. of Injections:	**99**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	BLANK	1	1000	Unknown		05/10/2016 10:40	Finished	
9	BLANK	2	1000	Unknown		05/10/2016 10:51	Finished	
10	CCV-1,CCV,1,	3	1000	Unknown		05/10/2016 11:01	Finished	CCV @5ppb, IWST-160401A
11	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/10/2016 11:10	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	5	1000	Unknown		05/10/2016 11:20	Finished	CCB R160502C
13	MB-H2O,MBLK,1	6	1000	Unknown		05/10/2016 11:29	Finished	MB R160407B
14	LCS-H2O,LCS,1	7	1000	Unknown		05/10/2016 11:39	Finished	LCS, IWST-160401B
15	N019716-001A,SAMP	8	1000	Unknown		05/10/2016 11:51	Finished	SAMP, 2.0>10mL
16	N019716-002A,SAMP	9	1000	Unknown		05/10/2016 12:02	Finished	SAMP, 10mL
17	N019716-003A,SAMP	10	1000	Unknown		05/10/2016 12:11	Finished	SAMP, 2.0>10mL
18	N019716-001AREP,D	11	1000	Unknown		05/10/2016 12:22	Finished	DUP, 2.0>10mL
19	N019716-002AREP,D	12	1000	Unknown		05/10/2016 12:33	Finished	DUP, 10mL
20	N019716-003AREP,D	13	1000	Unknown		05/10/2016 12:42	Finished	DUP, 2.0>10mL
21	N019611-001A,SAMP	14	1000	Unknown		05/10/2016 12:51	Finished	SAMP, 0.2>10mL
22	N019611-001ADUP,D	15	1000	Unknown		05/10/2016 13:01	Finished	DUP, 0.2>10mL
23	CCV-2,CCV1,1,	16	1000	Unknown		05/10/2016 13:10	Finished	CCV @10ppb, IWST-160401A
24	CCB-2,CCB,1,	17	1000	Unknown		05/10/2016 13:20	Finished	CCB R160426G
25	N019611-001A,SAMP	18	1000	Unknown		05/10/2016 13:29	Finished	SAMP, 0.5>10mL
26	N019611-001ADUP,D	19	1000	Unknown		05/10/2016 13:39	Finished	DUP, 0.5>10mL
27	N019611-001AMS,MS	20	1000	Unknown		05/10/2016 13:48	Finished	MS (5ppb) , IWST-160401B, 0.
28	N019611-001AMSD,M	21	1000	Unknown		05/10/2016 13:58	Finished	MSD (5ppb) , IWST-160401B, (
29	N019611-002A,SAMP	22	1000	Unknown		05/10/2016 14:07	Finished	SAMP, 0.2>10mL
30	N019611-003A,SAMP	23	1000	Unknown		05/10/2016 14:17	Finished	SAMP, 1.0>10mL
31	N019611-004A,SAMP	24	1000	Unknown		05/10/2016 14:26	Finished	SAMP, 10mL
32	N019611-005A,SAMP	25	1000	Unknown		05/10/2016 14:36	Finished	SAMP, 0.2>10mL
33	N019611-006A,SAMP	26	1000	Unknown		05/10/2016 14:45	Finished	SAMP, 10mL
34	N019611-007A,SAMP	27	1000	Unknown		05/10/2016 14:54	Finished	SAMP, 0.2>10mL
35	CCV-3,CCV,1,	28	1000	Unknown		05/10/2016 15:04	Finished	CCV @5pb, IWST-160401A
36	CCB-3,CCB,1,	29	1000	Unknown		05/10/2016 15:13	Finished	CCB
37	N019611-008A,SAMP	30	1000	Unknown		05/10/2016 15:23	Finished	SAMP, 0.5>10mL
38	N019611-009A,SAMP	31	1000	Unknown		05/10/2016 15:32	Finished	SAMP, 10mL
39	N019611-010A,SAMP	32	1000	Unknown		05/10/2016 15:42	Finished	SAMP, 1.0>10mL
40	N019611-011A,SAMP	33	1000	Unknown		05/10/2016 15:51	Finished	SAMP, 10mL
41	N019611-012A,SAMP	34	1000	Unknown		05/10/2016 16:01	Finished	SAMP, 10mL
42	N019611-013A,SAMP	35	1000	Unknown		05/10/2016 16:10	Finished	SAMP, 10mL
43	N019611-014A,SAMP	36	1000	Unknown		05/10/2016 16:20	Finished	SAMP, 10mL
44	N019611-015A,SAMP	37	1000	Unknown		05/10/2016 16:29	Finished	SAMP, 0.2>10mL
45	N019699-001A,SAMP	38	1000	Unknown		05/10/2016 16:39	Finished	SAMP, 10mL
46	N019611-003A,SAMP	39	1000	Unknown		05/10/2016 16:48	Finished	SAMP, 0.4>10mL
47	CCV-4,CCV1,1,	40	1000	Unknown		05/10/2016 16:57	Finished	CCV @10ppb, IWST-160401A
48	CCB-4,CCB,1,	41	1000	Unknown		05/10/2016 17:07	Finished	CCB
49	N019611-011A,SAMP	1	1000	Unknown		05/10/2016 17:17	Finished	SAMP, 1.0>10mL
50	N019611-013A,SAMP	2	1000	Unknown		05/10/2016 17:28	Finished	SAMP, 2.0>10mL
51	N019611-015A,SAMP	3	1000	Unknown		05/10/2016 17:38	Finished	SAMP, 10mL
52	MB-H2O,MBLK,1	4	1000	Unknown		05/10/2016 17:47	Finished	MB R160426G
53	LCS-H2O,LCS,1	5	1000	Unknown		05/10/2016 17:57	Finished	LCS, IWST-160401B
54	N019607-001A,SAMP	6	1000	Unknown		05/10/2016 18:06	Finished	SAMP, 10mL
55	N019607-001ADUP,D	7	1000	Unknown		05/10/2016 18:16	Finished	DUP, 10mL
56	N019607-001AMS,MS	8	1000	Unknown		05/10/2016 18:25	Finished	MS (1ppb), IWST-160401B, 10
57	N019607-001AMSD,M	9	1000	Unknown		05/10/2016 18:35	Finished	MSD (1ppb), IWST-160401B, 1
58	N019606-006A,SAMP	10	1000	Unknown		05/10/2016 18:44	Finished	SAMP, 2.0>10mL
59	CCV-5,CCV,1,	11	1000	Unknown		05/10/2016 18:58	Finished	CCV @5pb, IWST-160401A
60	CCB-5,CCB,1,	12	1000	Unknown		05/10/2016 19:10	Finished	CCB

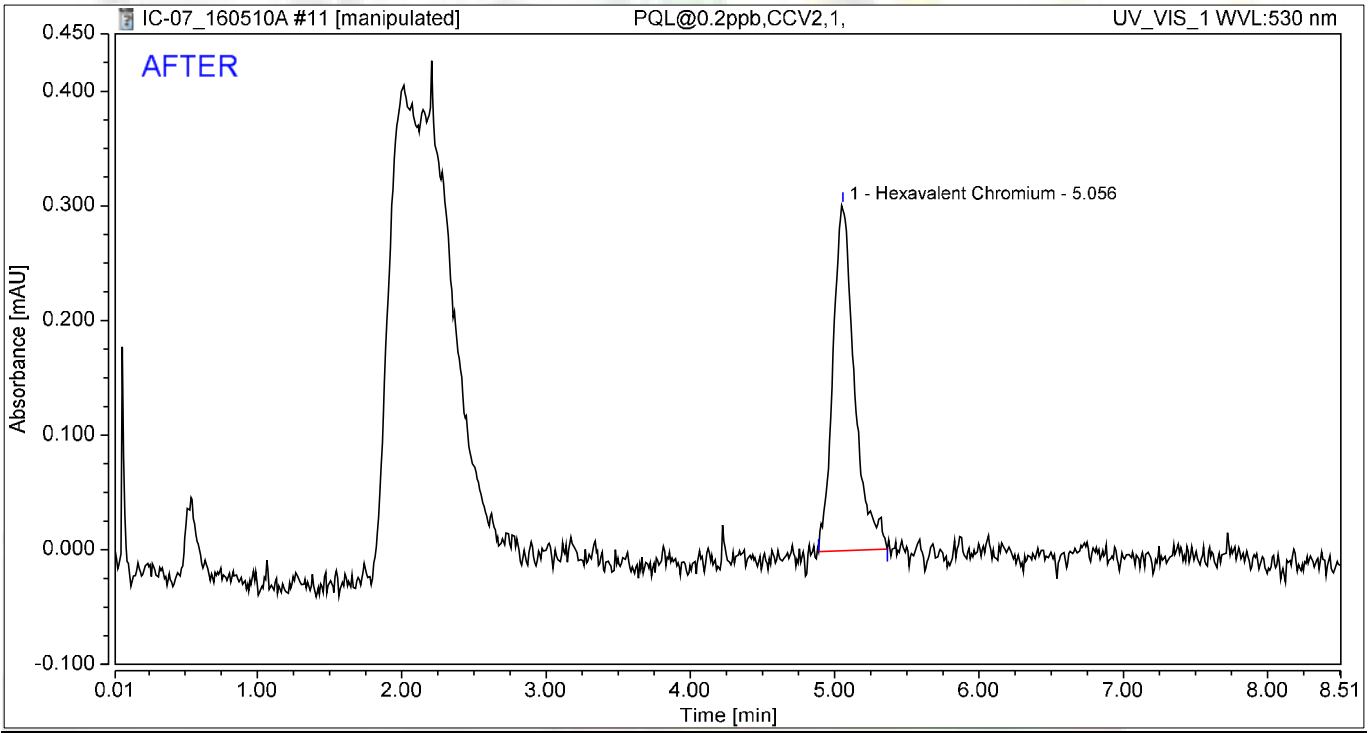
61	N019606-006AMS,MS	13	1000	Unknown		05/10/2016 19:19	Finished	MS (5ppb), IWST-160401B, 2.0
62	N019606-013A,SAMP	14	1000	Unknown		05/10/2016 19:29	Finished	SAMP, 0.5>10mL
63	N019606-013AMS,MS	15	1000	Unknown		05/10/2016 19:38	Finished	MS (5ppb), IWST-160401B, 0.5
64	N019607-002A,SAMP	16	1000	Unknown		05/10/2016 19:47	Finished	SAMP, 50uL>10mL
65	N019607-002AMS,MS	17	1000	Unknown		05/10/2016 19:57	Finished	MS (5ppb), IWST-160401B, 50
66	N019607-003A,SAMP	18	1000	Unknown		05/10/2016 20:06	Finished	SAMP, 0.5>10mL
67	N019607-003AMS,MS	19	1000	Unknown		05/10/2016 20:16	Finished	MS (5ppb), IWST-160401B, 0.5
68	N019607-004A,SAMP	20	1000	Unknown		05/10/2016 20:25	Finished	SAMP, 10mL
69	N019607-004AMS,MS	21	1000	Unknown		05/10/2016 20:35	Finished	MS (1ppb), IWST-160401B, 10
70	N019607-005A,SAMP	22	1000	Unknown		05/10/2016 20:44	Finished	SAMP, 10mL
71	CCV-6,CCV1,1,	23	1000	Unknown		05/10/2016 20:54	Finished	CCV @10ppb, IWST-160401A
72	CCB-6,CCB,1,	24	1000	Unknown		05/10/2016 21:03	Finished	CCB
73	N019607-005AMS,MS	25	1000	Unknown		05/10/2016 21:13	Finished	MS (1ppb), IWST-160401B, 10
74	N019607-006A,SAMP	26	1000	Unknown		05/10/2016 21:22	Finished	SAMP, 10mL
75	N019607-006AMS,MS	27	1000	Unknown		05/10/2016 21:32	Finished	MS (1ppb), IWST-160401B, 10
76	N019607-007A,SAMP	28	1000	Unknown		05/10/2016 21:41	Finished	SAMP, 1.0>10mL
77	N019607-007AMS,MS	29	1000	Unknown		05/10/2016 21:50	Finished	MS (5ppb), IWST-160401B, 1.0
78	N019607-008A,SAMP	30	1000	Unknown		05/10/2016 22:00	Finished	SAMP, 10mL
79	N019607-008AMS,MS	31	1000	Unknown		05/10/2016 22:09	Finished	MS (1ppb), IWST-160401B, 10
80	N019607-009A,SAMP	32	1000	Unknown		05/10/2016 22:19	Finished	SAMP, 10mL
81	N019607-009AMS,MS	33	1000	Unknown		05/10/2016 22:28	Finished	MS (1ppb), IWST-160401B, 10
82	N019607-010A,SAMP	34	1000	Unknown		05/10/2016 22:38	Finished	SAMP, 10mL
83	CCV-7,CCV,1,	35	1000	Unknown		05/10/2016 22:47	Finished	CCV @5pb, IWST-160401A
84	CCB-7,CCB,1,	36	1000	Unknown		05/10/2016 22:57	Finished	CCB
85	N019607-010AMS,MS	37	1000	Unknown		05/10/2016 23:06	Finished	MS (1ppb), IWST-160401B, 10
86	N019607-011A,SAMP	38	1000	Unknown		05/10/2016 23:16	Finished	SAMP, 10mL
87	N019607-011AMS,MS	39	1000	Unknown		05/10/2016 23:25	Finished	MS (1ppb), IWST-160401B, 10
88	N019607-005A,SAMP	40	1000	Unknown		05/10/2016 23:34	Finished	SAMP, 2.0>10mL
89	N019607-005AMS,MS	41	1000	Unknown		05/10/2016 23:44	Finished	MS (1ppb), IWST-160401B, 2.0
90	N019607-009A,SAMP	42	1000	Unknown		05/10/2016 23:53	Finished	SAMP, 2.0>10mL
91	N019607-009AMS,MS	43	1000	Unknown		05/11/2016 00:03	Finished	MS (1ppb), IWST-160401B, 2.0
92	N019612-001A,SAMP	44	1000	Unknown		05/11/2016 00:12	Finished	SAMP, 1.0>10mL
93	N019612-002A,SAMP	45	1000	Unknown		05/11/2016 00:22	Finished	SAMP, 1.0>10mL
94	N019612-003A,SAMP	46	1000	Unknown		05/11/2016 00:31	Finished	SAMP, 10mL
95	CCV-8,CCV1,1,	47	1000	Unknown		05/11/2016 00:41	Finished	CCV @10ppb, IWST-160401A
96	CCB-8,CCB,1,	48	1000	Unknown		05/11/2016 00:50	Finished	CCB
97	SHUTDOWN	49	1000	Unknown		05/11/2016 01:00	Finished	
98	Eluent: R160509A, R	50	1000	Unknown		n.a.	Finished	Eluent
99	PCR: R160509B	51	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.052	0.302	100.00	100.00	0.2220
Total:			**0.052**	**0.302**	**100.00**	**100.00**	

5/16/2016

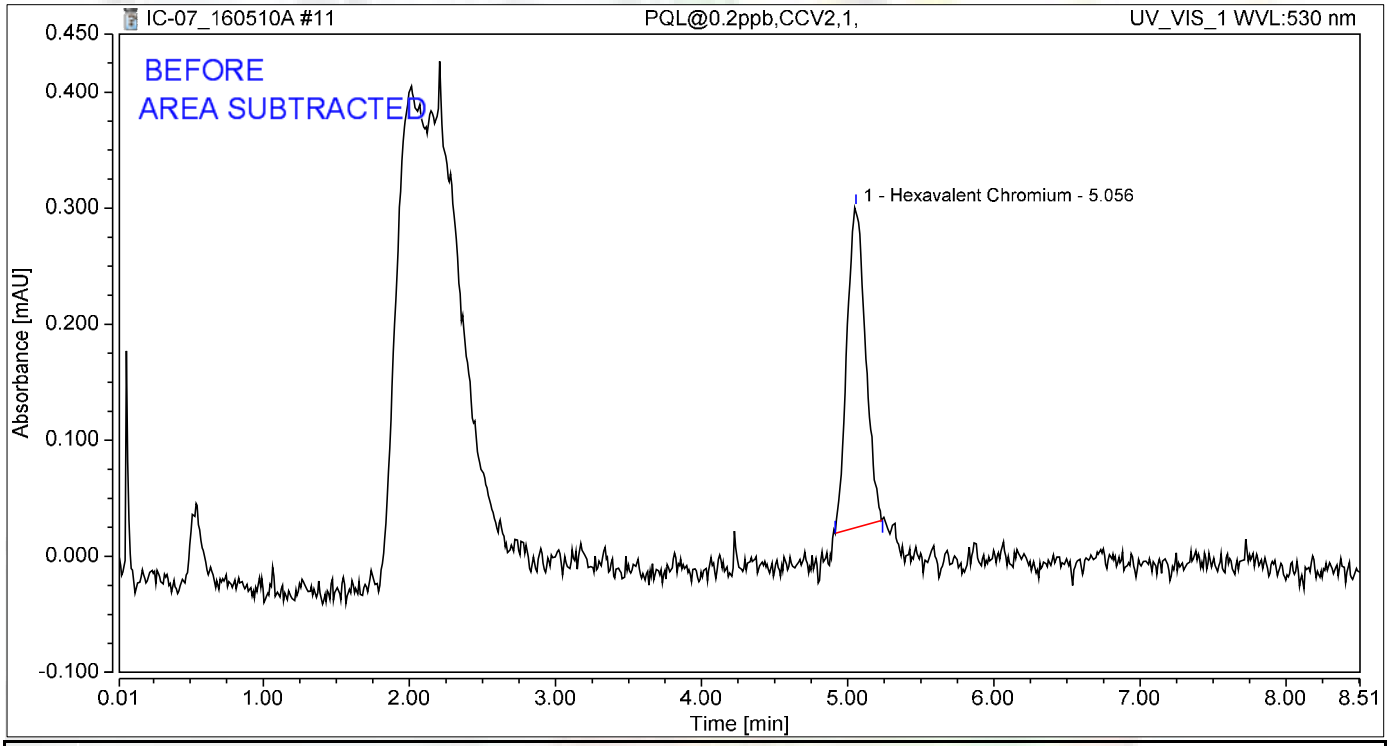
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.041	0.276	100.00	100.00	0.1726
Total:			**0.041**	**0.276**	**100.00**	**100.00**	

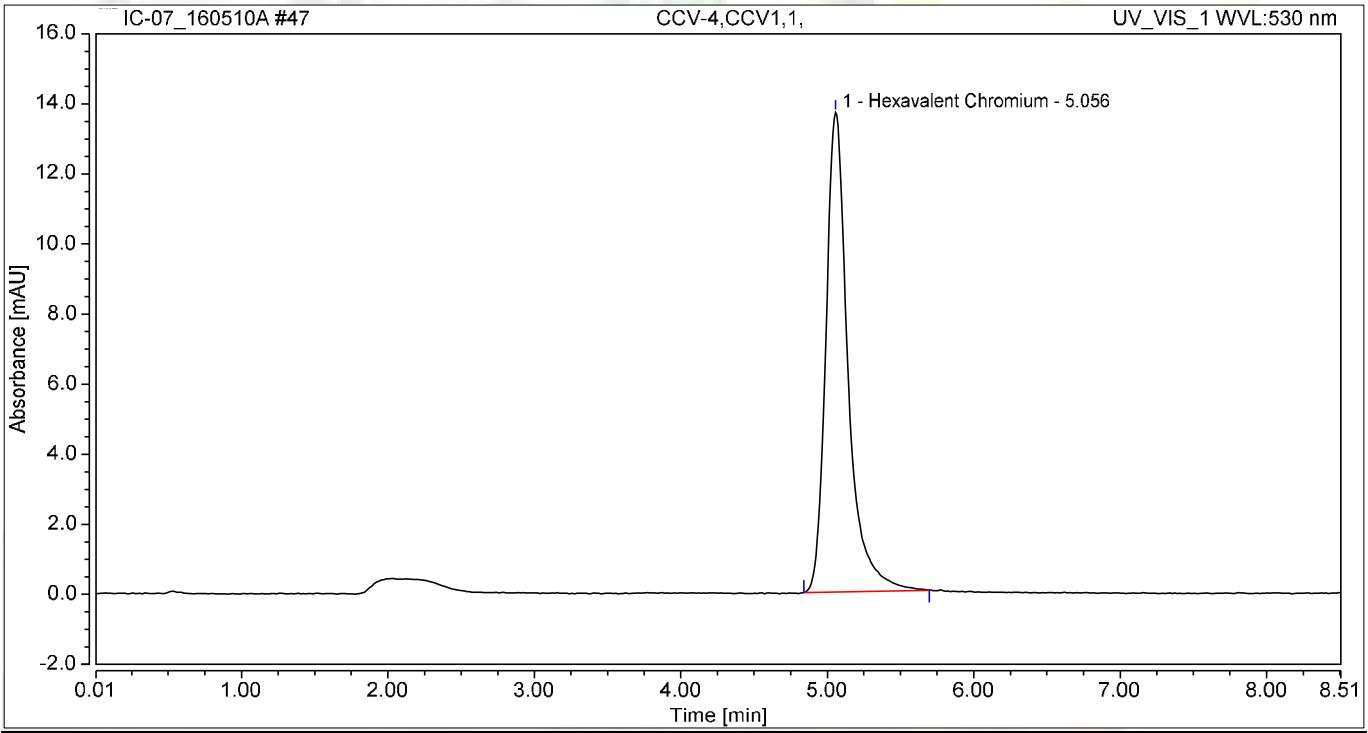
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

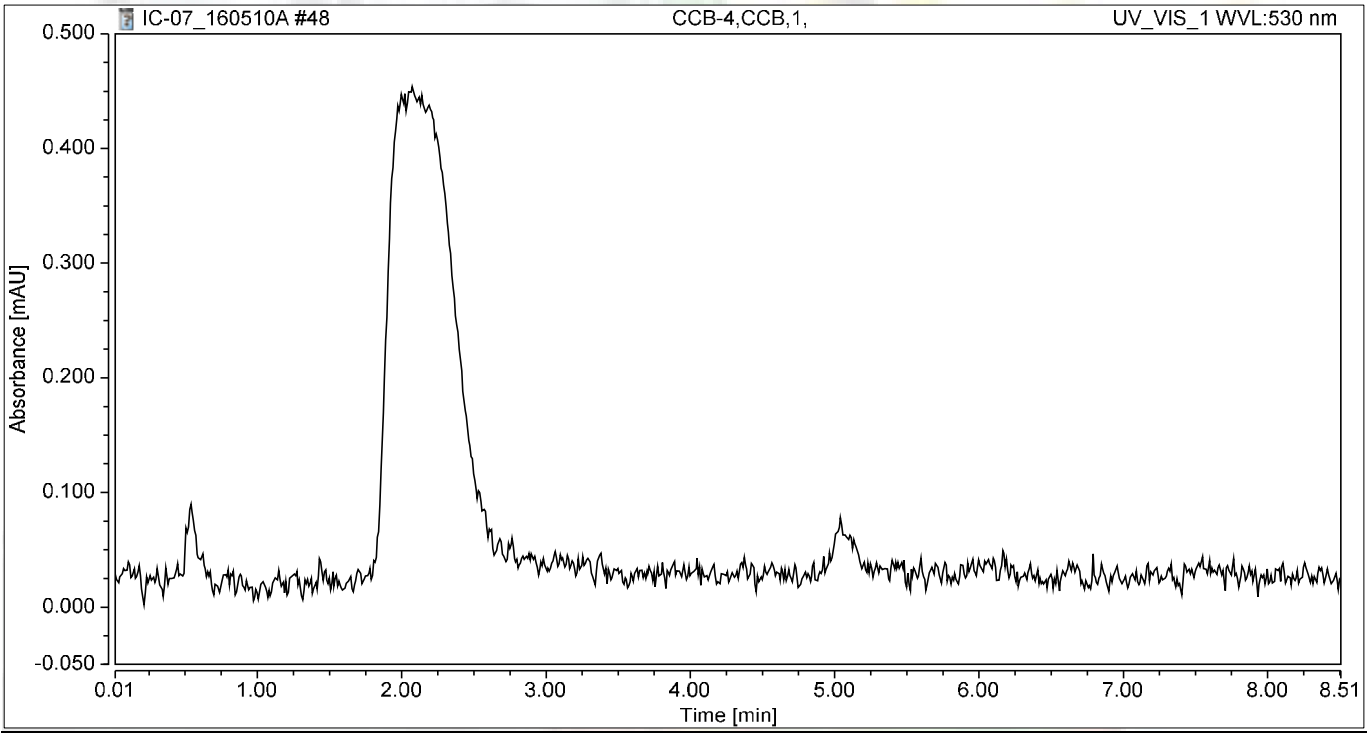
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.399	13.689	100.00	100.00	10.1899
Total:			**2.399**	**13.689**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

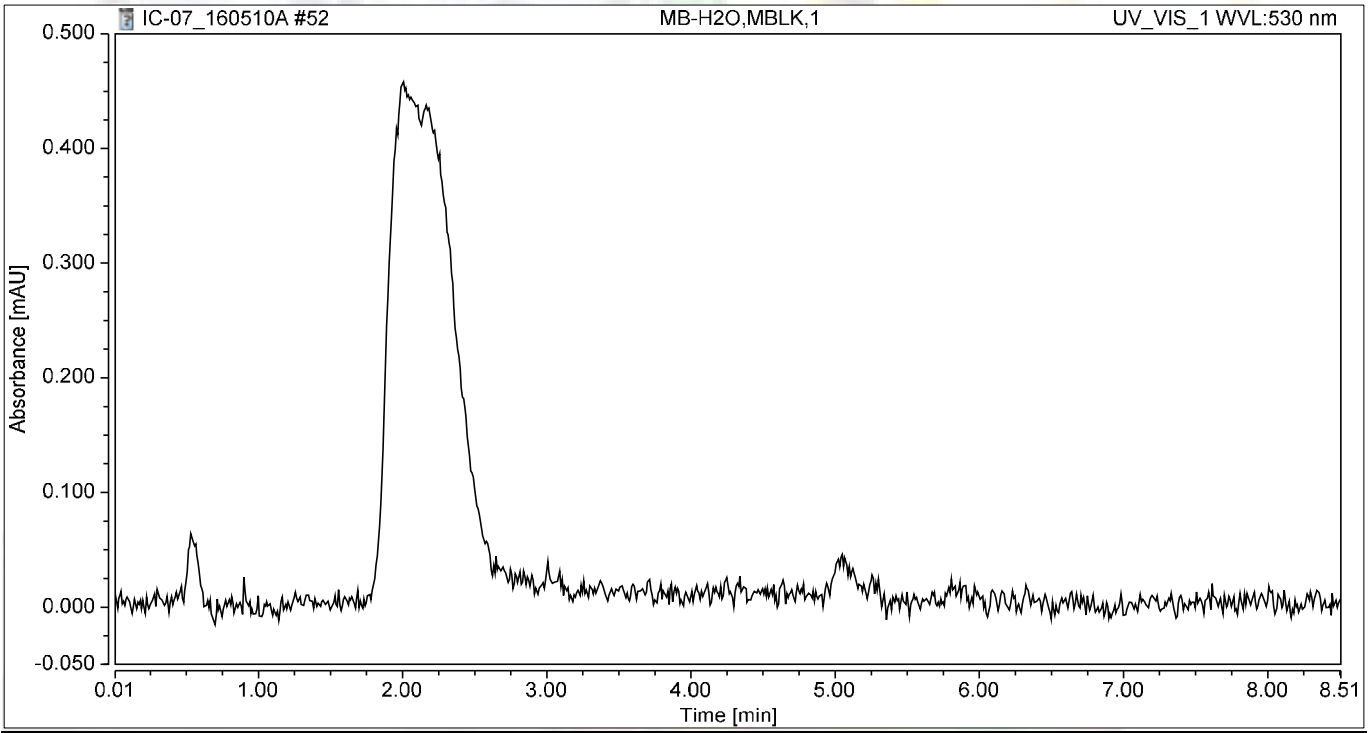
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

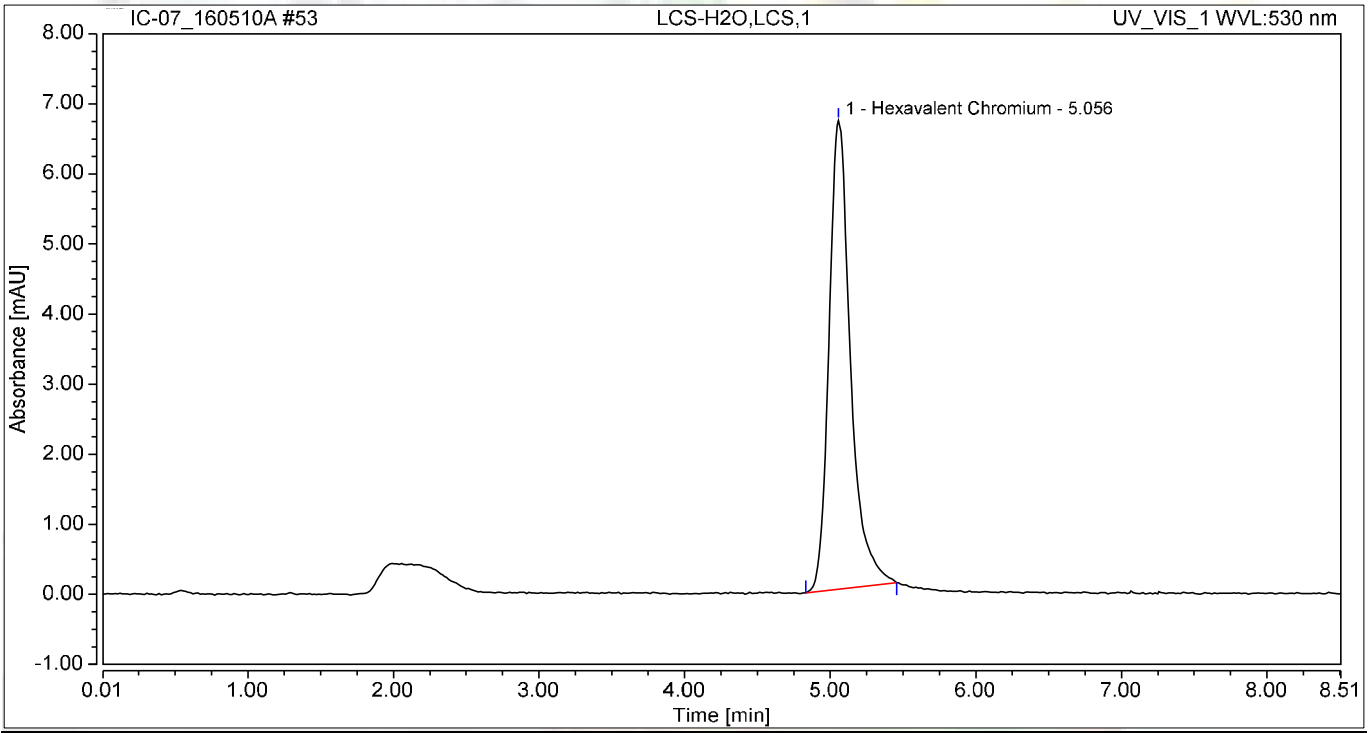
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

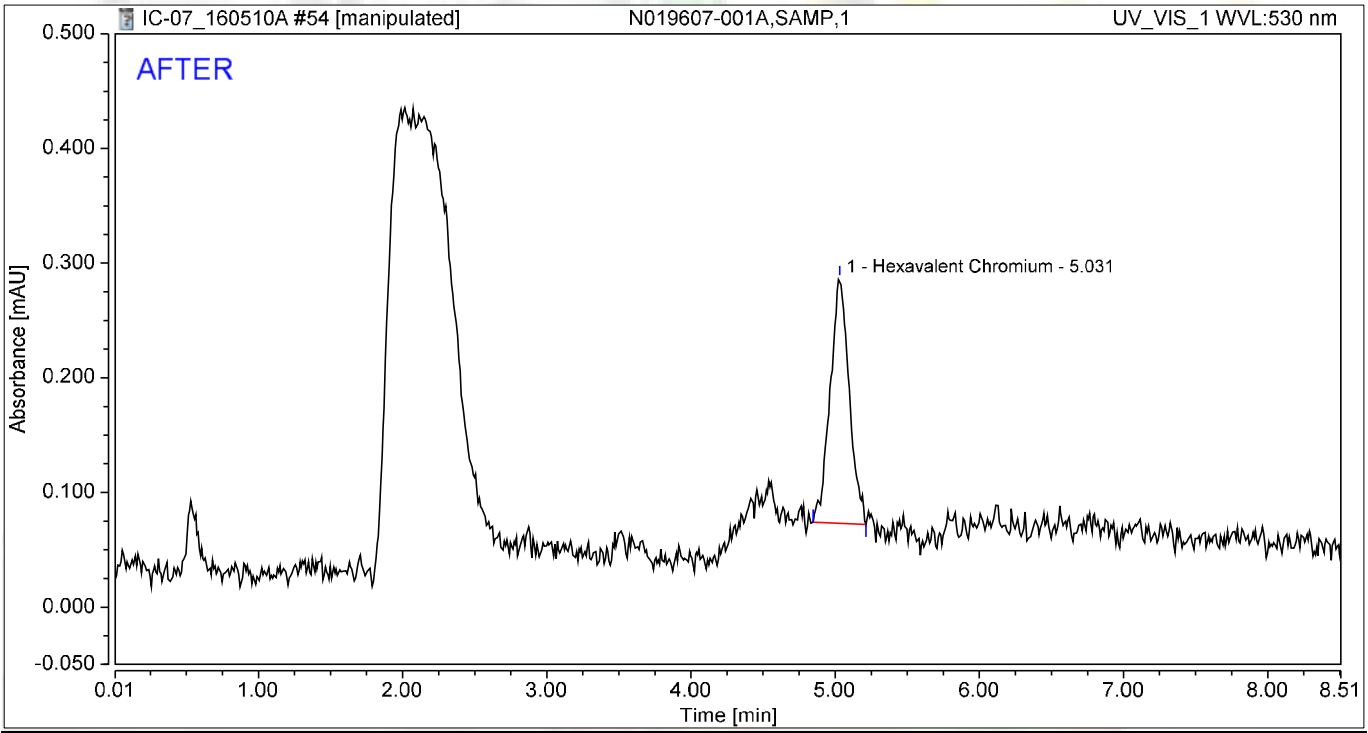
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.148	6.693	100.00	100.00	4.8748
Total:			**1.148**	**6.693**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.033	0.213	100.00	100.00	0.1387
Total:			**0.033**	**0.213**	**100.00**	**100.00**	

jas 5/16/2016

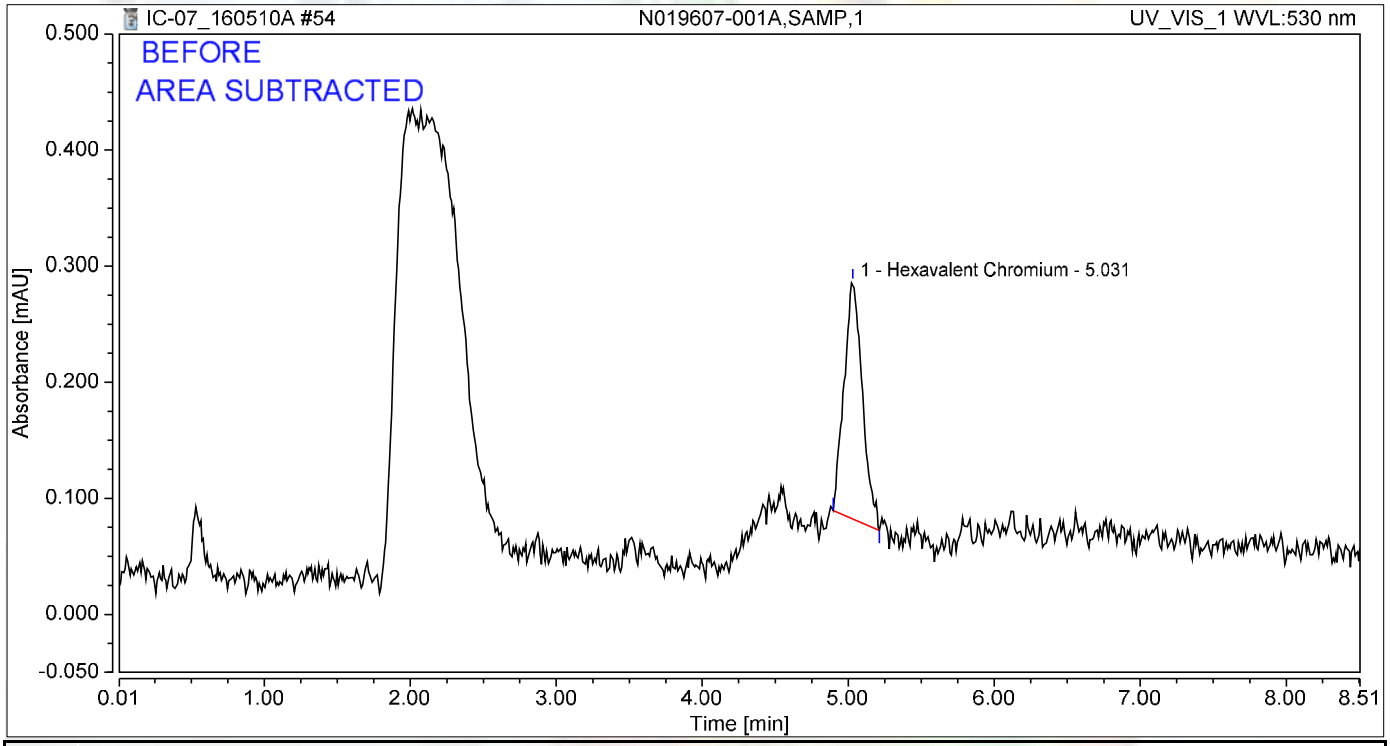
Nancy 5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.030	0.204	100.00	100.00	0.1253
Total:			**0.030**	**0.204**	**100.00**	**100.00**	

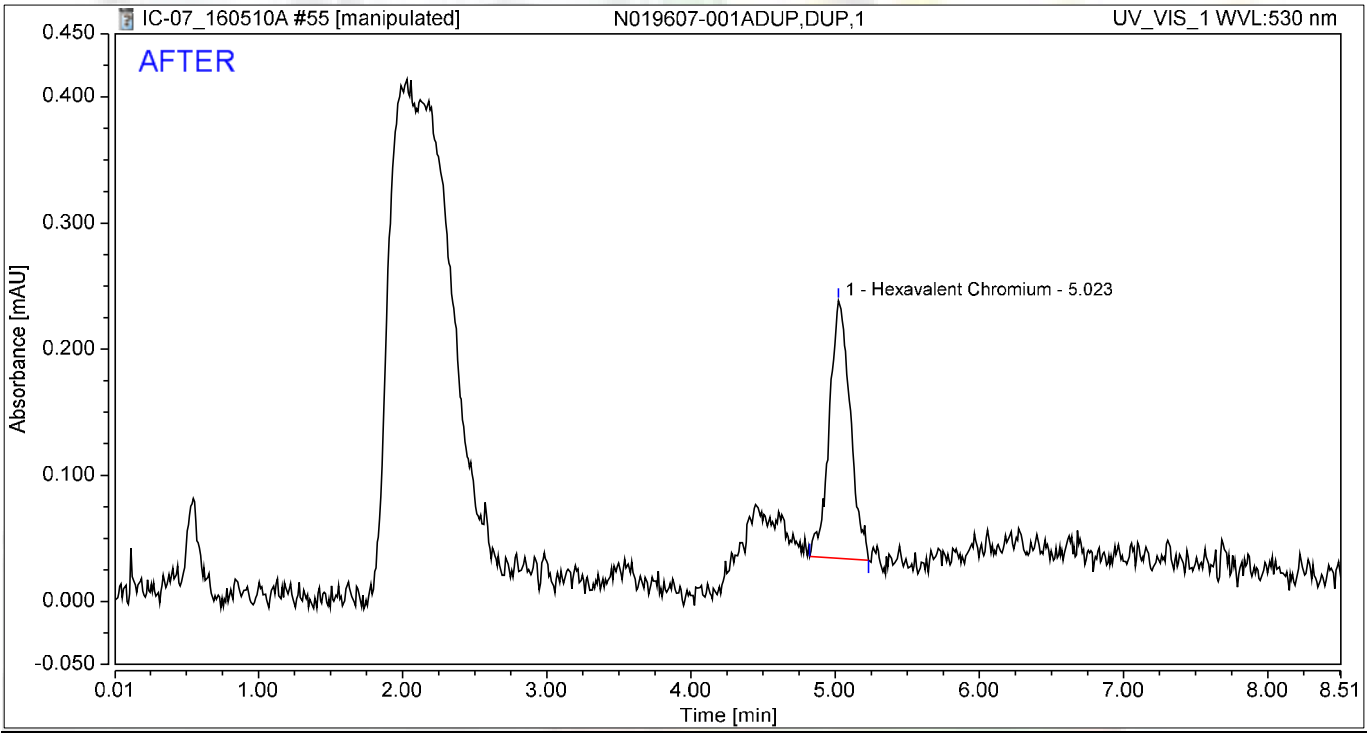
JAS 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.034	0.204	100.00	100.00	0.1453
Total:			**0.034**	**0.204**	**100.00**	**100.00**	

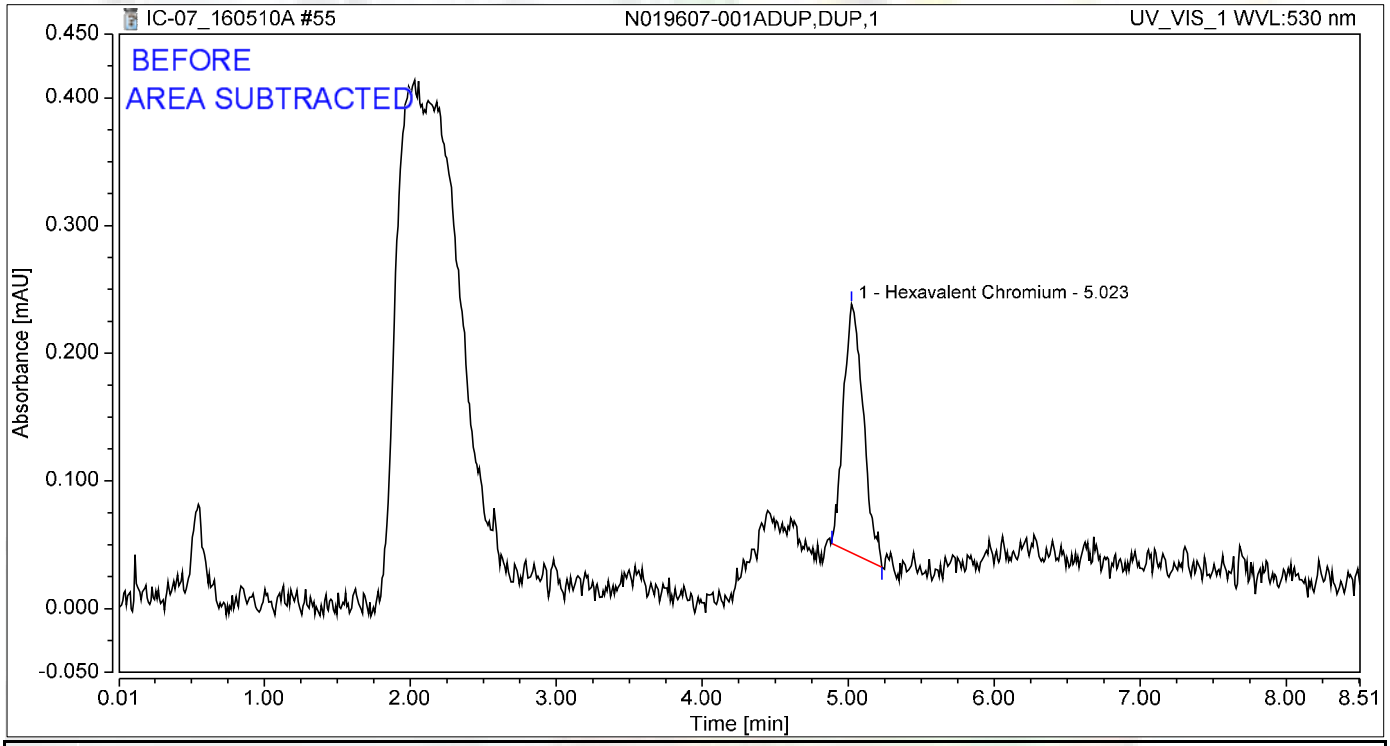
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.031	0.195	100.00	100.00	0.1300
Total:			**0.031**	**0.195**	**100.00**	**100.00**	

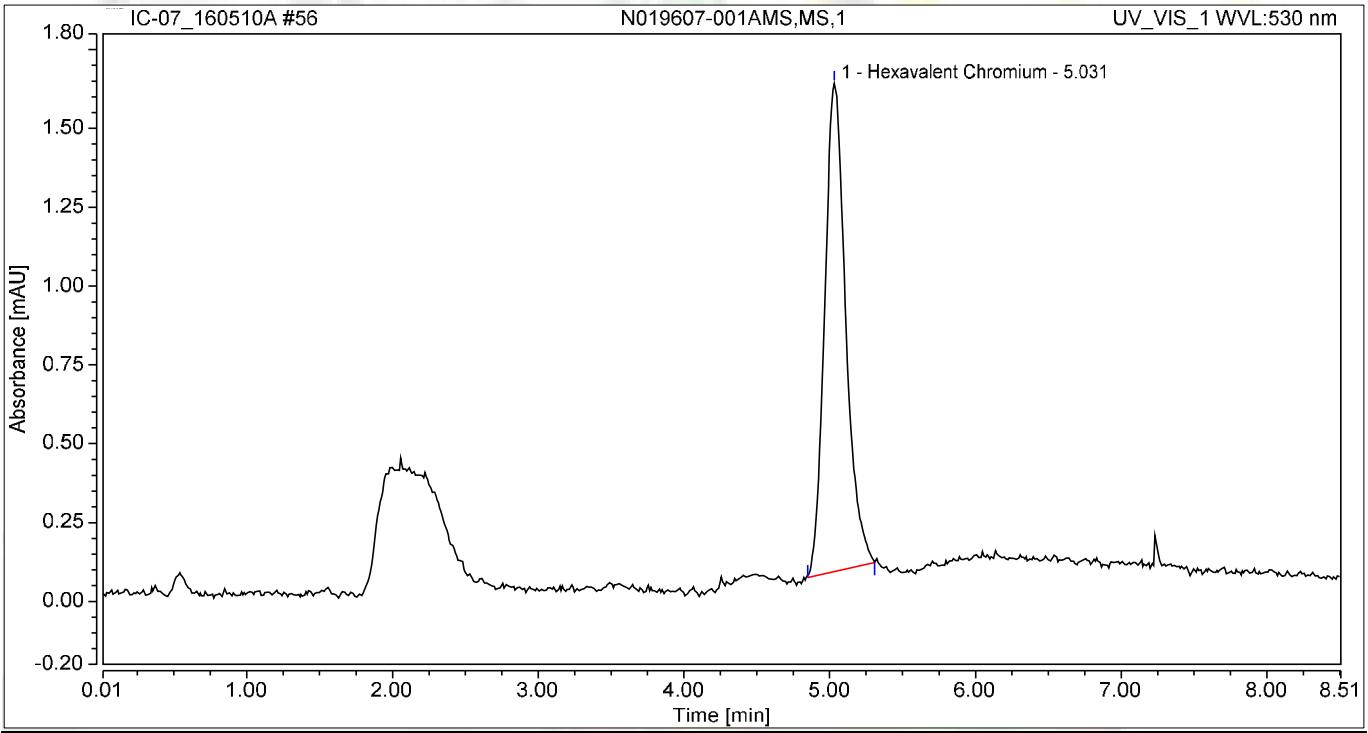
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

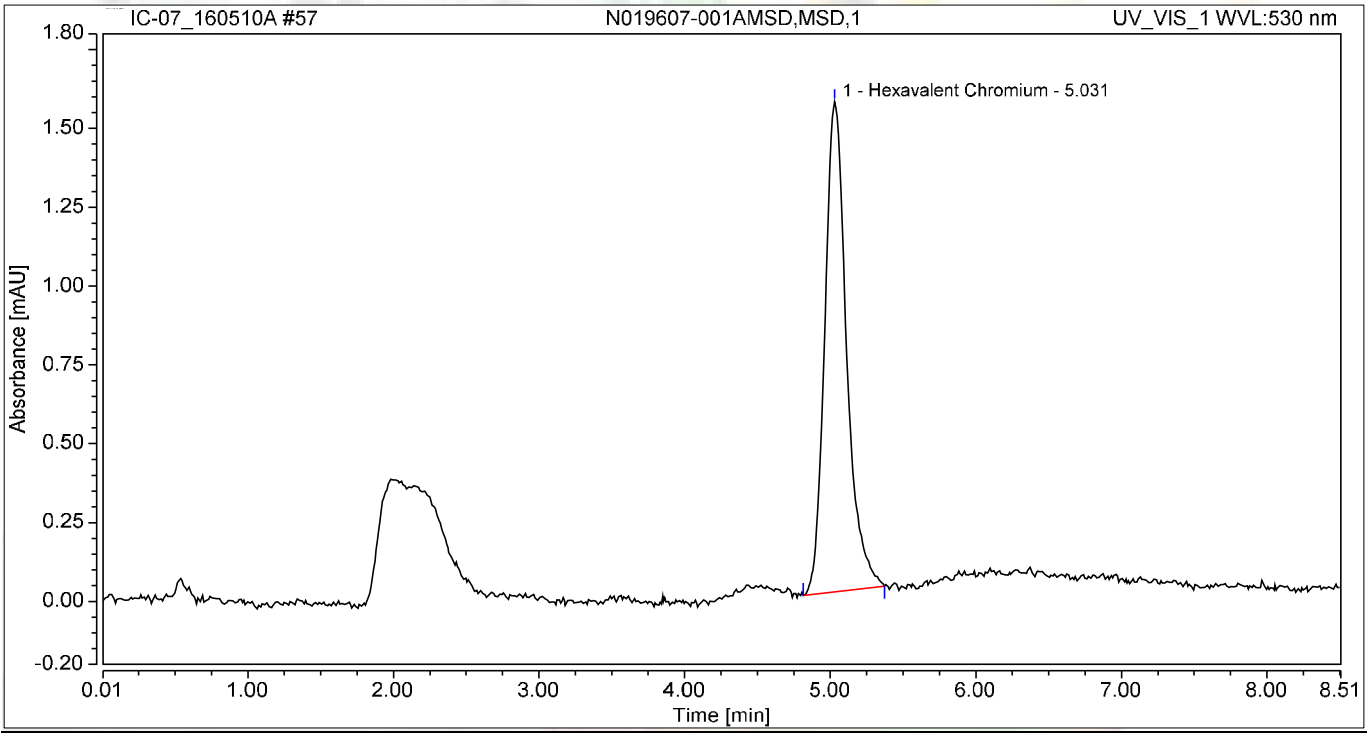
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.259	1.548	100.00	100.00	1.1021
Total:			**0.259**	**1.548**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-001AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

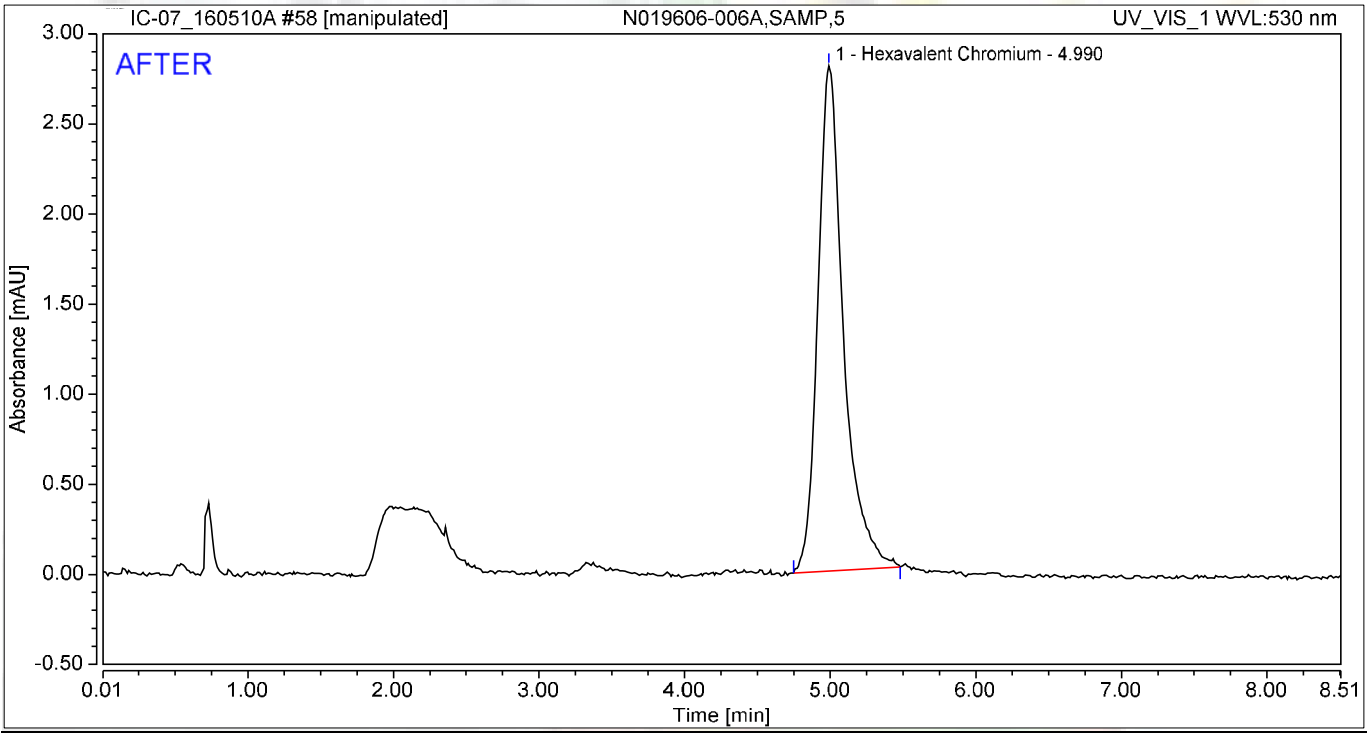
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.270	1.555	100.00	100.00	1.1468
Total:			**0.270**	**1.555**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.990	0.571	2.803	100.00	100.00	2.4251
Total:			**0.571**	**2.803**	**100.00**	**100.00**	

JAS 5/16/2016

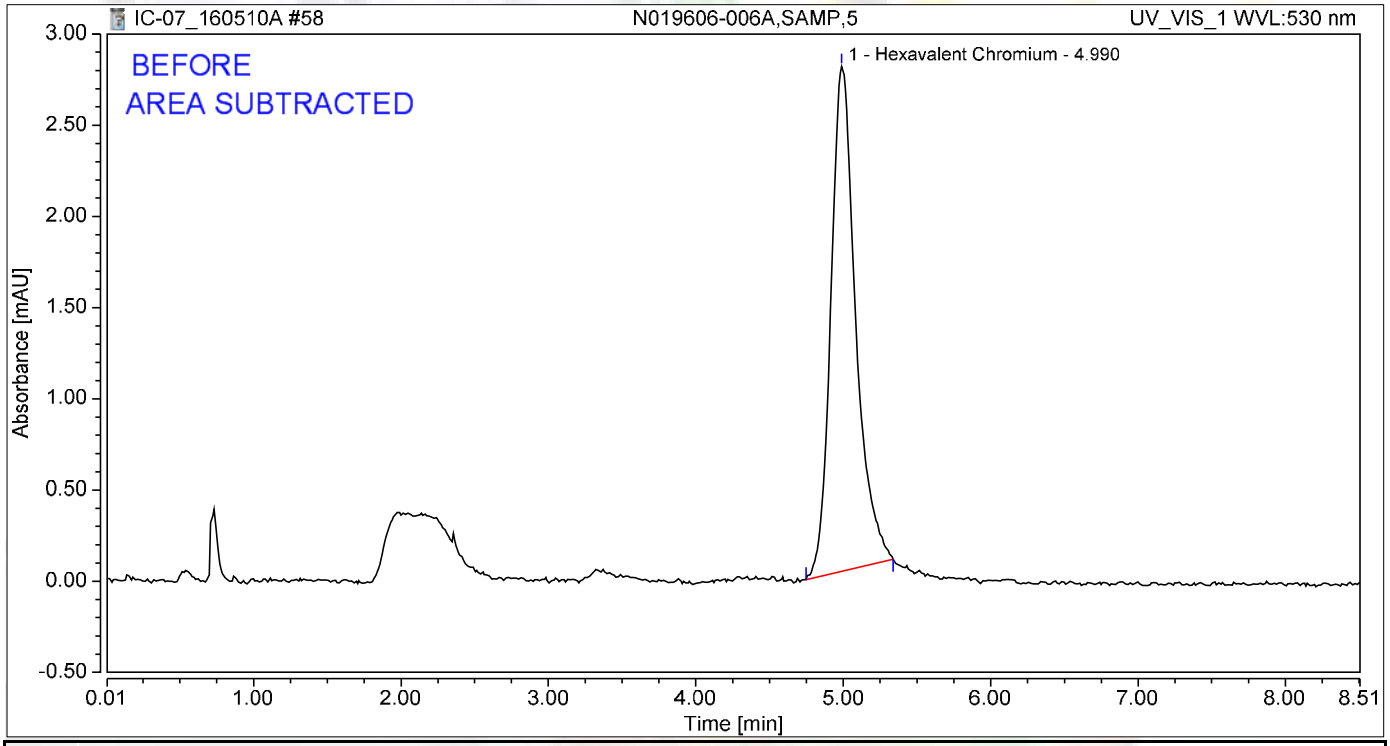
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.990	0.540	2.768	100.00	100.00	2.2941
Total:			**0.540**	**2.768**	**100.00**	**100.00**	

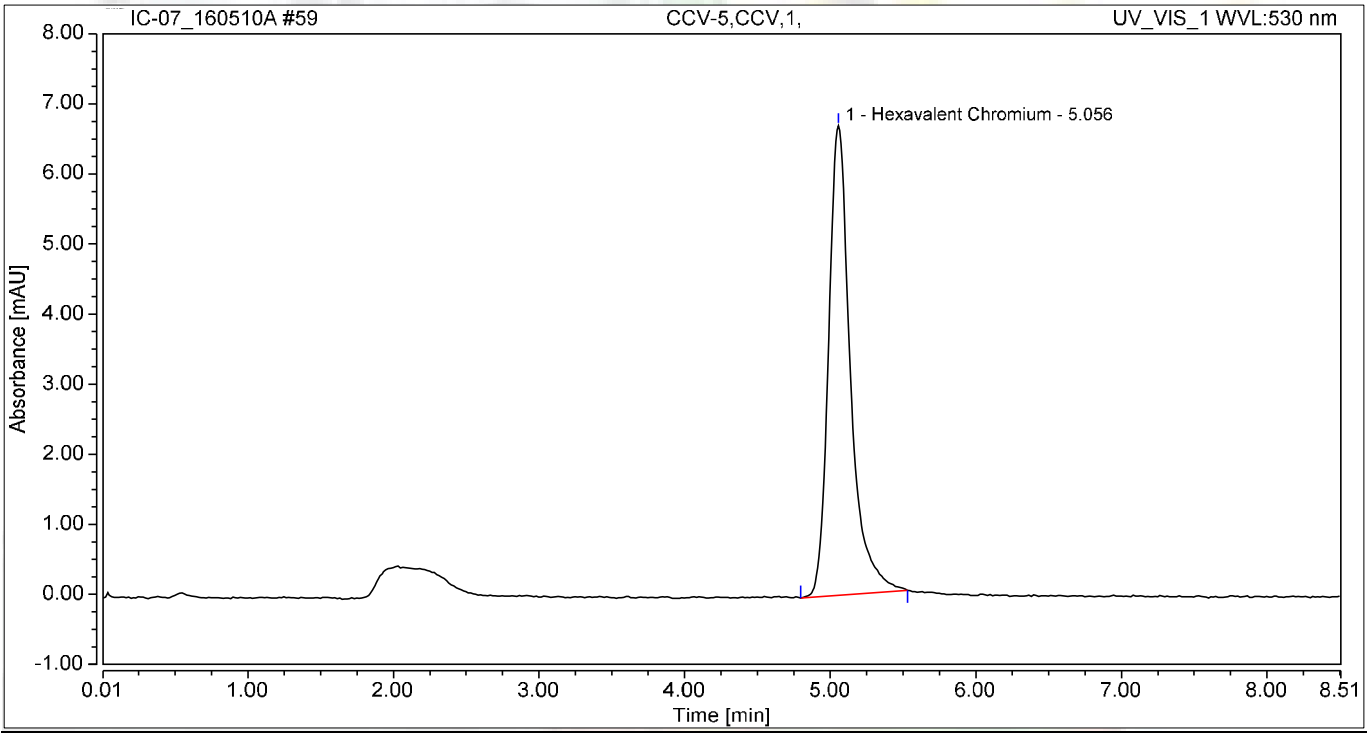
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 18:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

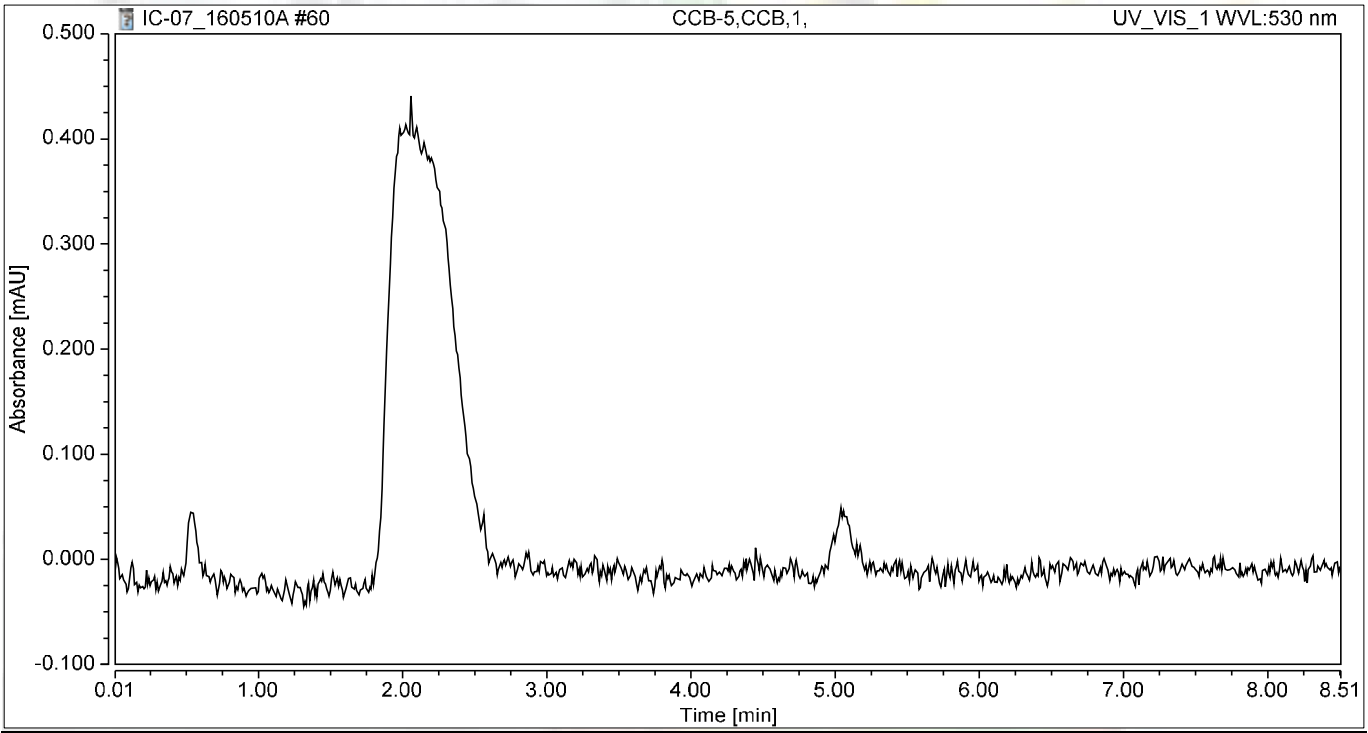
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.166	6.699	100.00	100.00	4.9532
Total:			**1.166**	**6.699**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

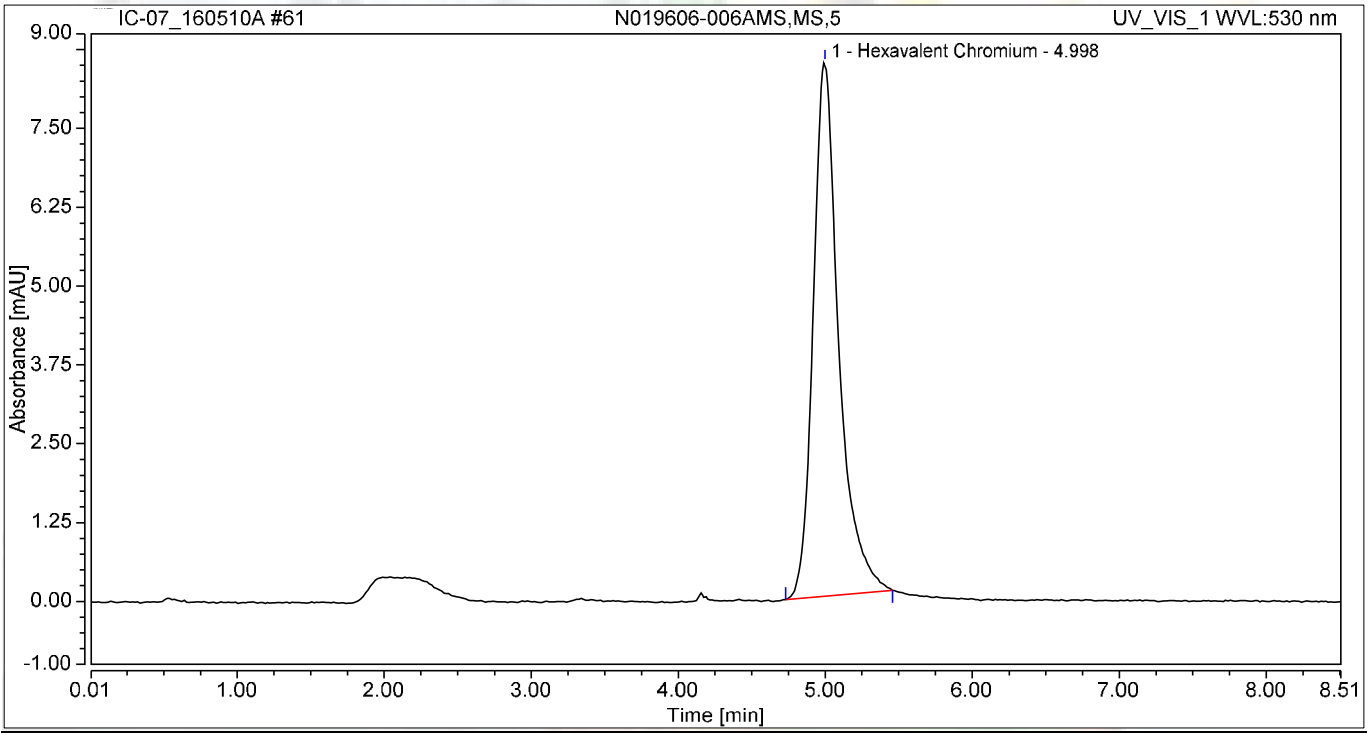
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-006AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

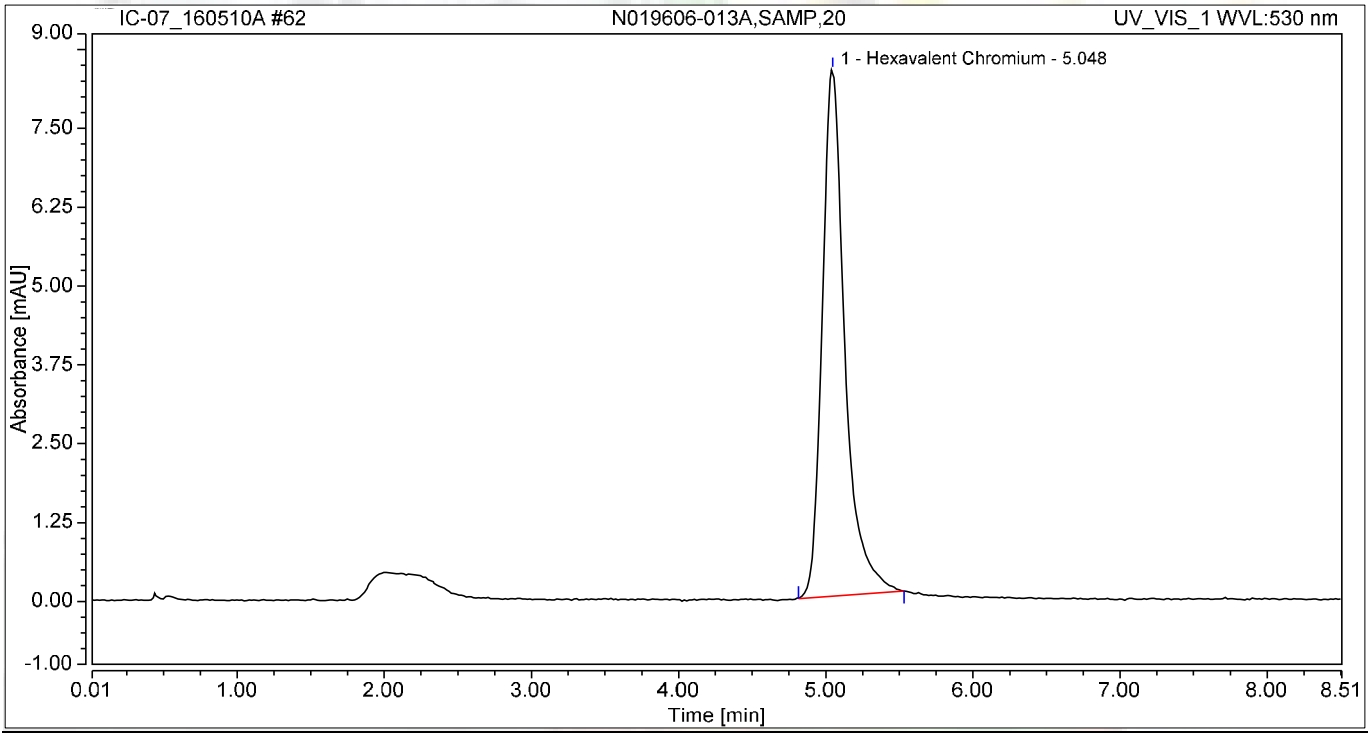
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.998	1.703	8.459	100.00	100.00	7.2350
Total:			**1.703**	**8.459**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-013A,SAMP,20**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

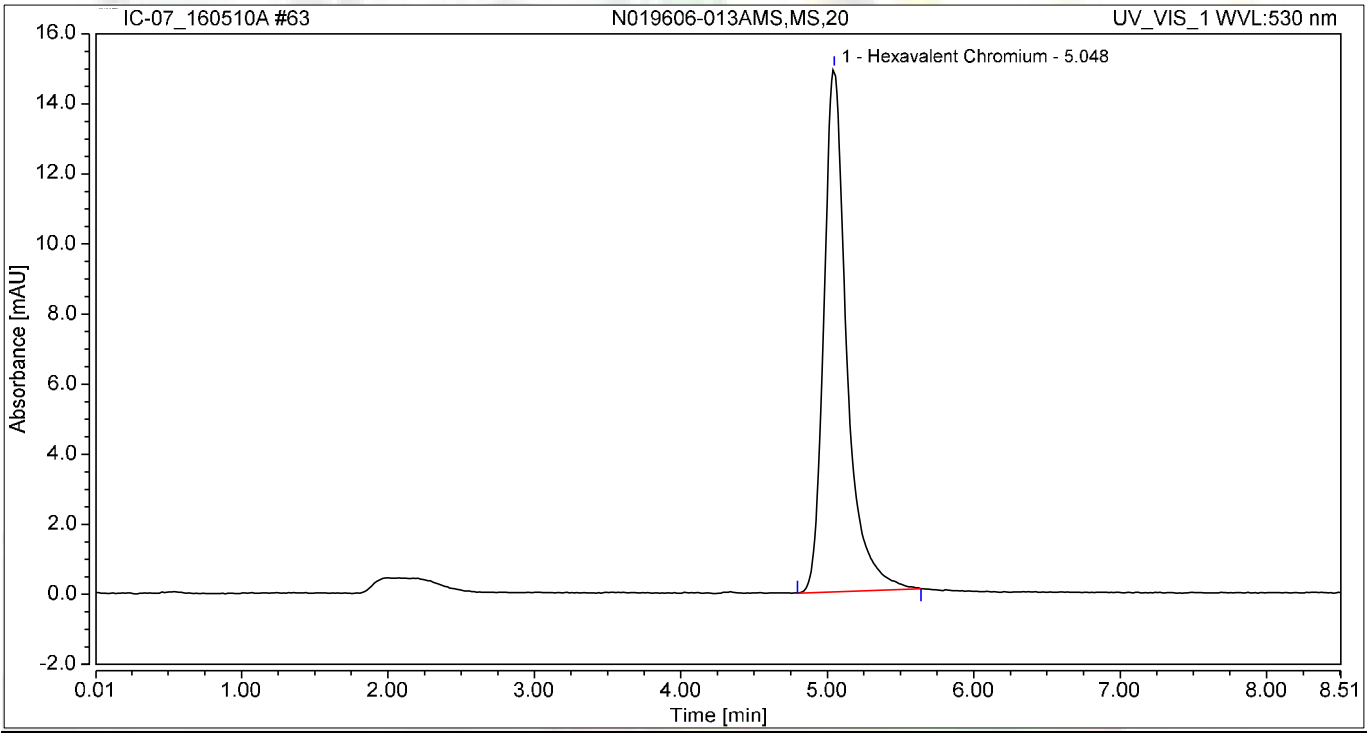
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	1.491	8.342	100.00	100.00	6.3347
Total:			**1.491**	**8.342**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019606-013AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

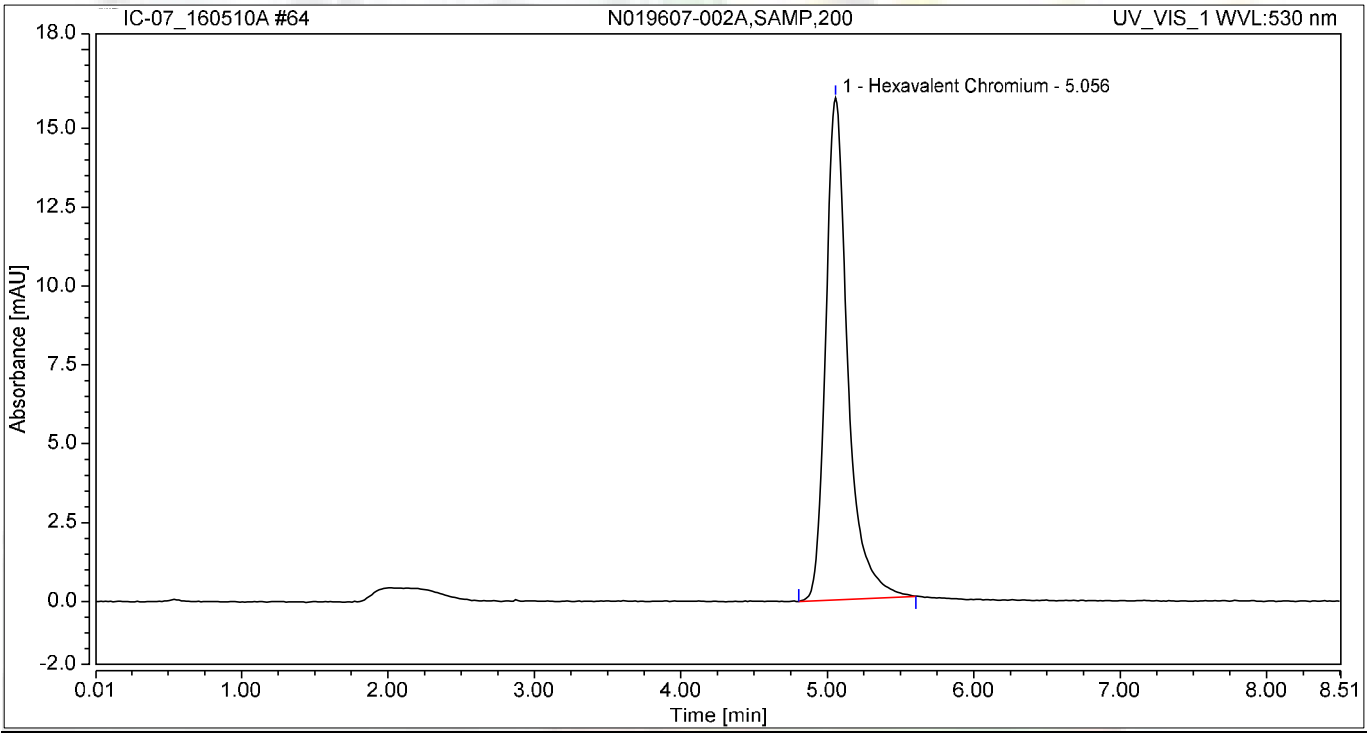
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	2.708	14.936	100.00	100.00	11.5022
Total:			**2.708**	**14.936**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-002A,SAMP,200**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

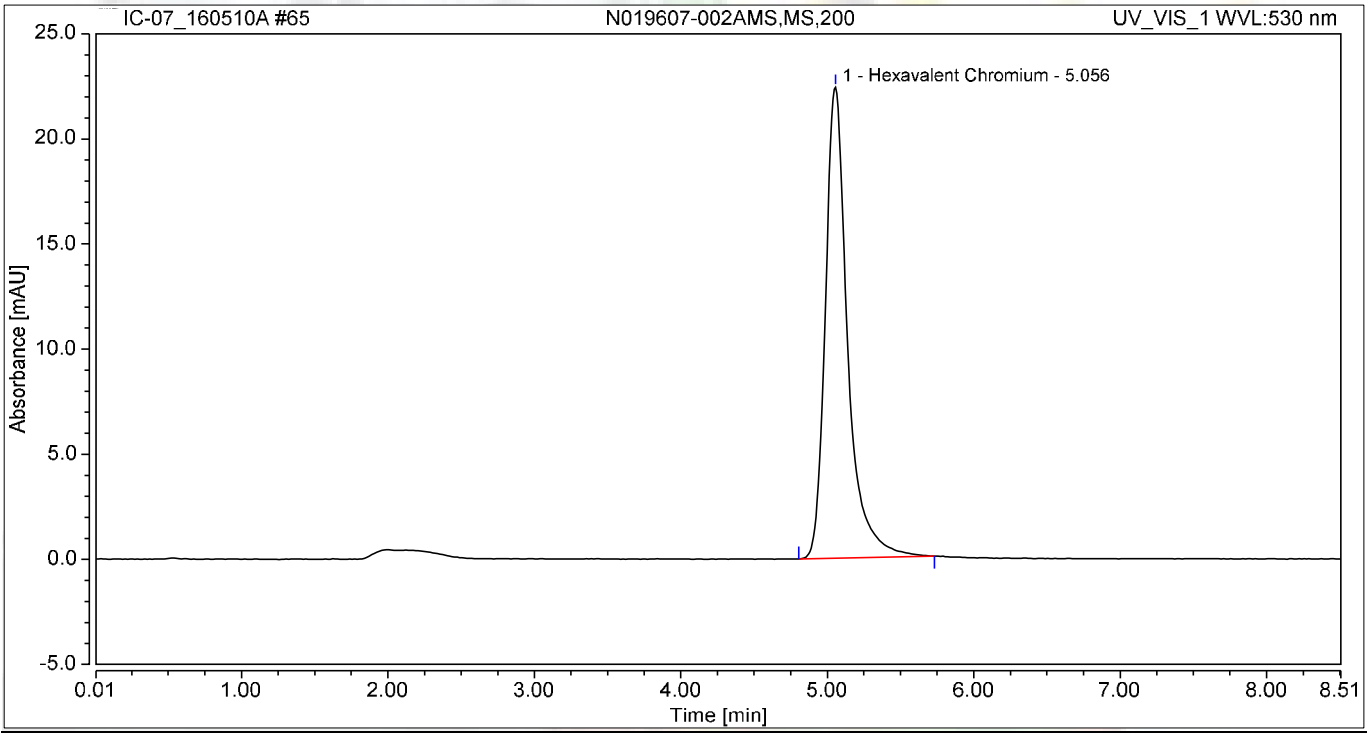
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.783	15.917	100.00	100.00	11.8192
Total:			**2.783**	**15.917**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-002AMS,MS,200**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 19:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

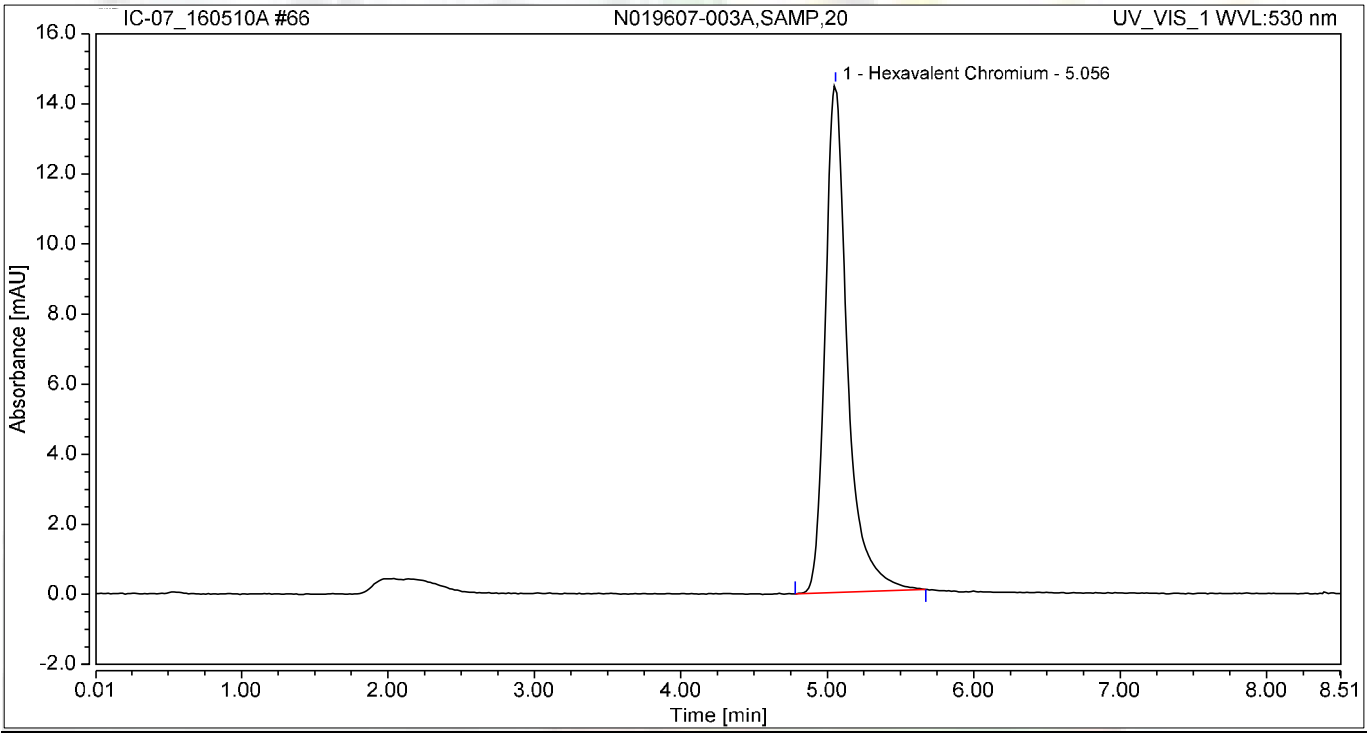
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	3.950	22.416	100.00	100.00	16.7776
Total:			**3.950**	**22.416**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-003A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

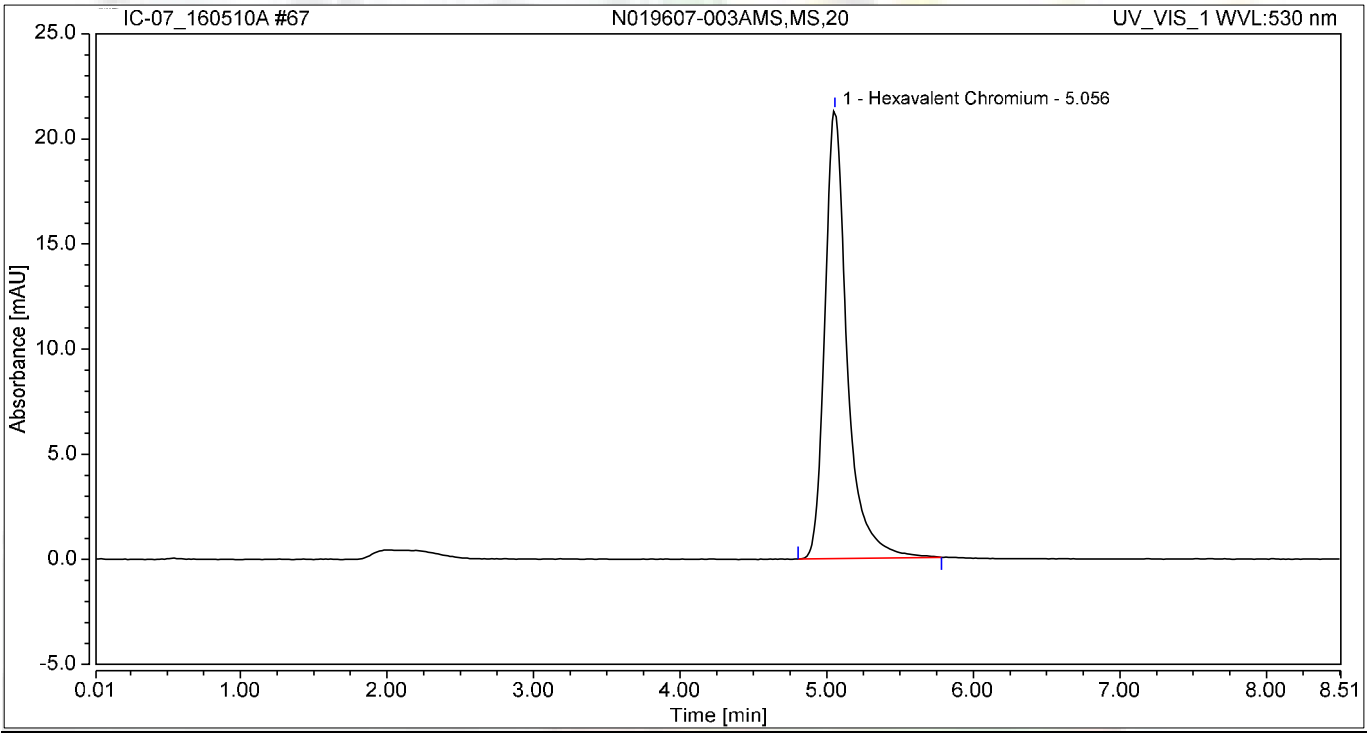
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.559	14.493	100.00	100.00	10.8700
Total:			**2.559**	**14.493**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-003AMS,MS,20**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

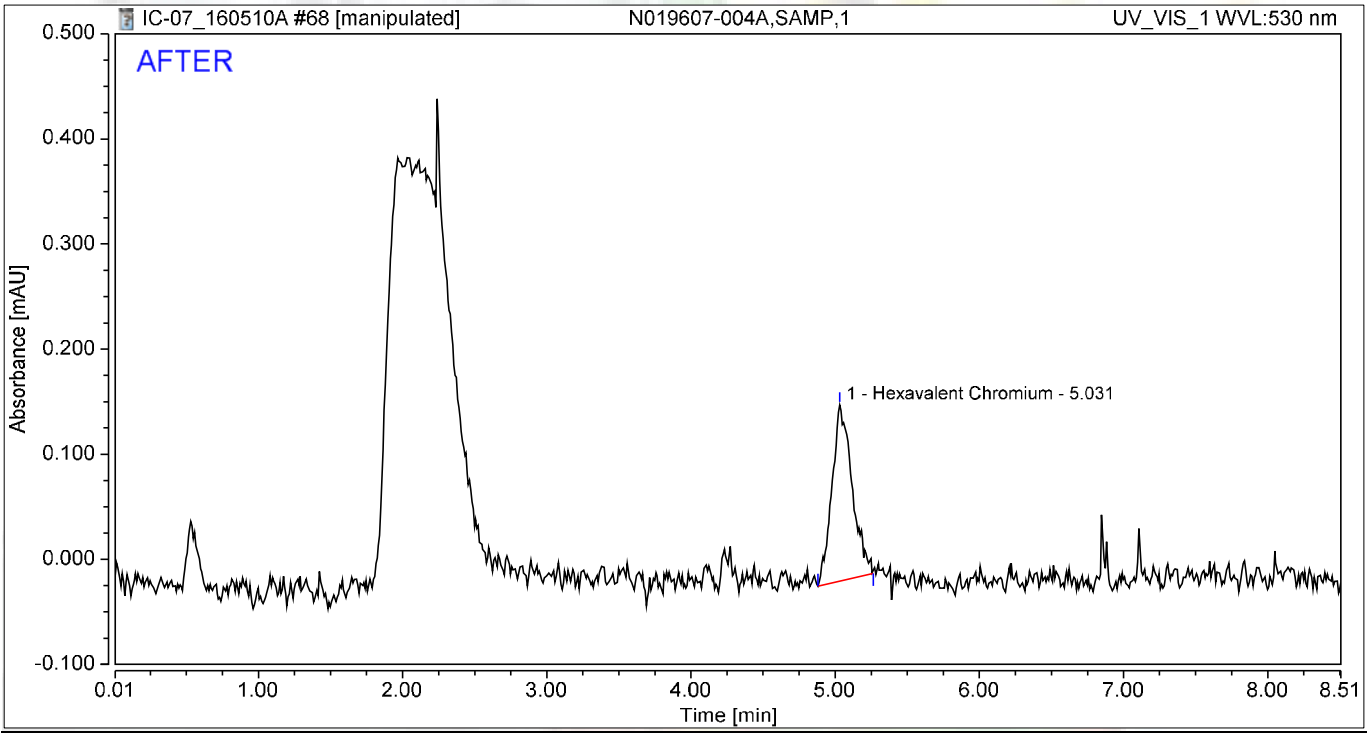
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	3.756	21.344	100.00	100.00	15.9556
Total:			**3.756**	**21.344**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.027	0.168	100.00	100.00	0.1151
Total:			**0.027**	**0.168**	**100.00**	**100.00**	

5/16/2016

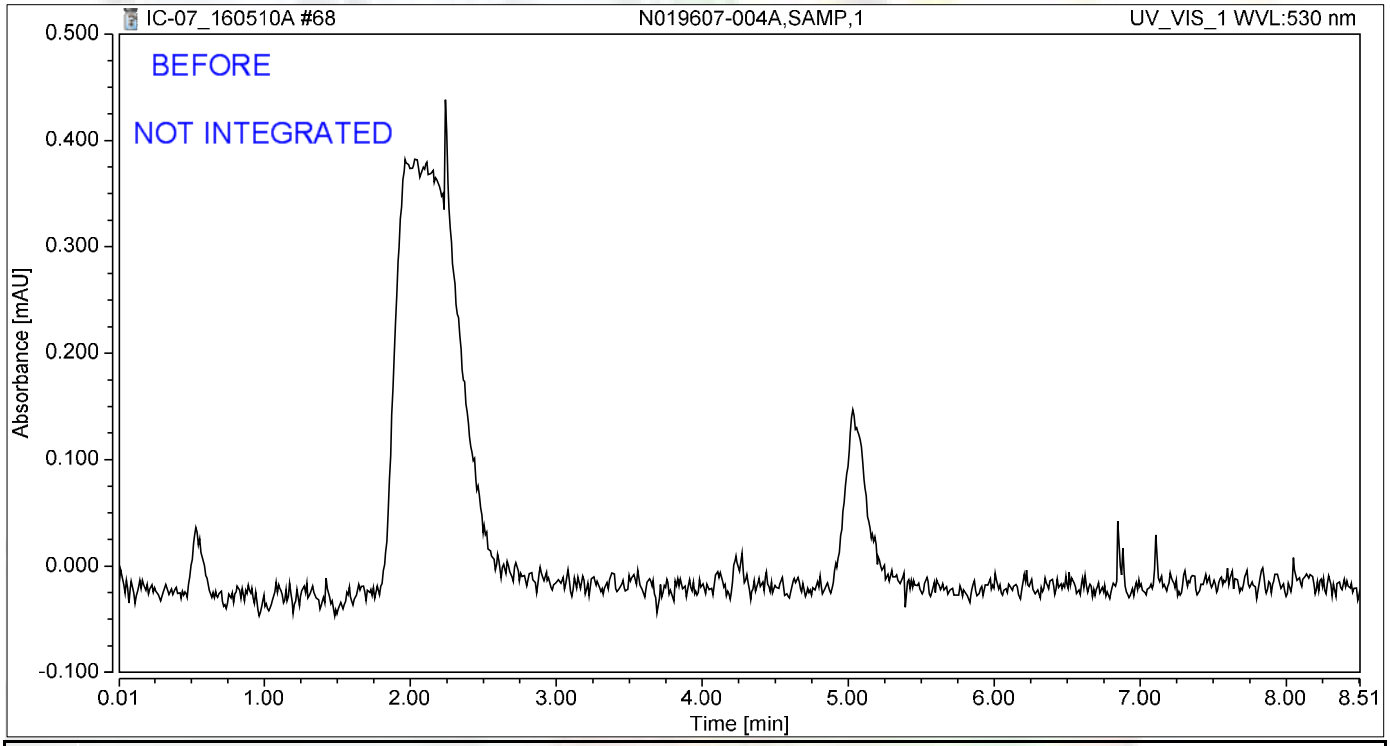
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

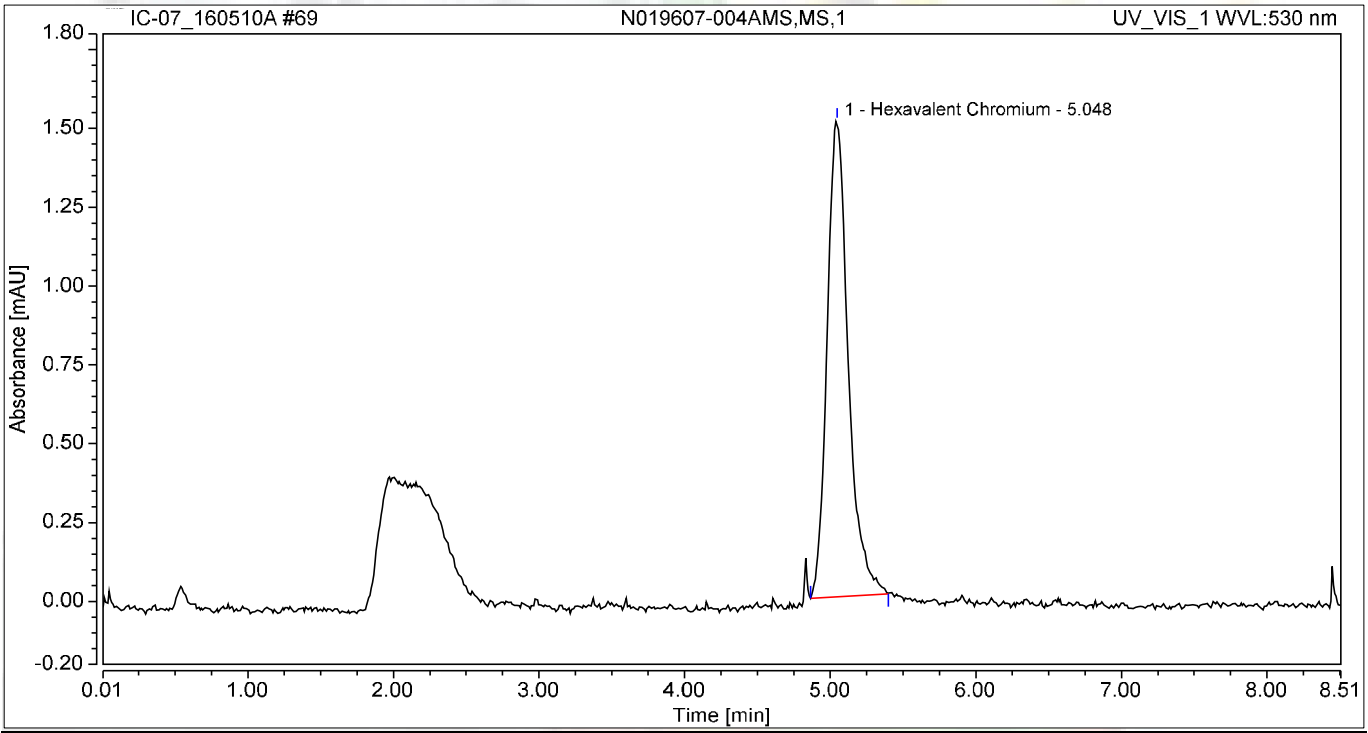
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

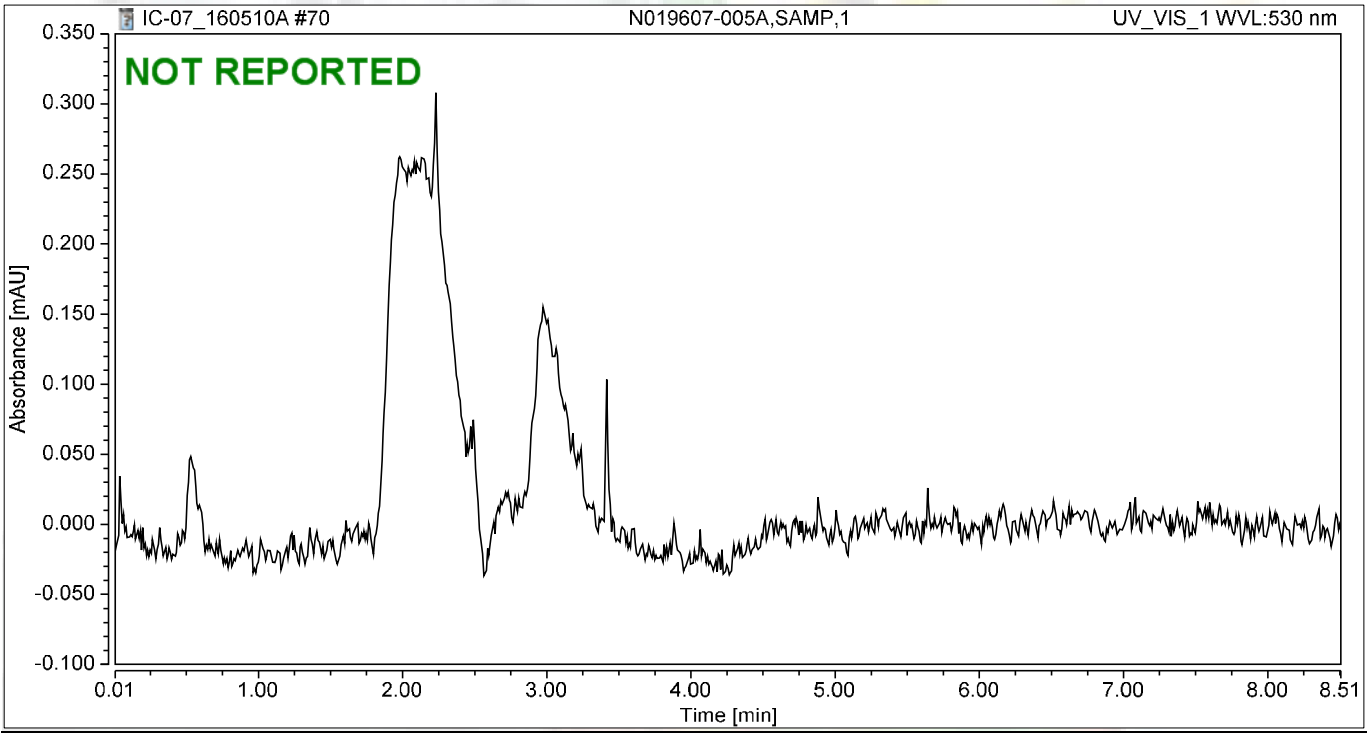
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	0.254	1.510	100.00	100.00	1.0809
Total:			**0.254**	**1.510**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

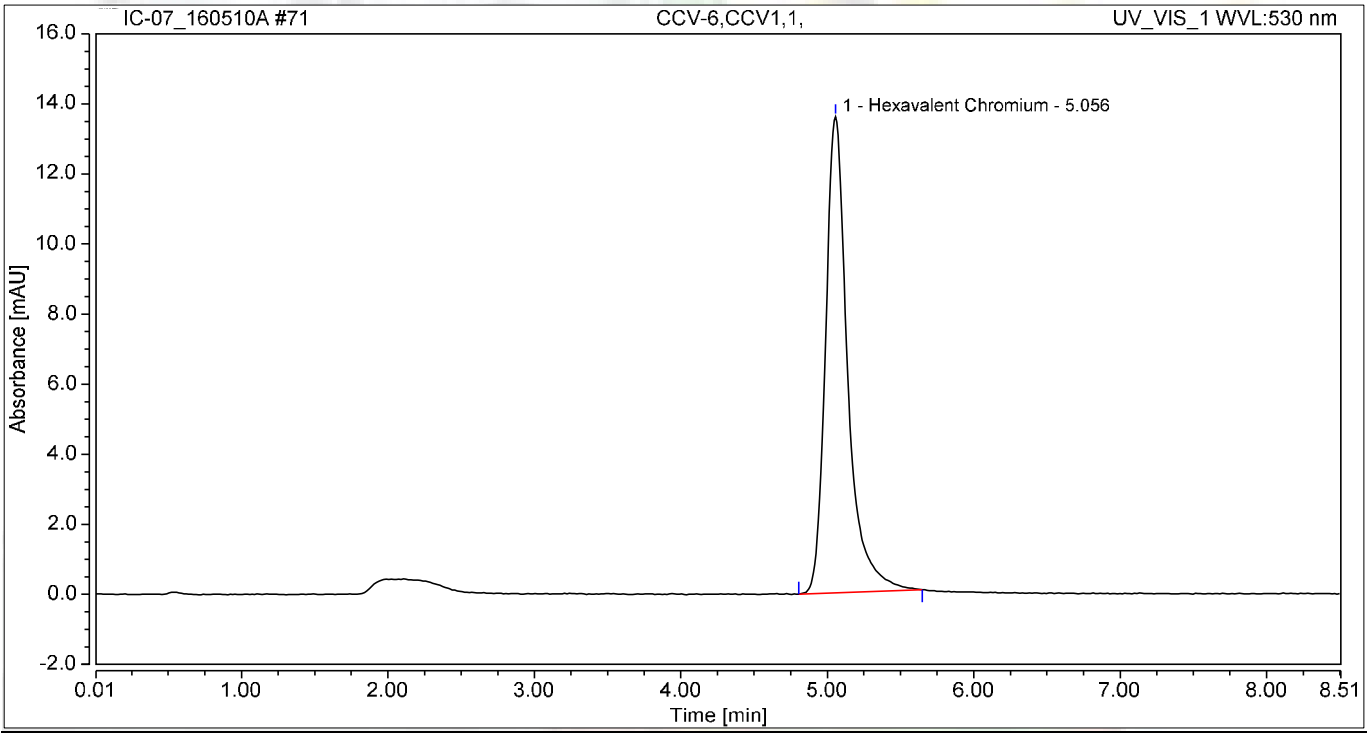
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 20:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

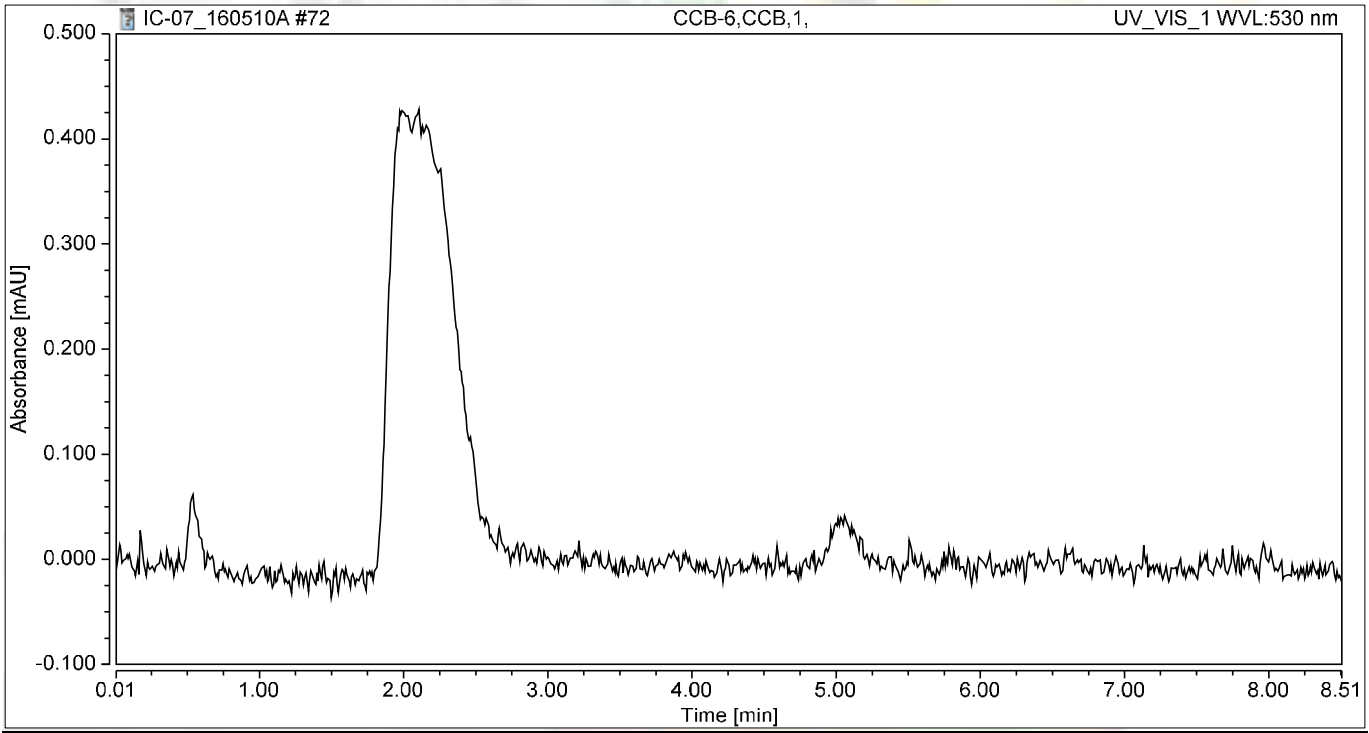
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.381	13.586	100.00	100.00	10.1120
Total:			**2.381**	**13.586**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

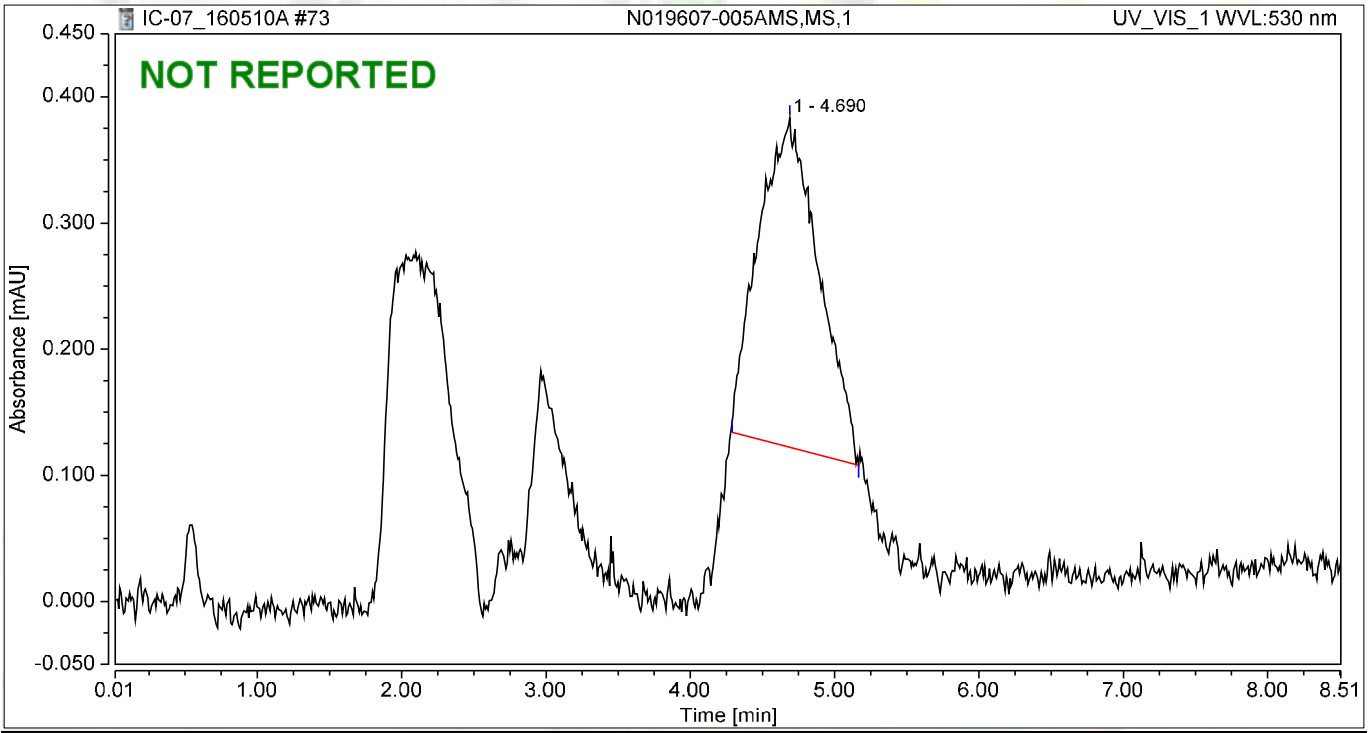
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

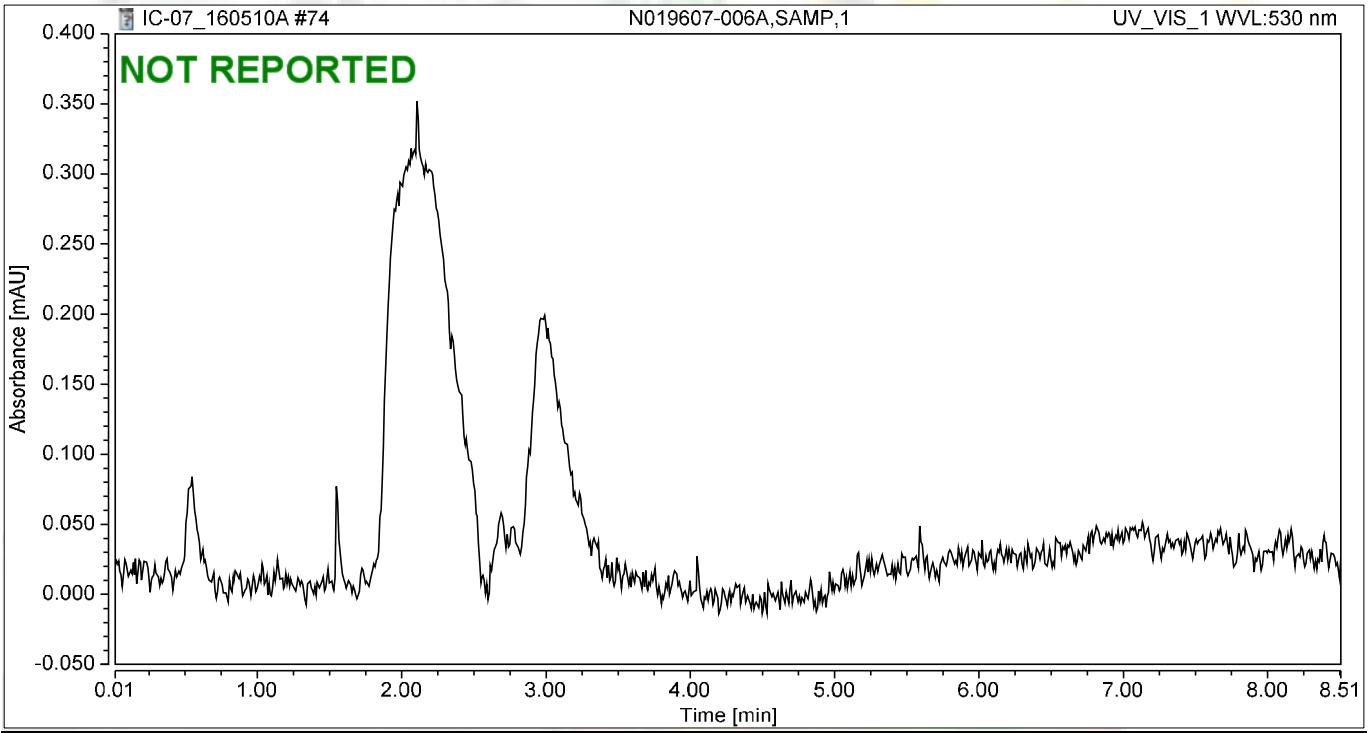
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.690	0.126	0.261	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.126**	**0.261**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

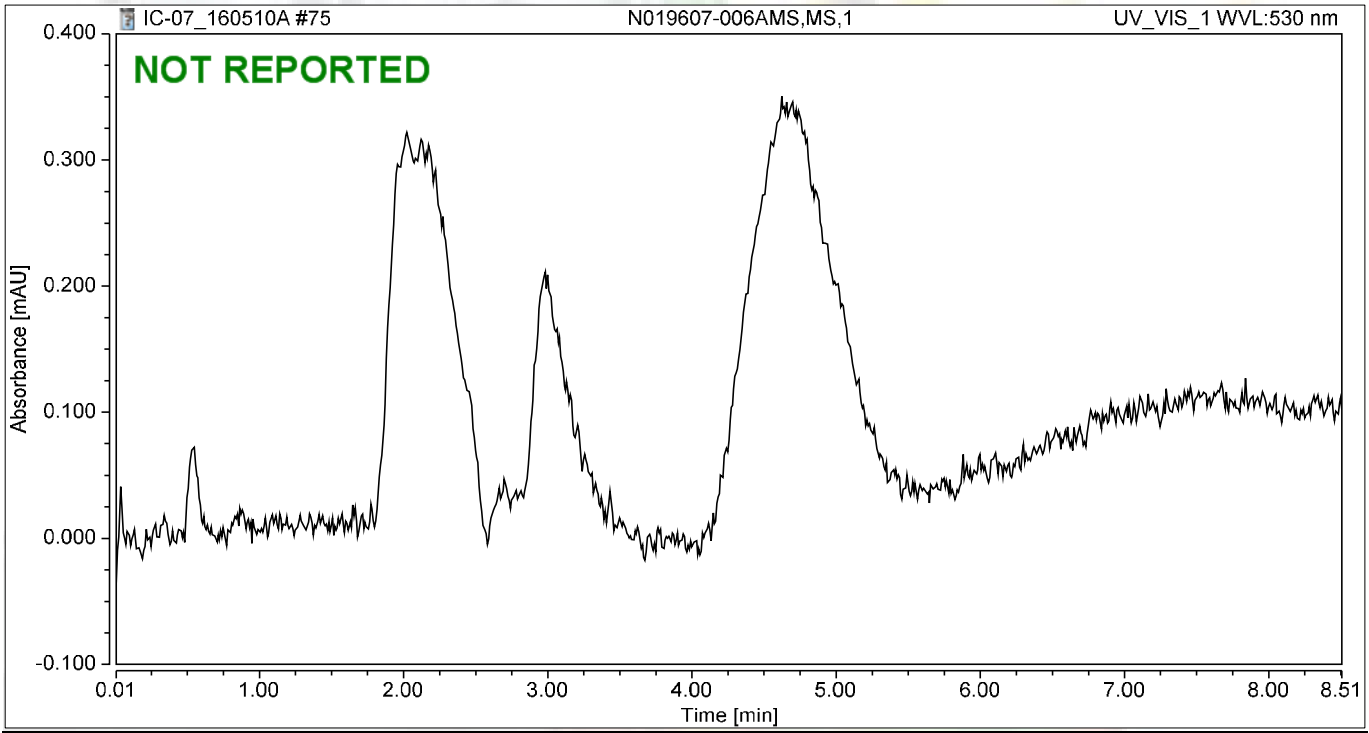
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

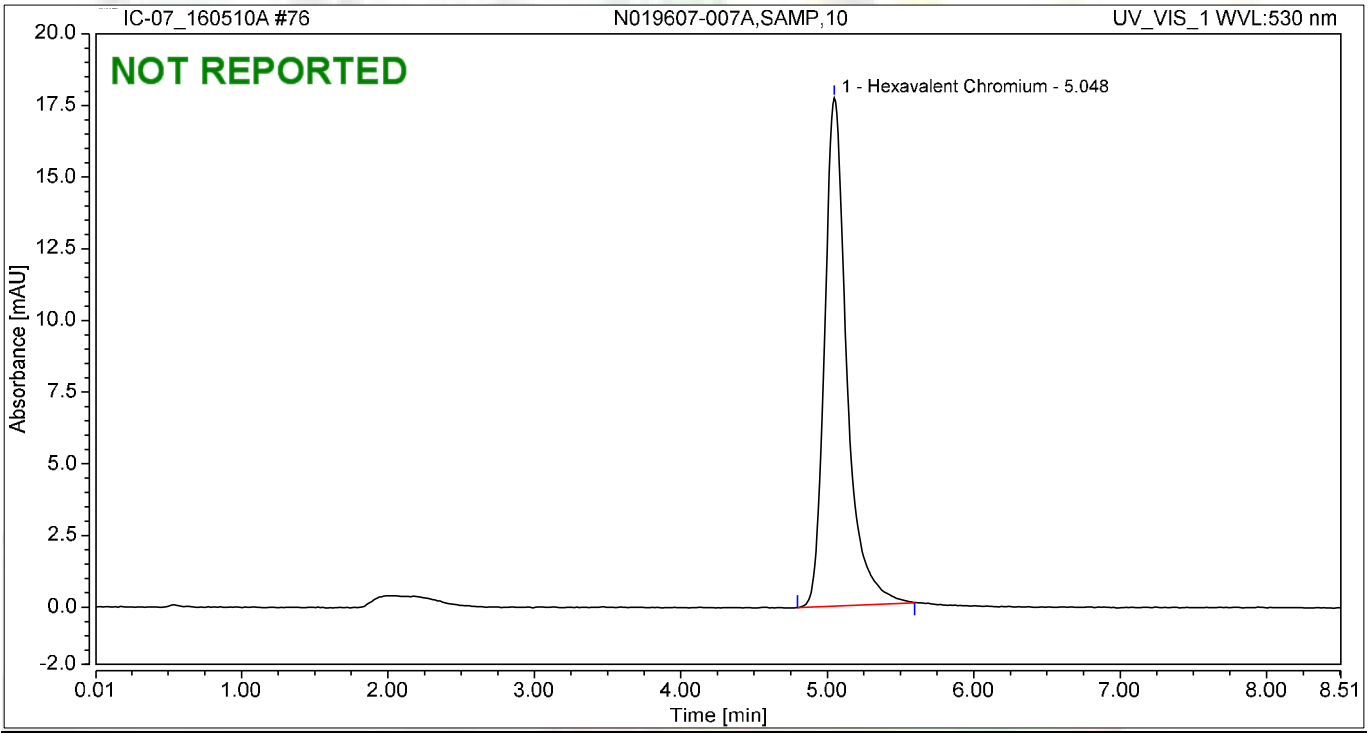
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-007A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

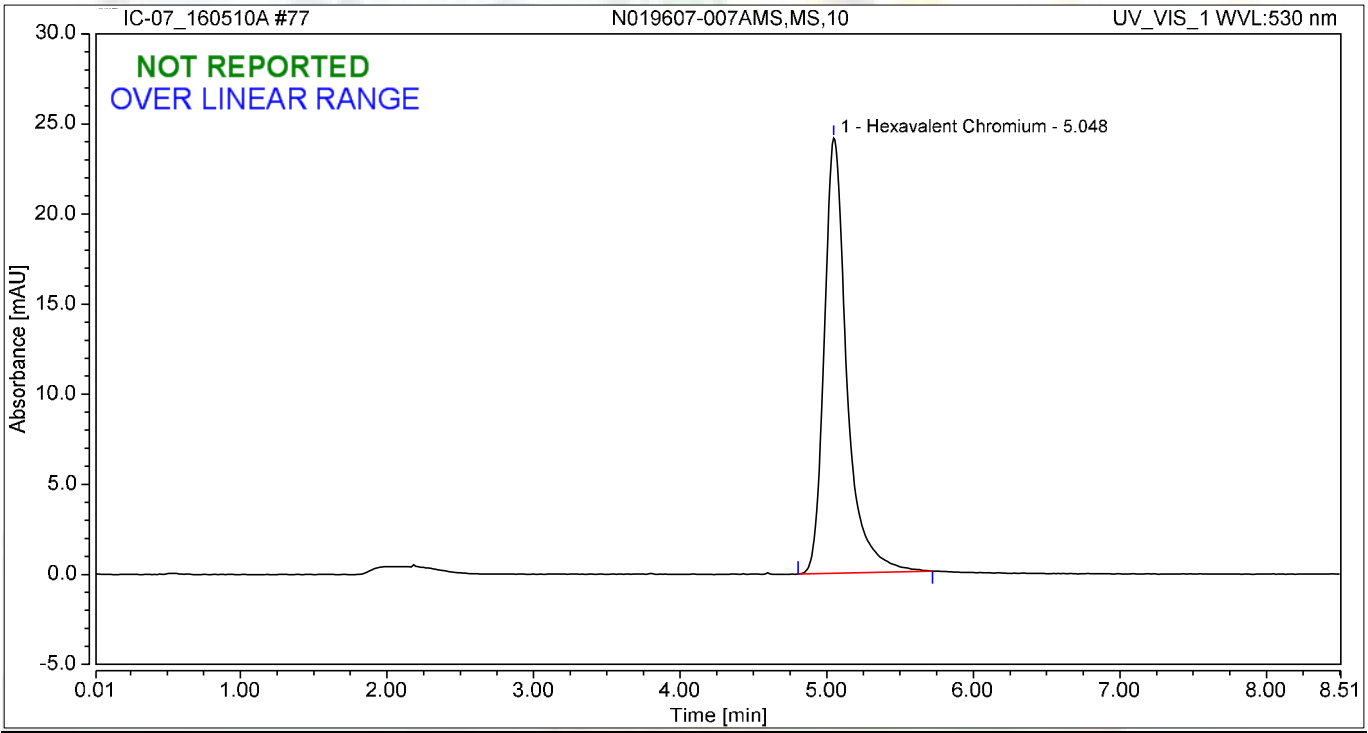
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	3.123	17.726	100.00	100.00	13.2632
Total:			**3.123**	**17.726**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-007AMS,MS,10**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 21:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

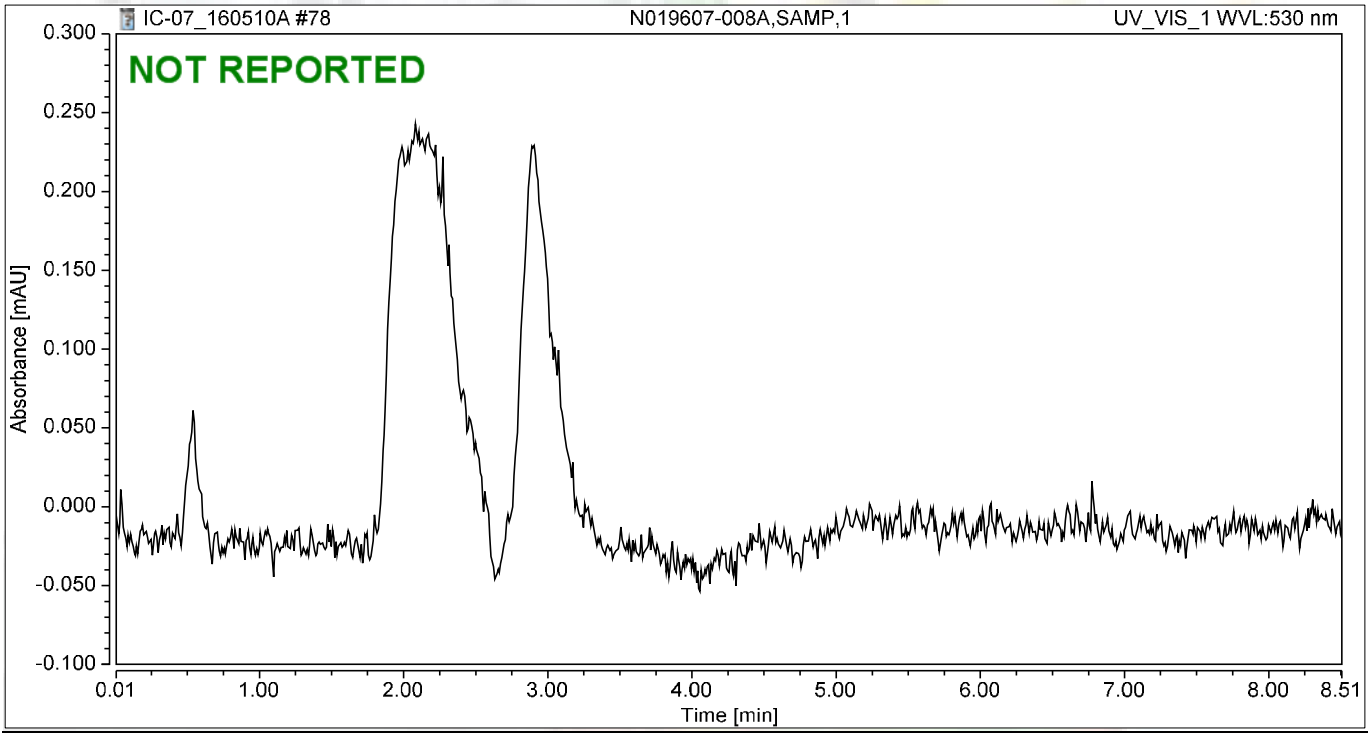
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	4.309	24.157	100.00	100.00	18.3018
Total:			**4.309**	**24.157**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

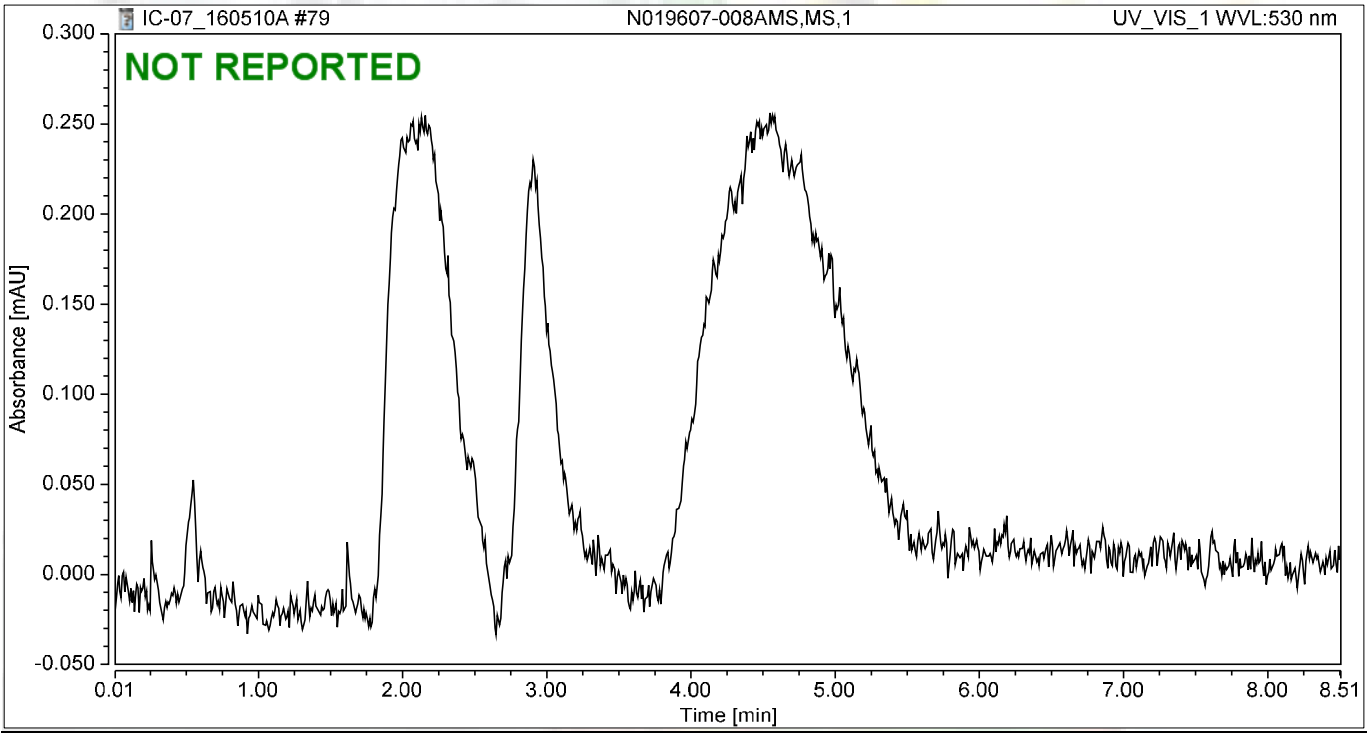
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

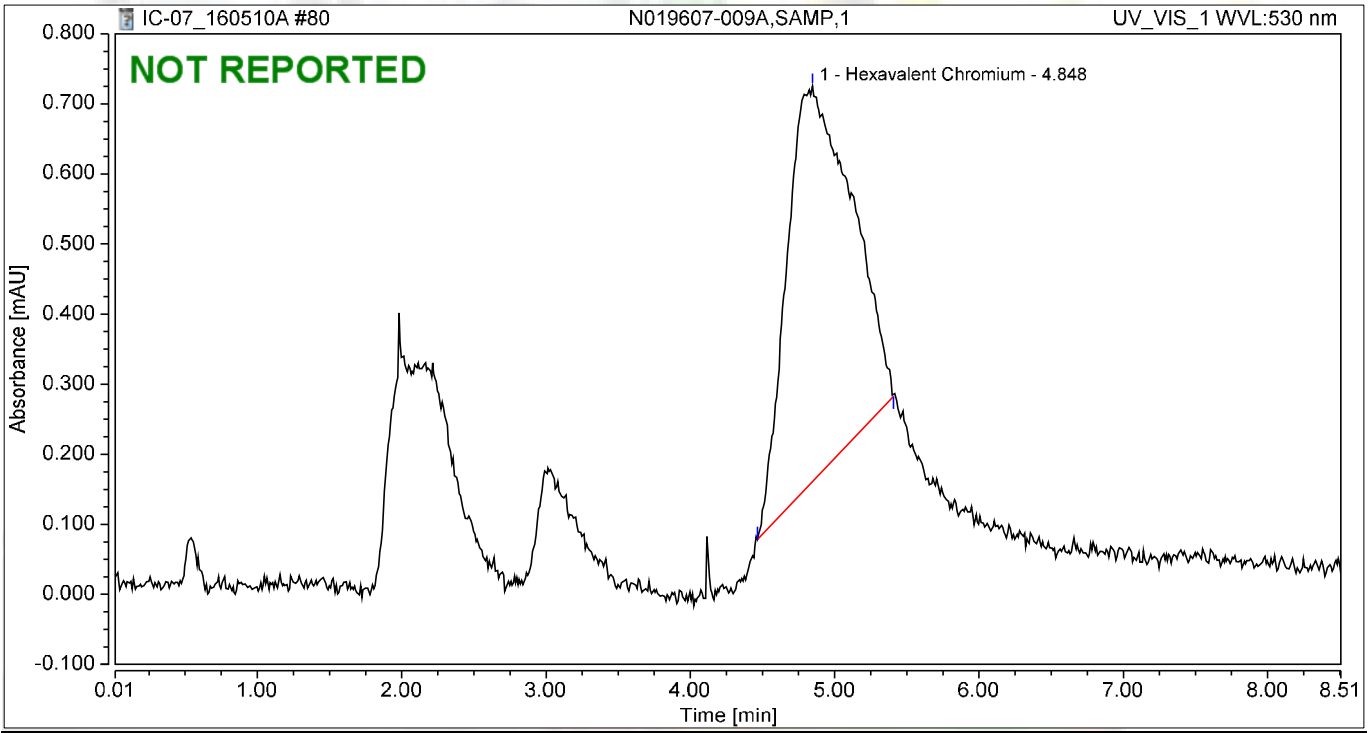
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

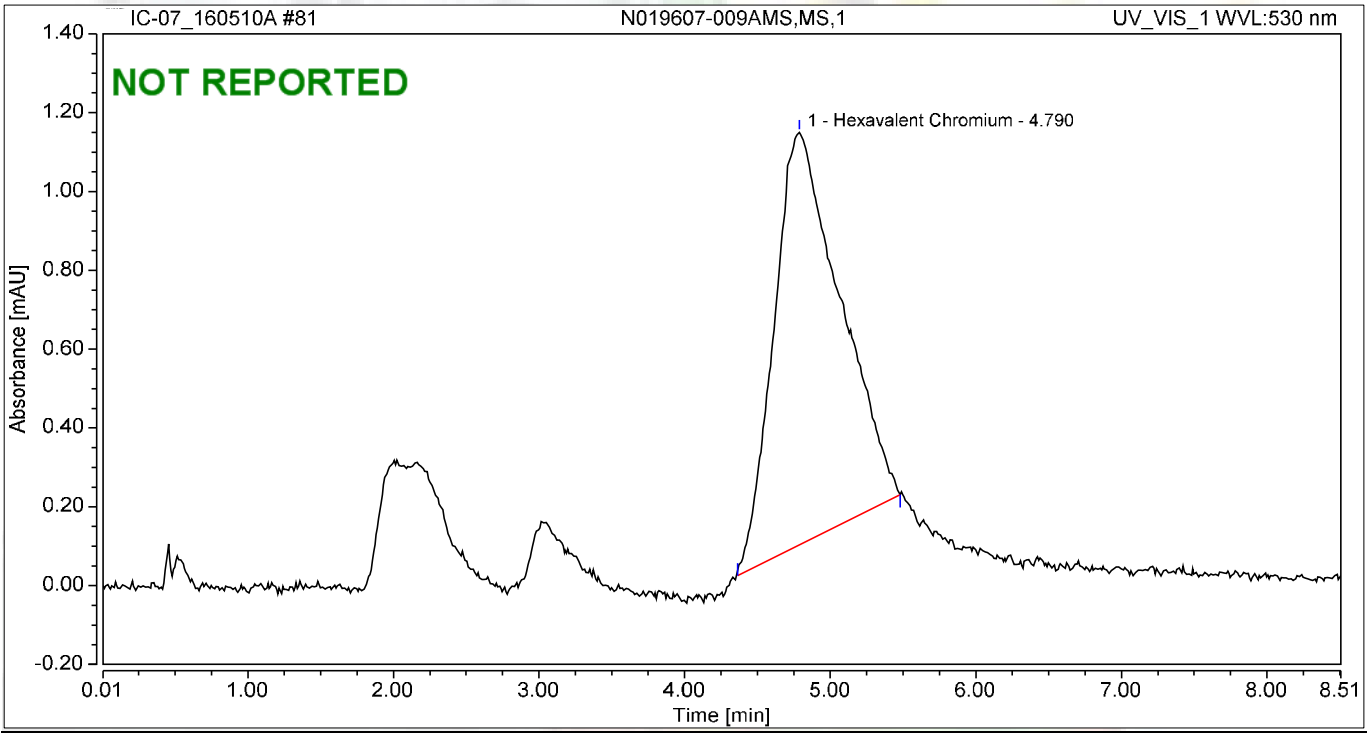
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.848	0.294	0.564	100.00	100.00	1.2487
Total:			**0.294**	**0.564**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

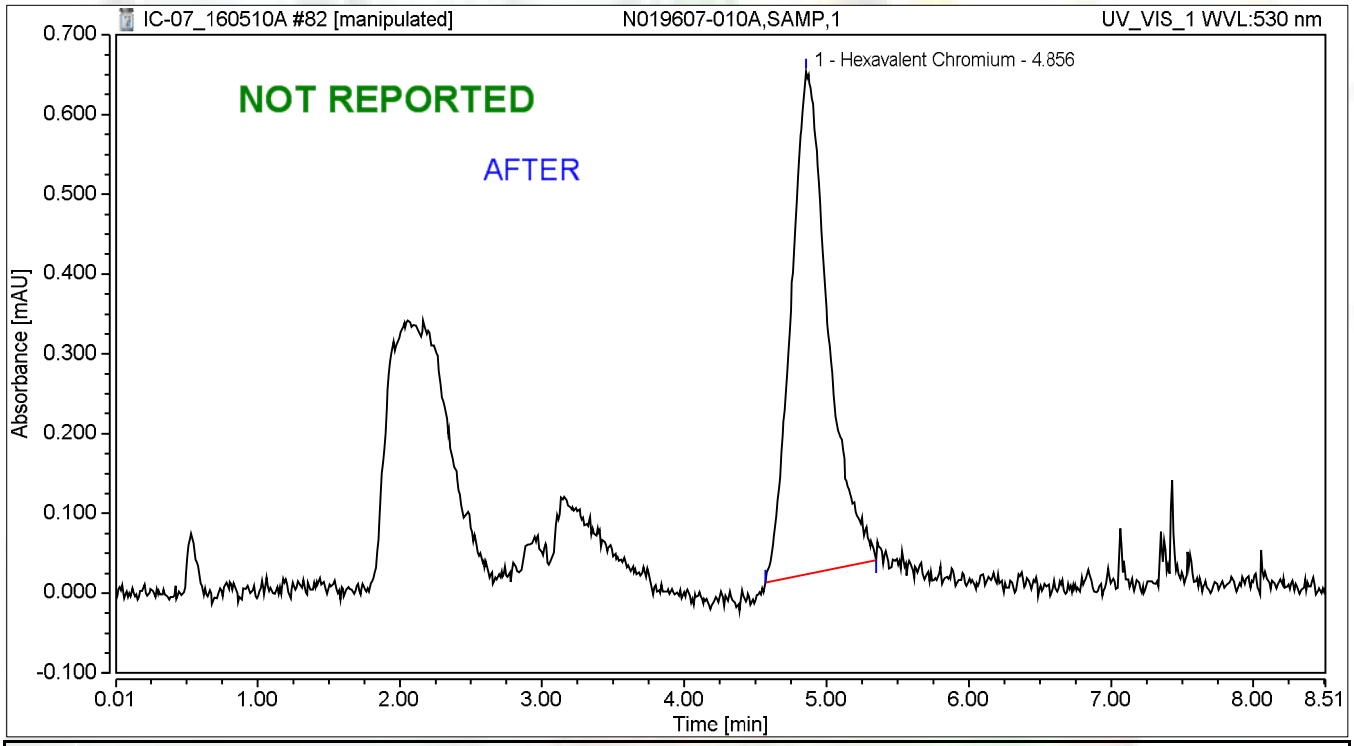
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.790	0.551	1.047	100.00	100.00	2.3411
Total:			**0.551**	**1.047**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.856	0.189	0.630	100.00	100.00	0.8038
Total:			**0.189**	**0.630**	**100.00**	**100.00**	

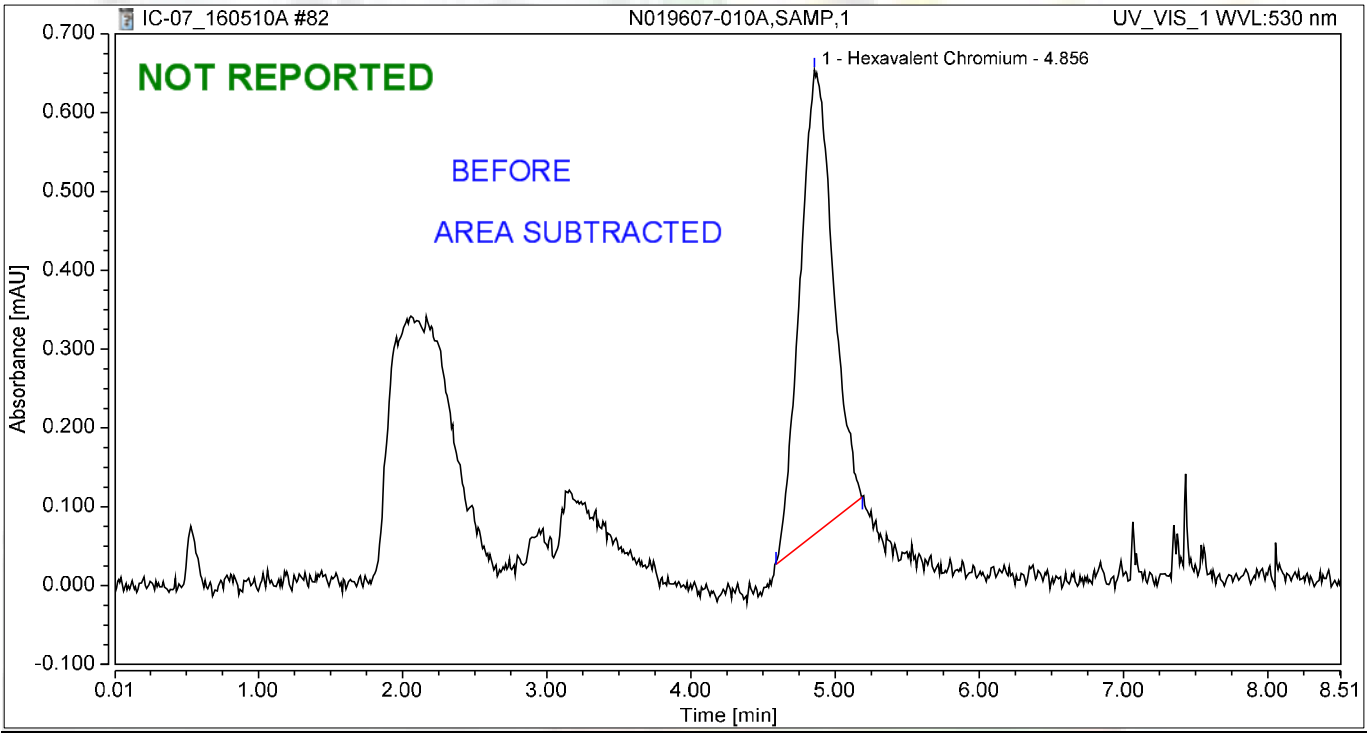
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.856	0.156	0.589	100.00	100.00	0.6624
Total:			**0.156**	**0.589**	**100.00**	**100.00**	

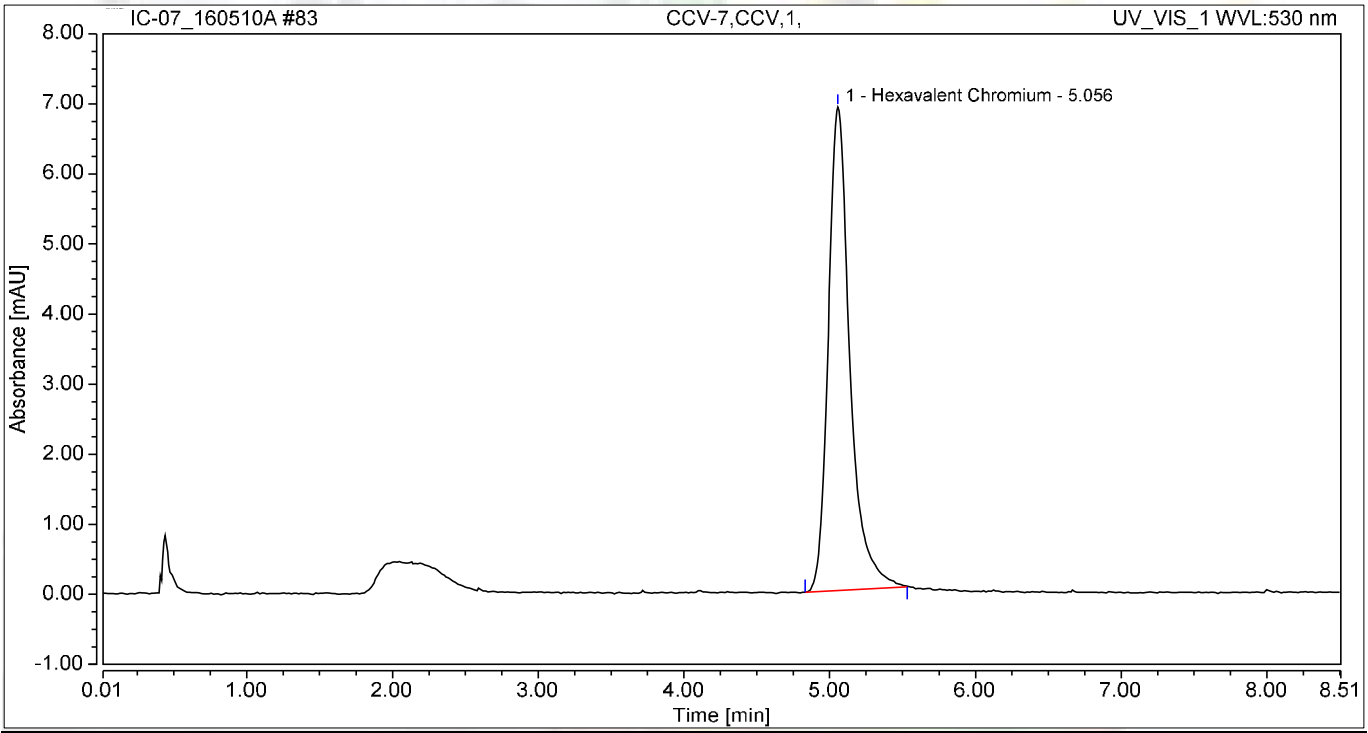
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

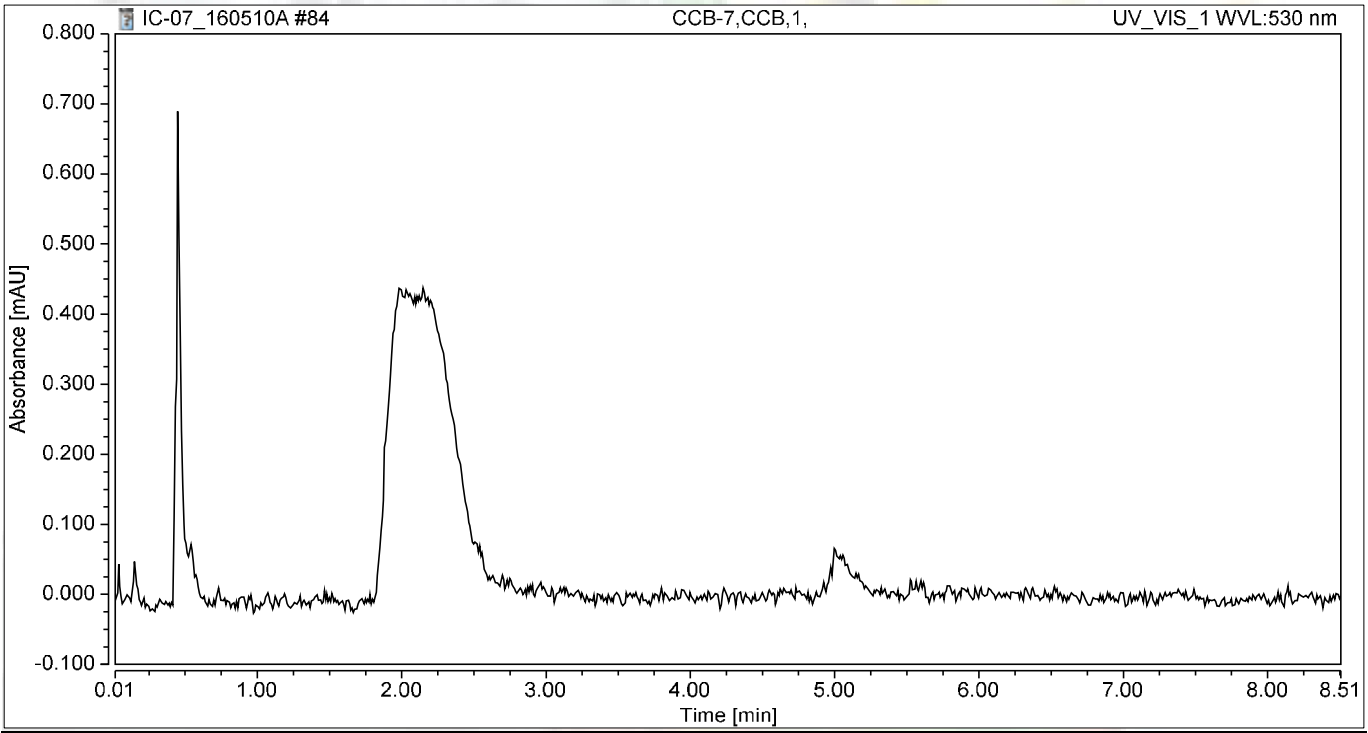
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.185	6.896	100.00	100.00	5.0332
Total:			**1.185**	**6.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 22:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

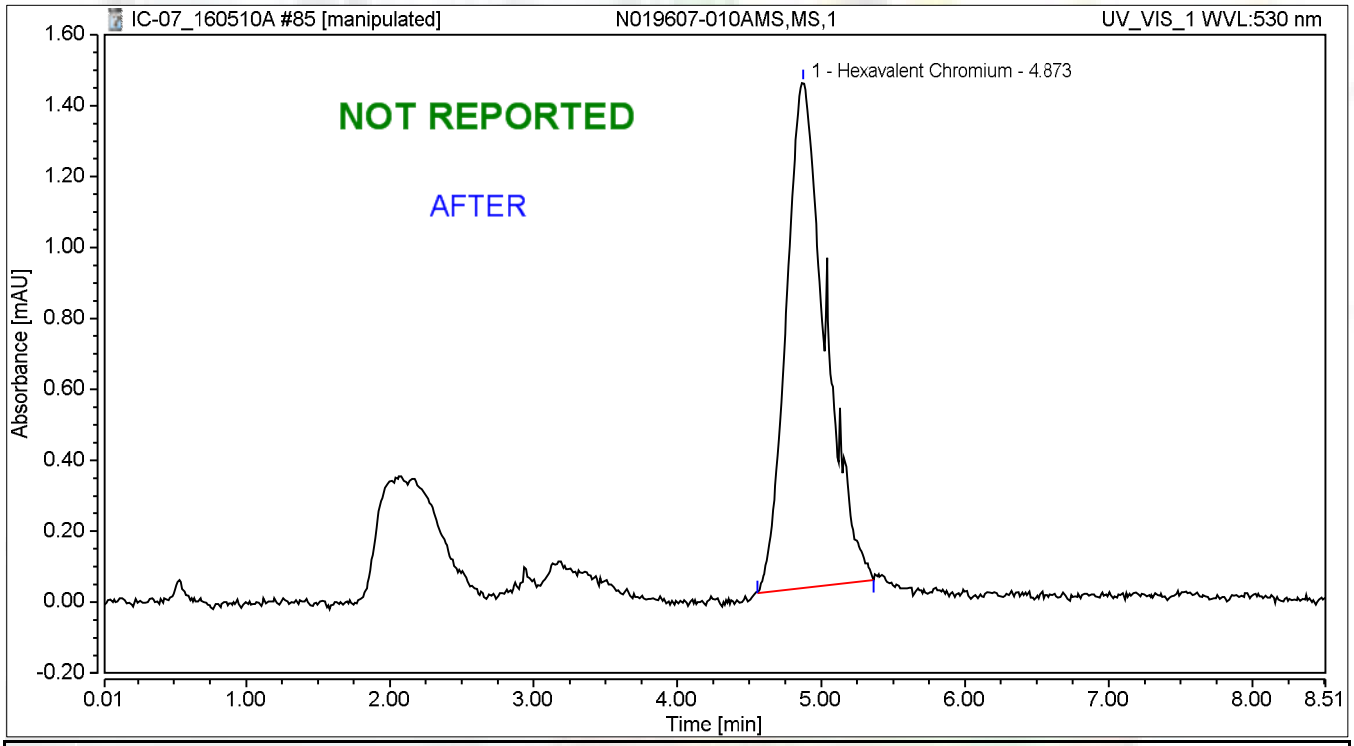
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.873	0.453	1.427	100.00	100.00	1.9239
Total:			**0.453**	**1.427**	**100.00**	**100.00**	

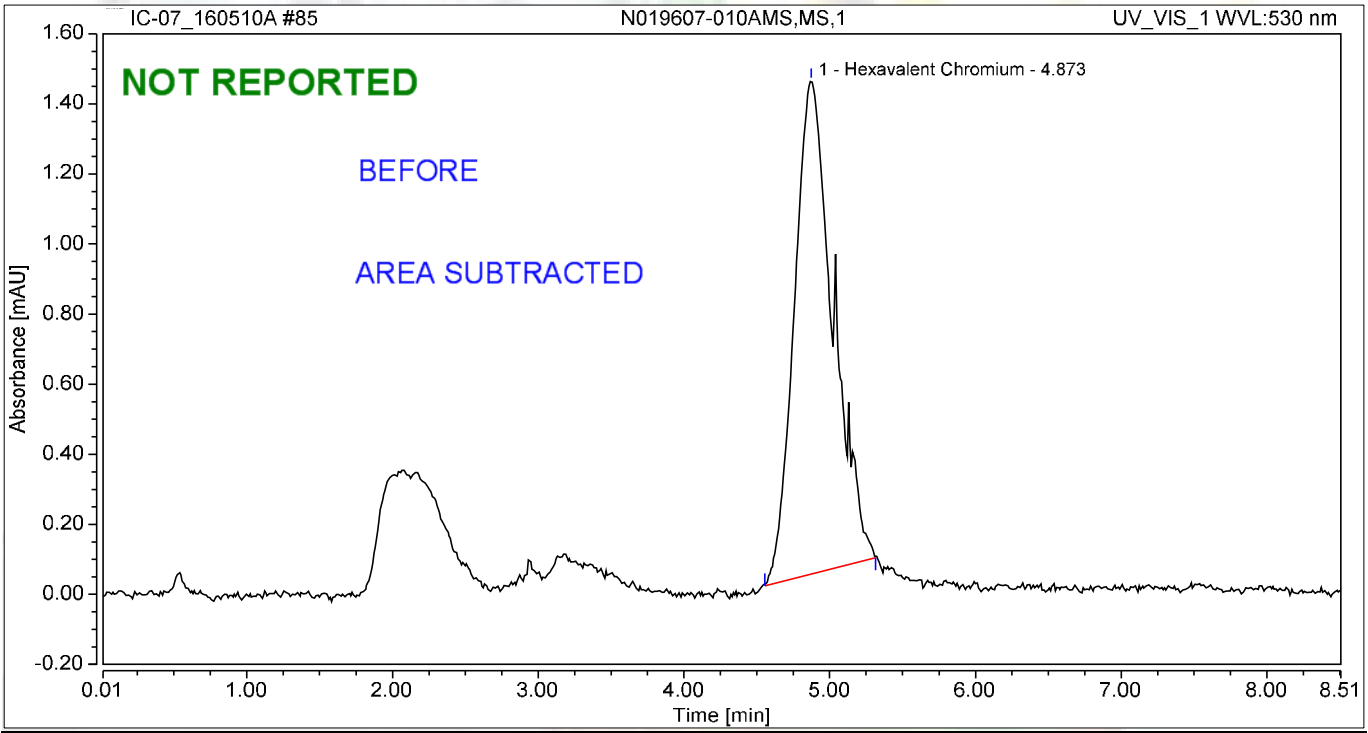
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.873	0.434	1.408	100.00	100.00	1.8448
Total:			**0.434**	**1.408**	**100.00**	**100.00**	

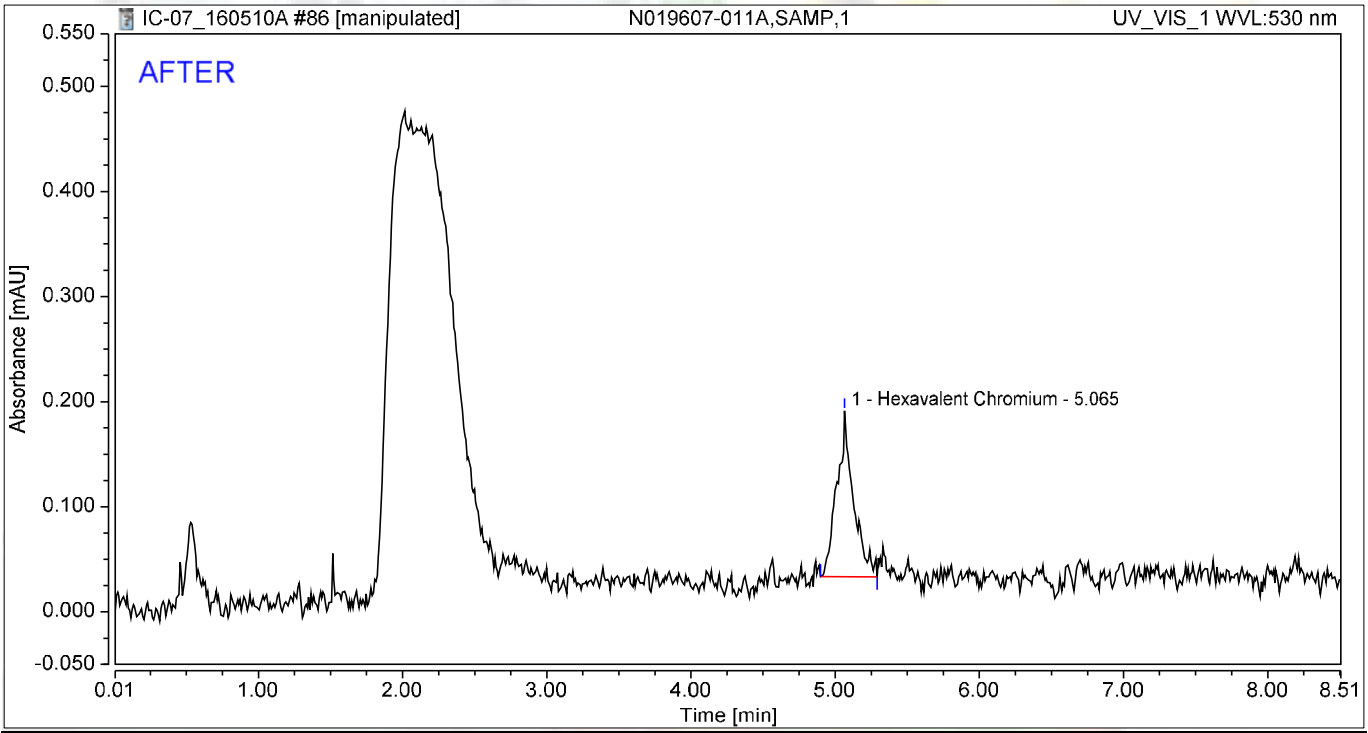
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.021	0.158	100.00	100.00	0.0900
Total:			**0.021**	**0.158**	**100.00**	**100.00**	

5/16/2016

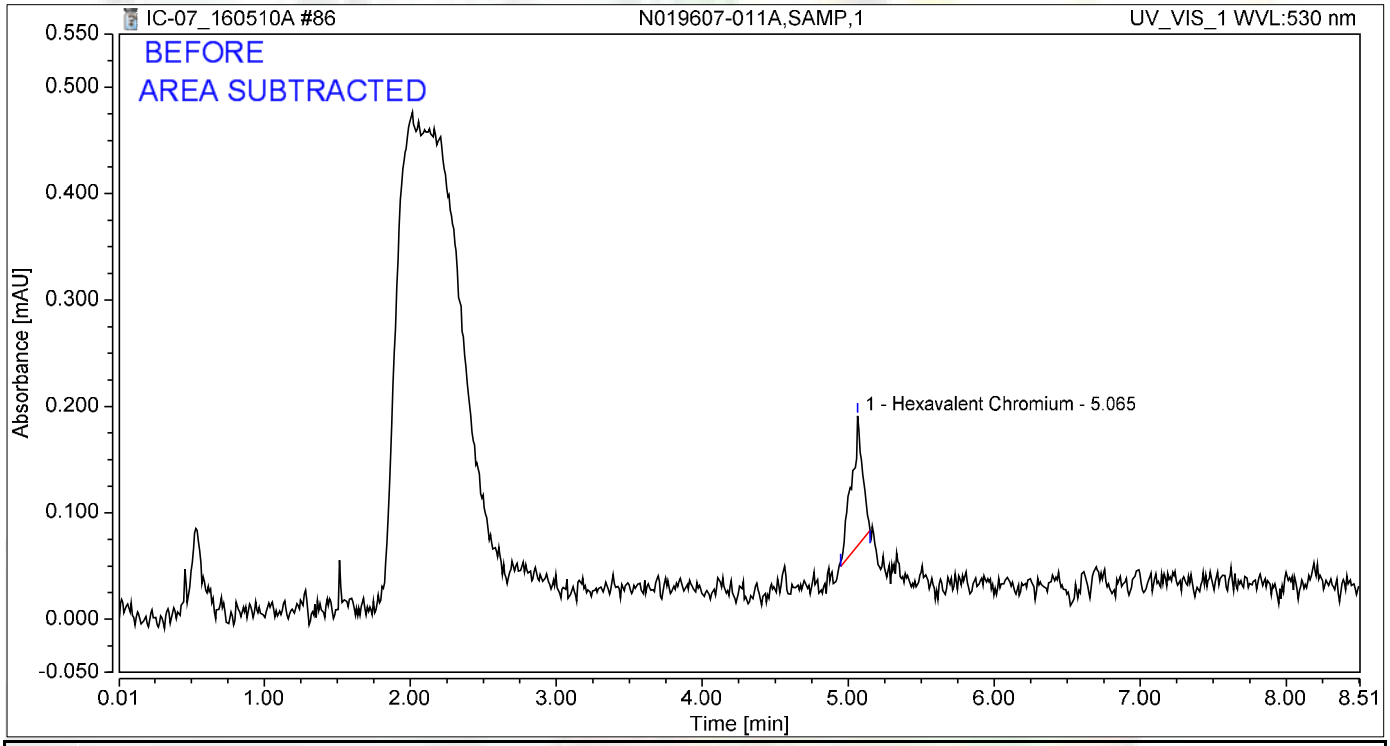
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.011	0.122	100.00	100.00	0.0452
Total:			**0.011**	**0.122**	**100.00**	**100.00**	

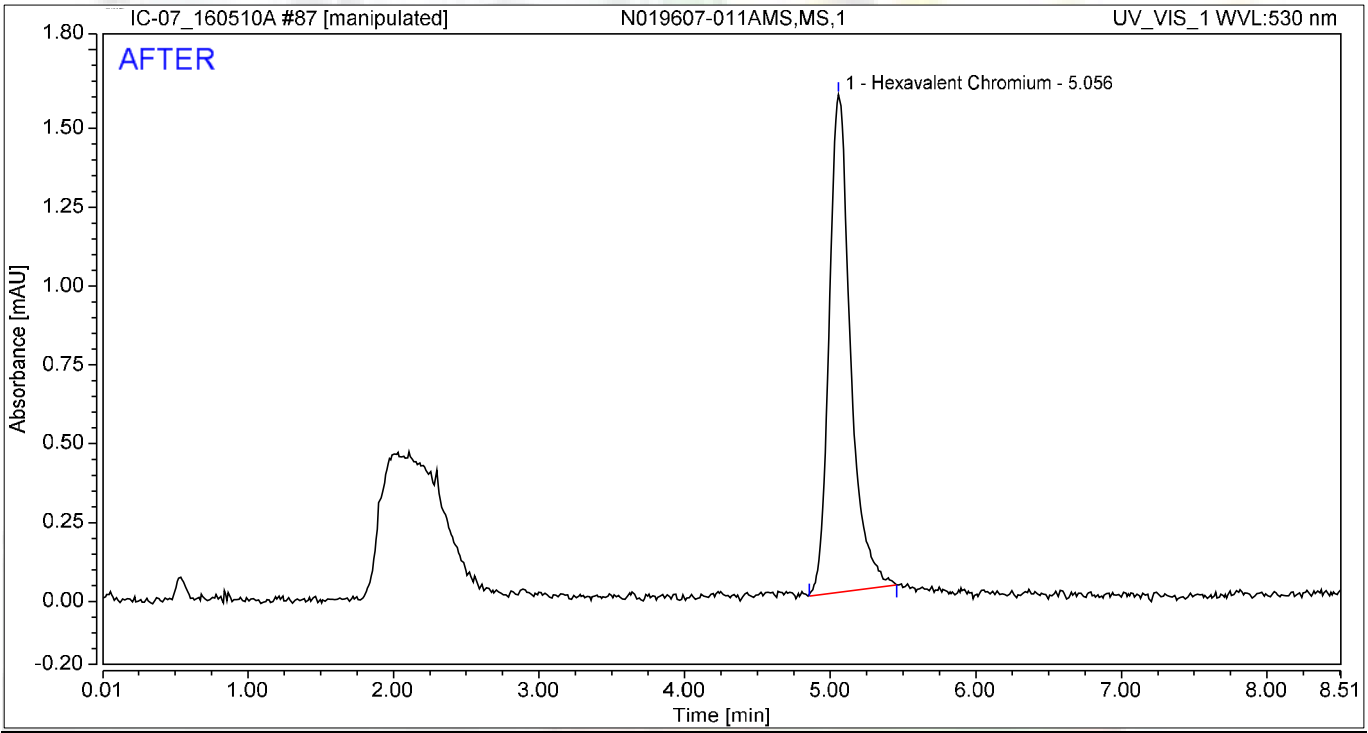
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.270	1.578	100.00	100.00	1.1448
Total:			**0.270**	**1.578**	**100.00**	**100.00**	

5/16/2016

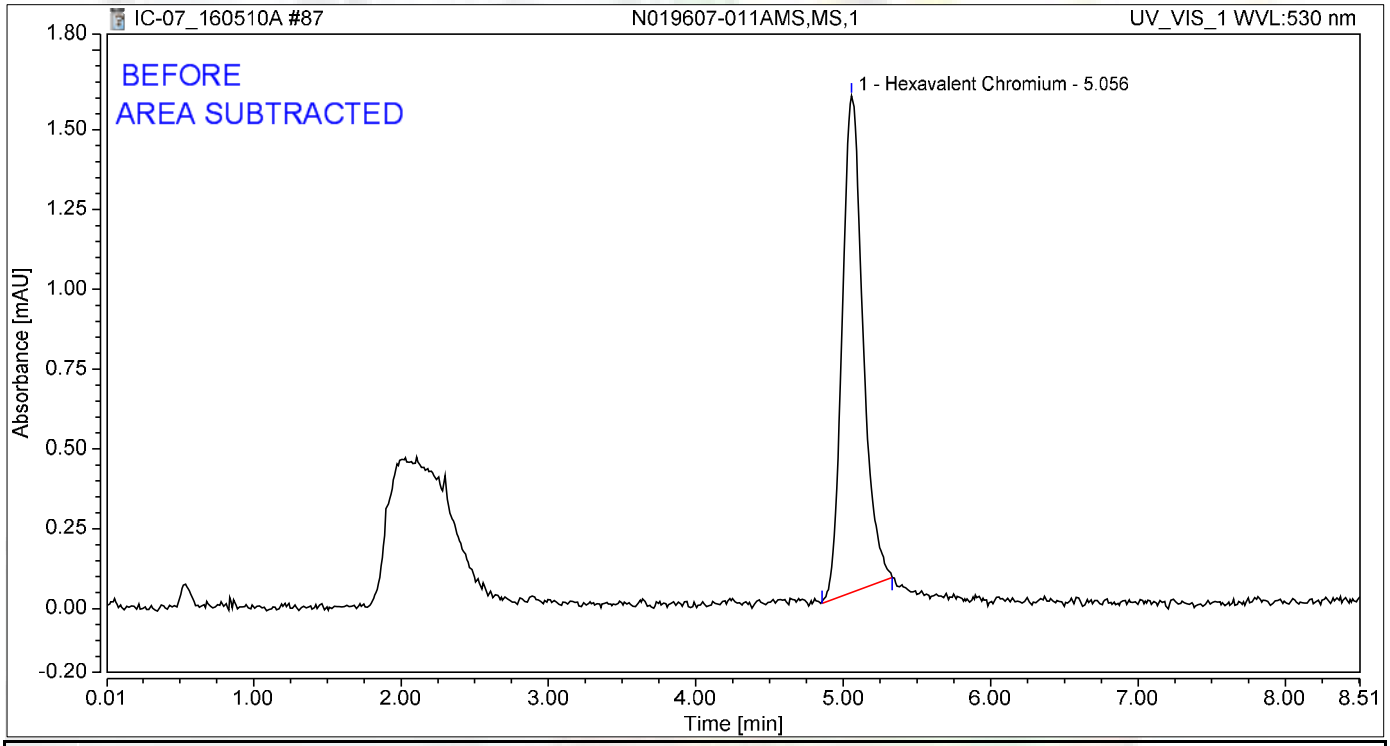
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.254	1.557	100.00	100.00	1.0800
Total:			**0.254**	**1.557**	**100.00**	**100.00**	

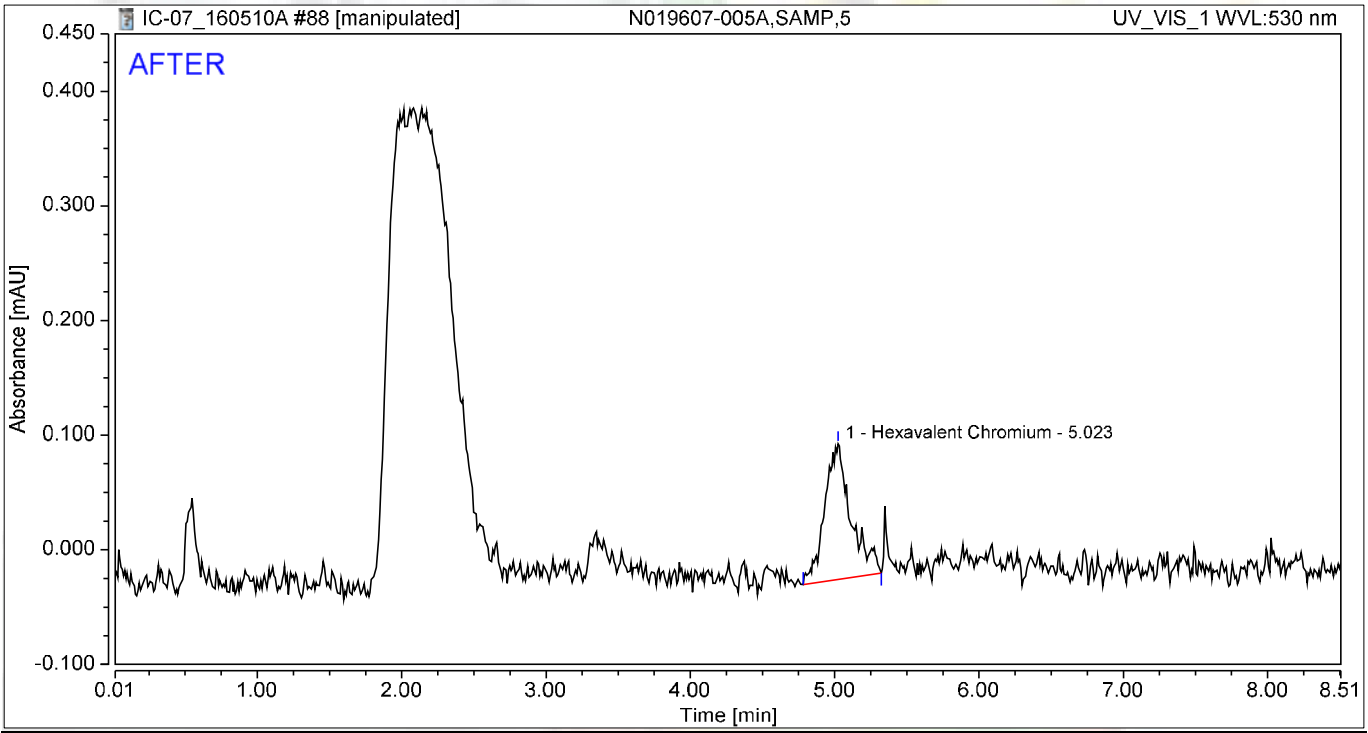
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.025	0.118	100.00	100.00	0.1058
Total:			**0.025**	**0.118**	**100.00**	**100.00**	

5/16/2016

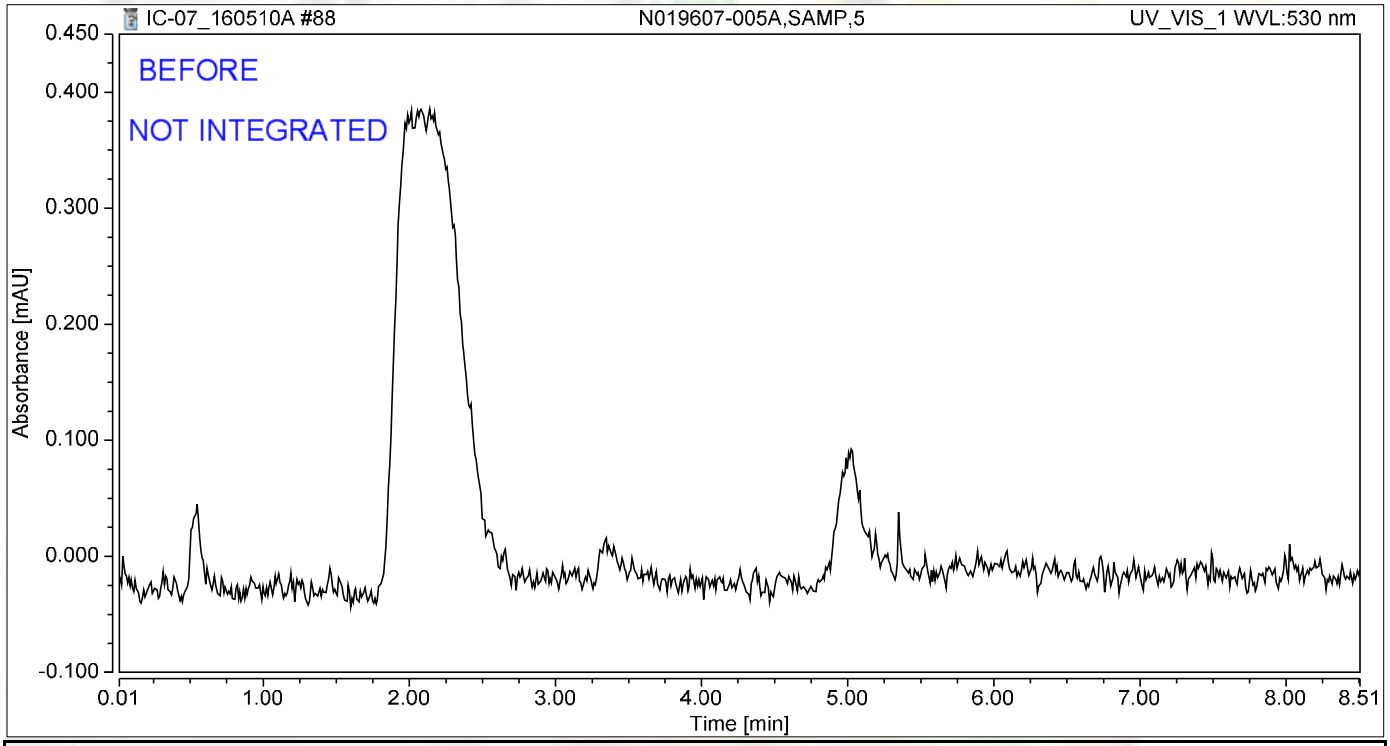
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

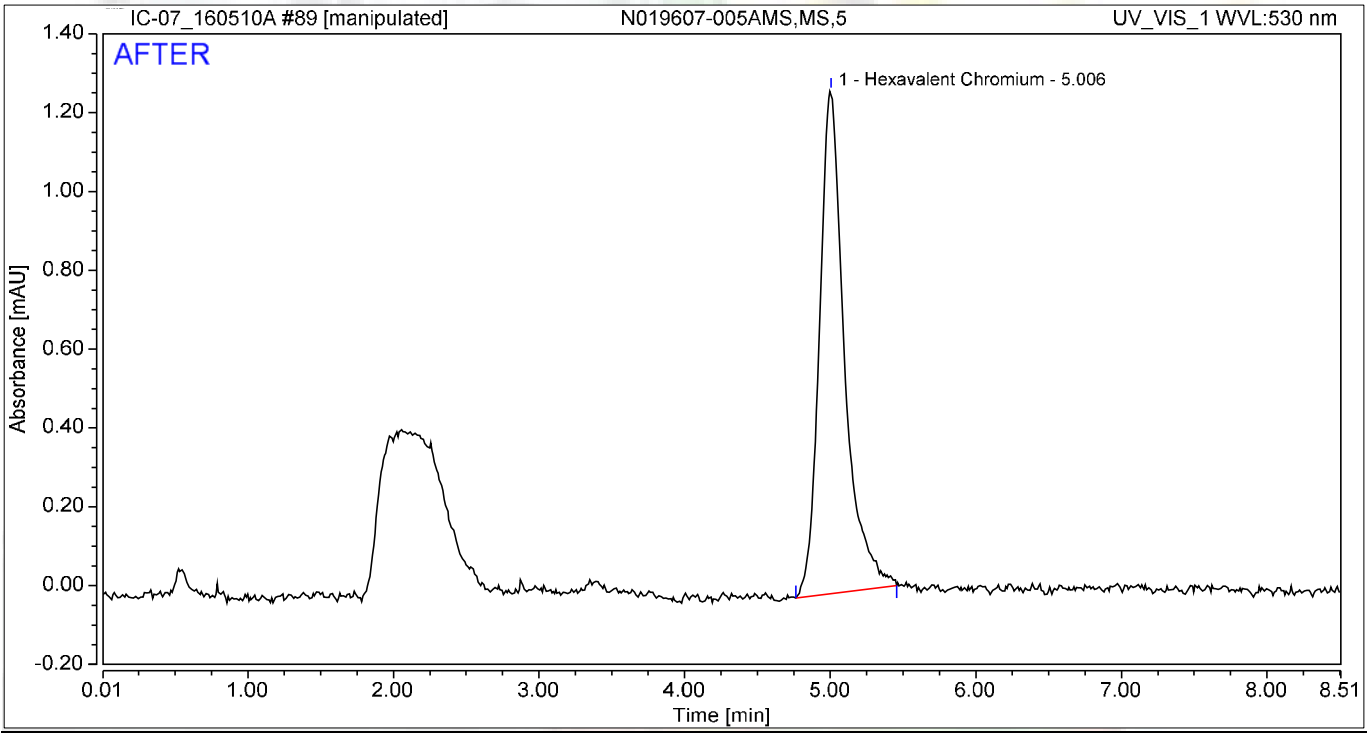
5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.255	1.276	100.00	100.00	1.0832
Total:			**0.255**	**1.276**	**100.00**	**100.00**	

jas 5/16/2016

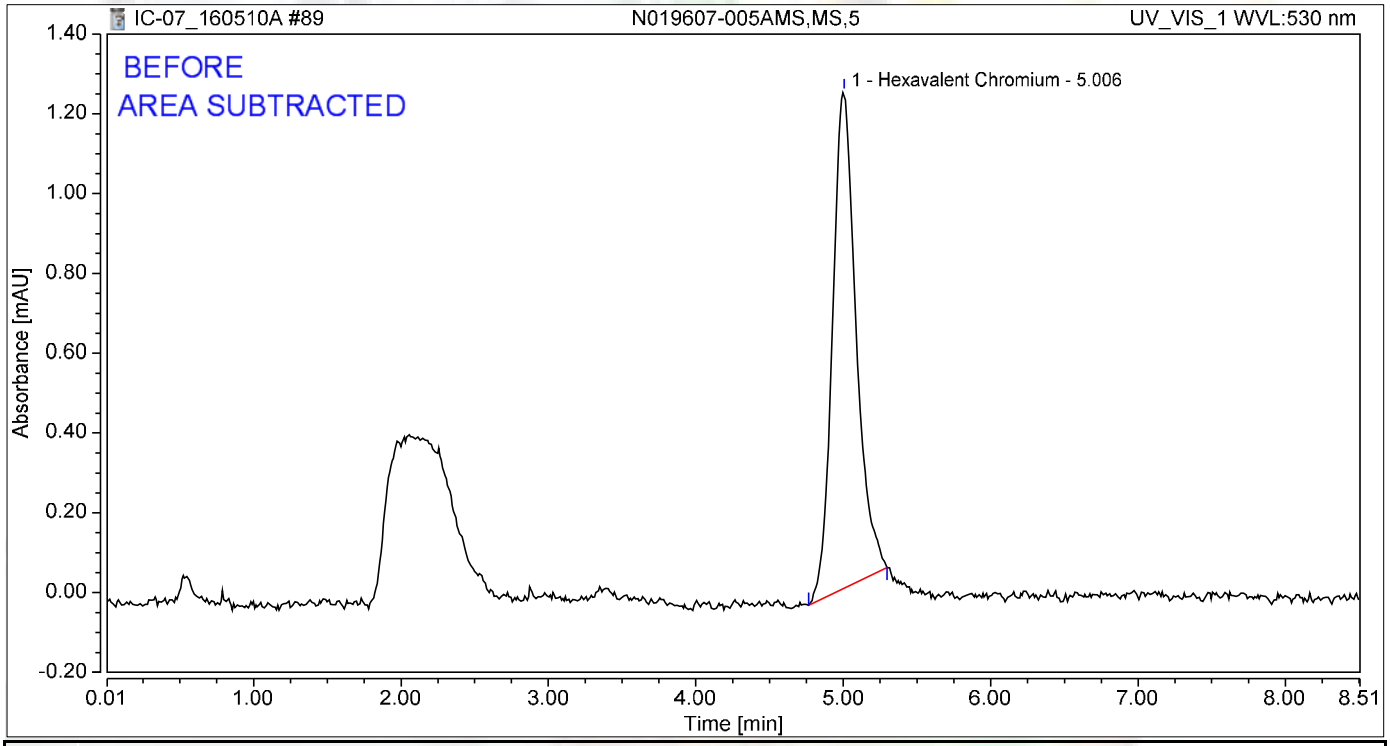
Nancy 5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-005AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.231	1.244	100.00	100.00	0.9804
Total:			**0.231**	**1.244**	**100.00**	**100.00**	

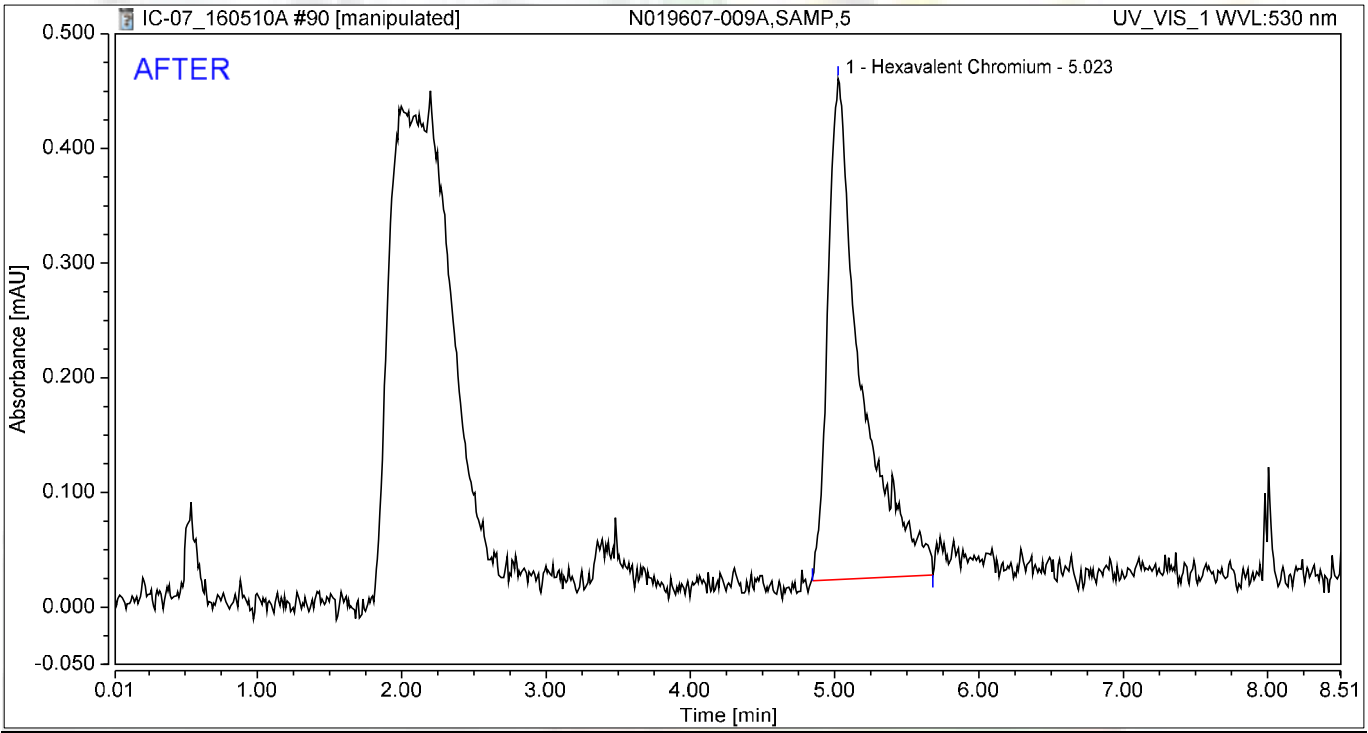
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.116	0.437	100.00	100.00	0.4908
Total:			**0.116**	**0.437**	**100.00**	**100.00**	

5/16/2016

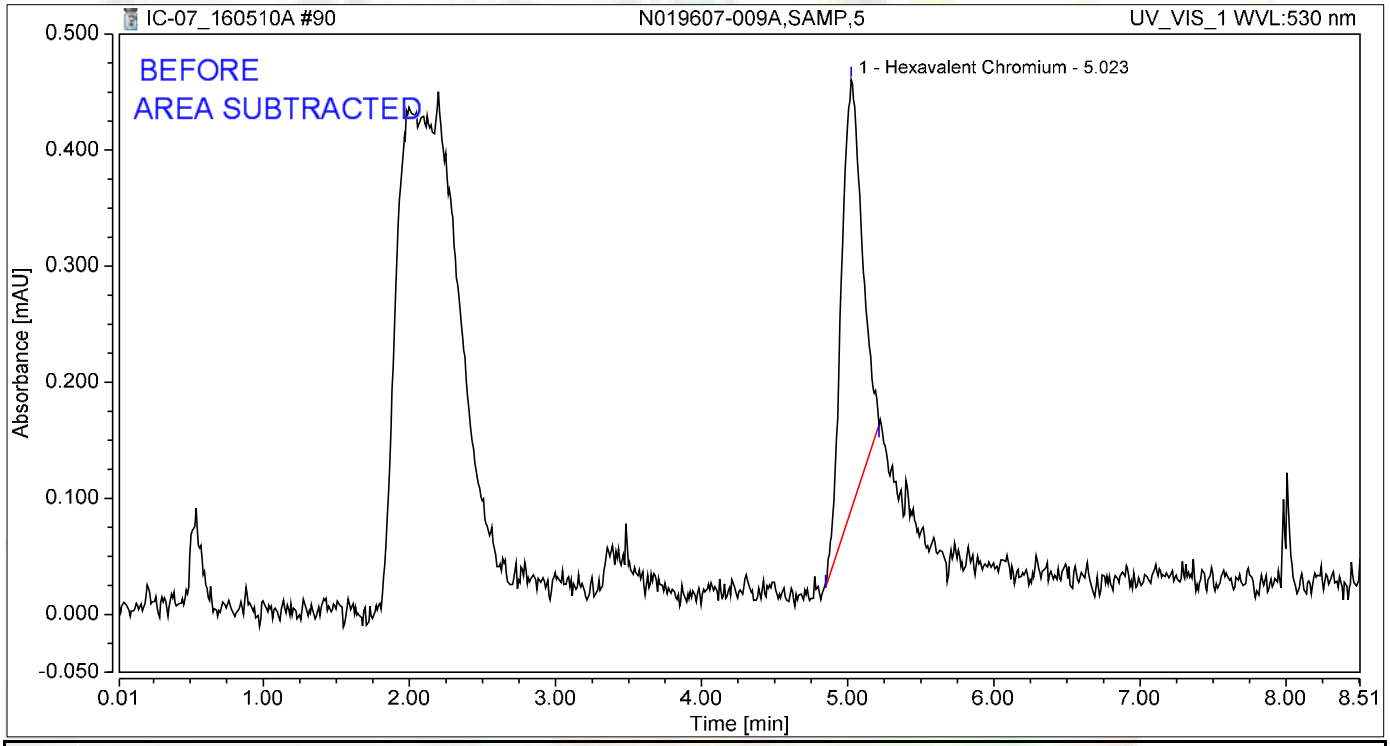
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/May/16 23:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.061	0.371	100.00	100.00	0.2590
Total:			**0.061**	**0.371**	**100.00**	**100.00**	

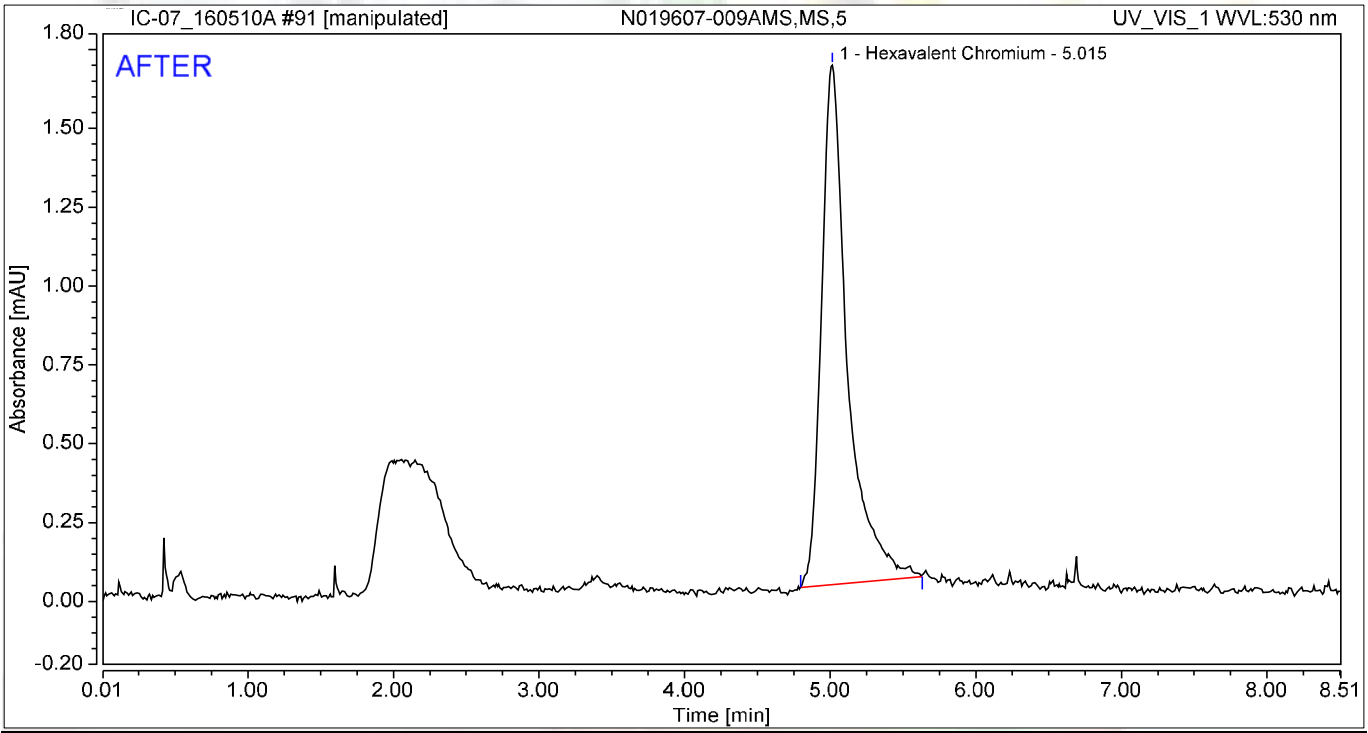
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.015	0.342	1.647	100.00	100.00	1.4525
Total:			**0.342**	**1.647**	**100.00**	**100.00**	

5/16/2016

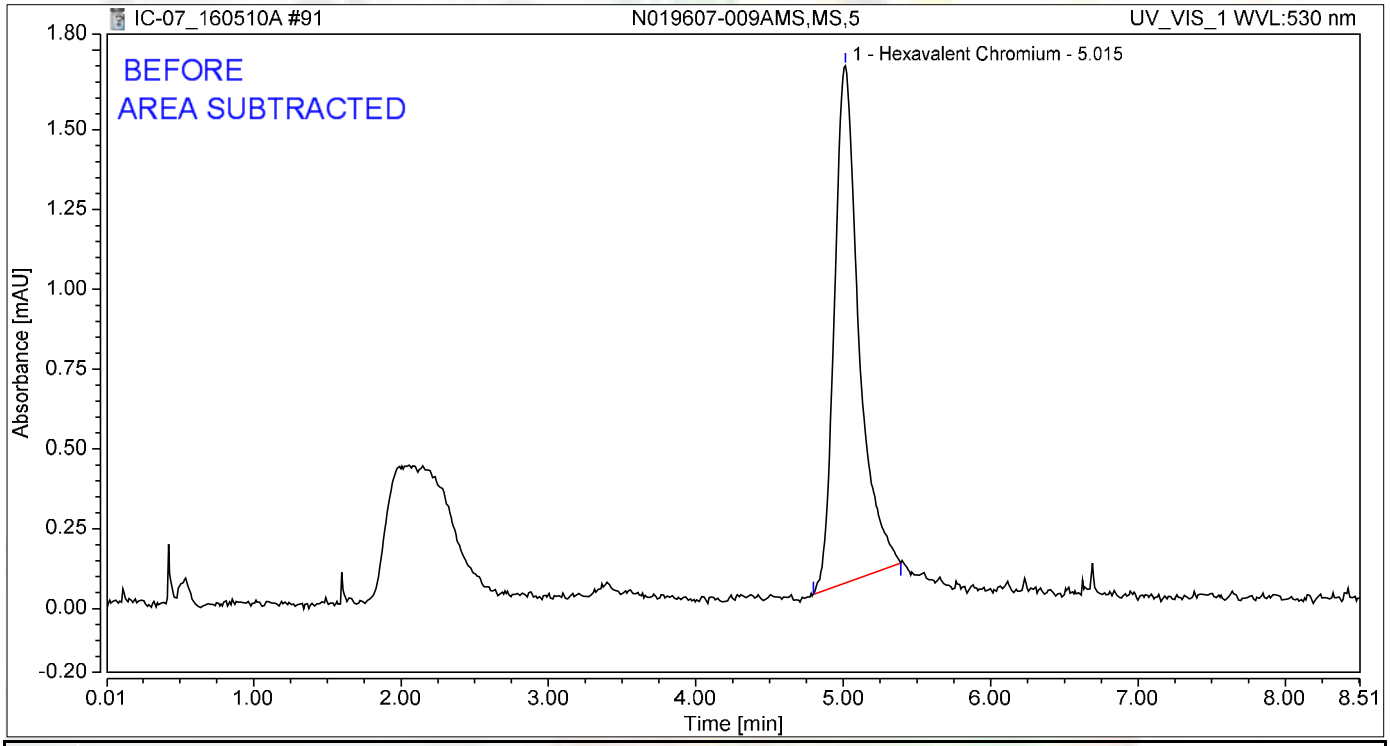
5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-009AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.015	0.311	1.620	100.00	100.00	1.3218
Total:			**0.311**	**1.620**	**100.00**	**100.00**	

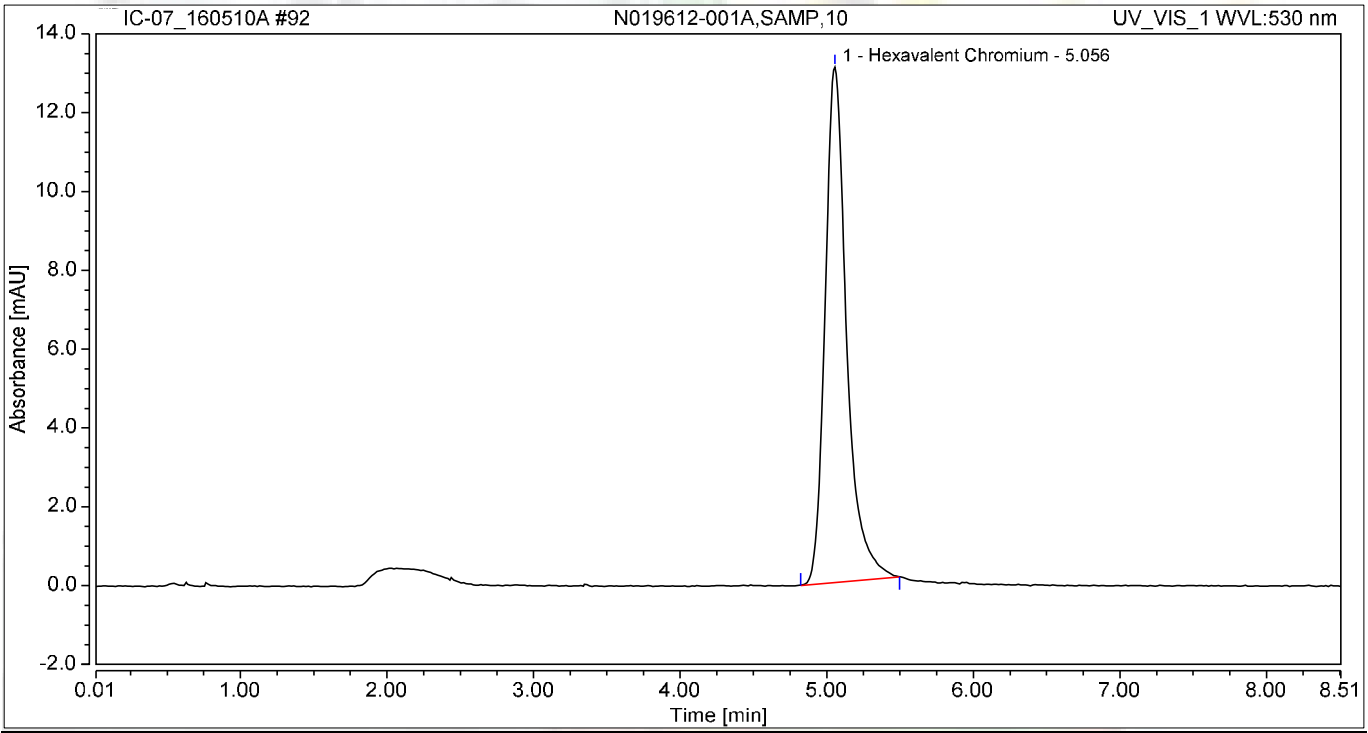
jas 5/16/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019612-001A,SAMP,10**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

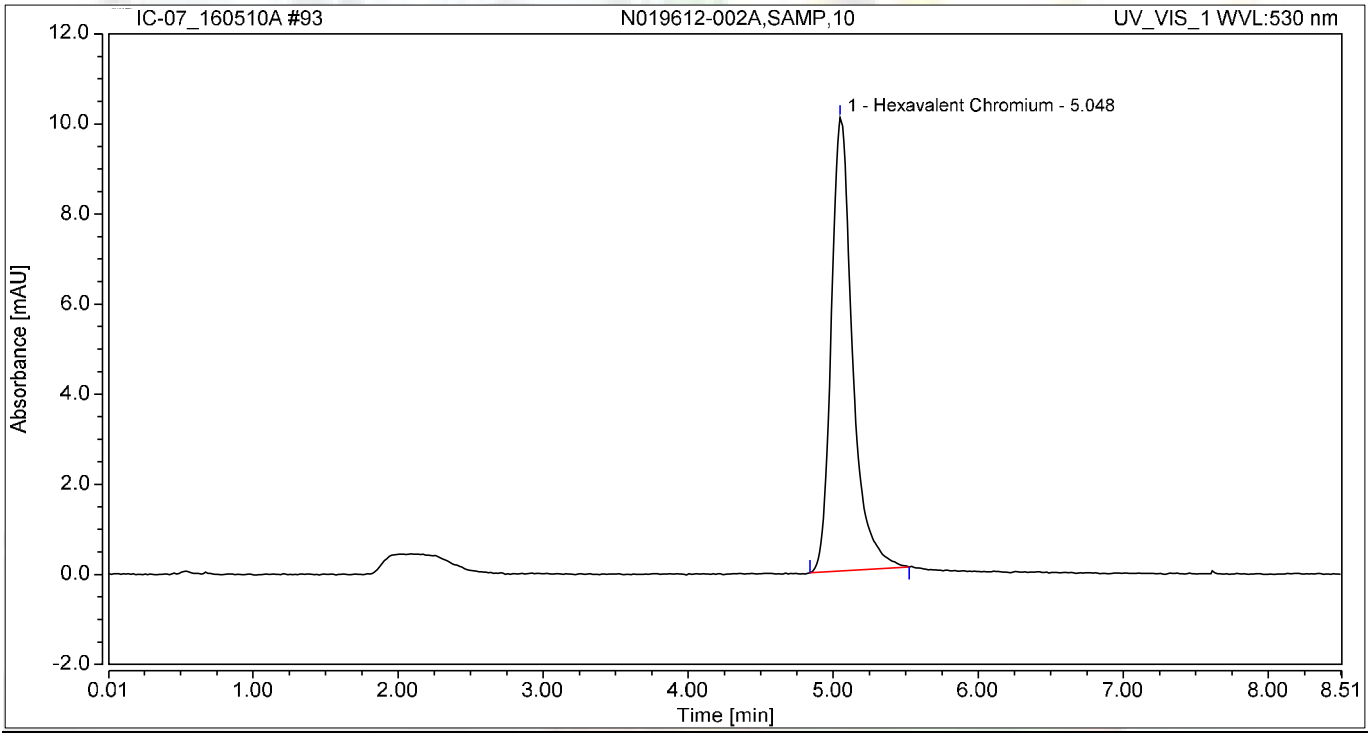
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.229	13.081	100.00	100.00	9.4694
Total:			**2.229**	**13.081**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019612-002A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

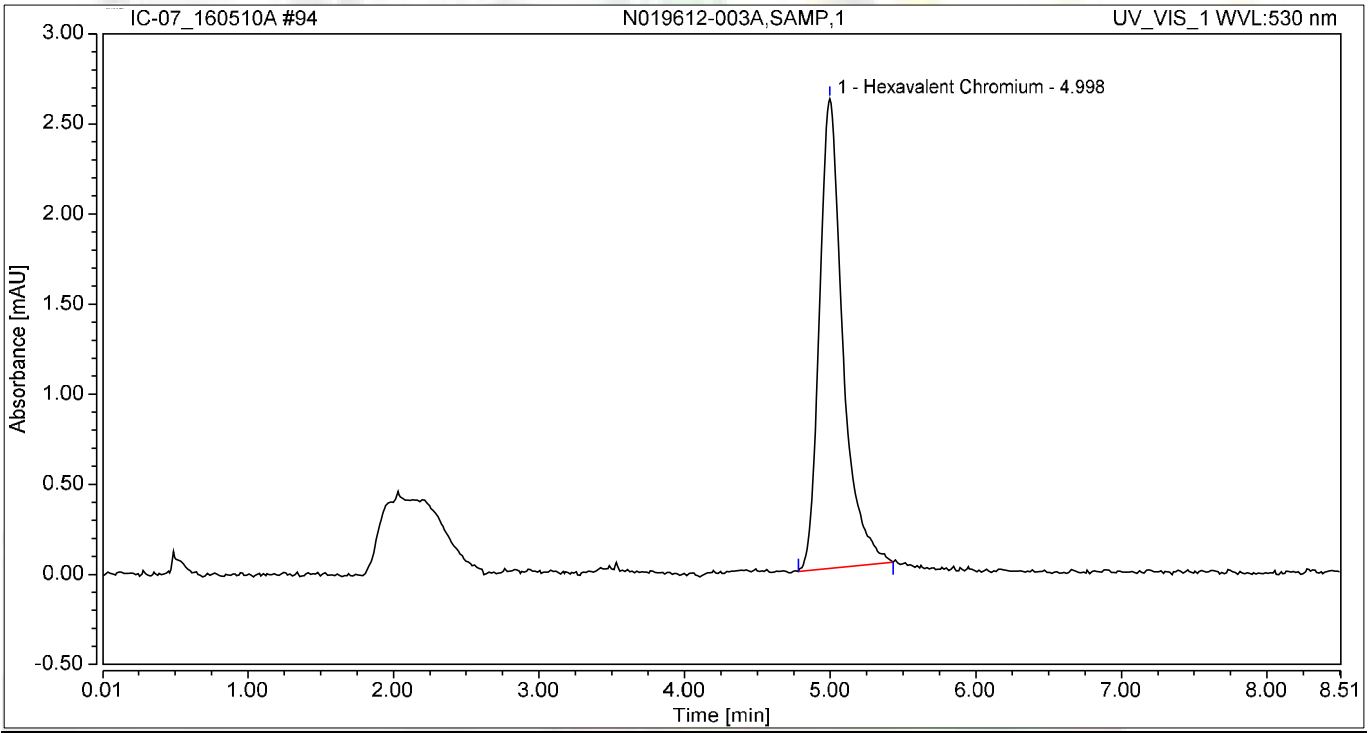
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	1.713	10.063	100.00	100.00	7.2763
Total:			**1.713**	**10.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019612-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

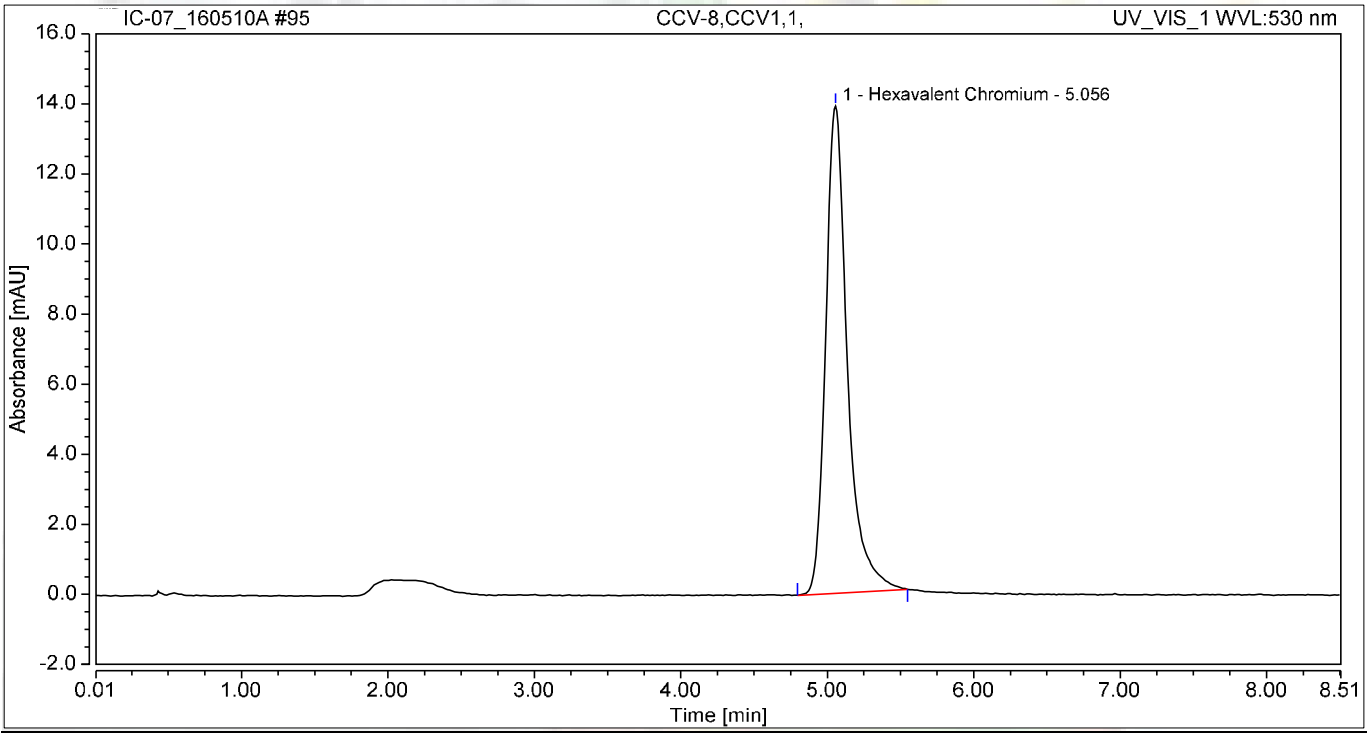
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.998	0.486	2.606	100.00	100.00	2.0648
Total:			**0.486**	**2.606**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

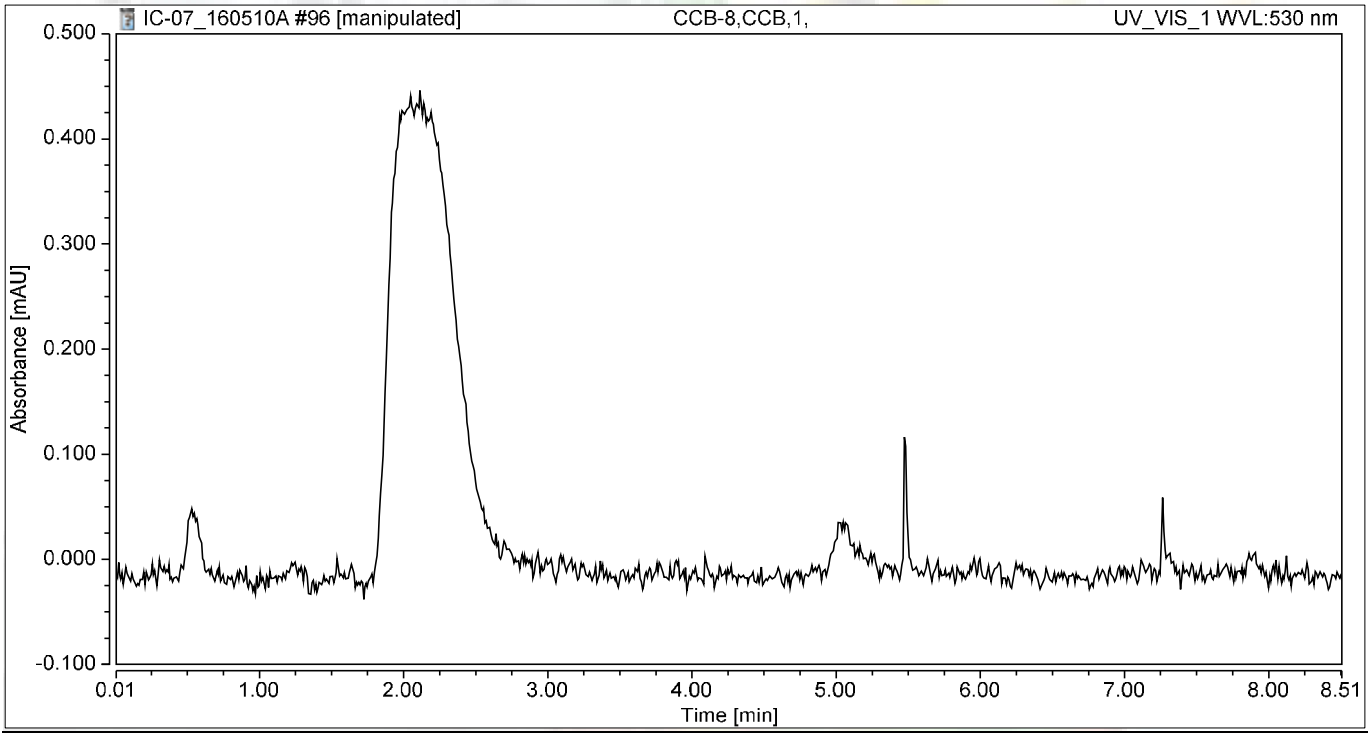
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.395	13.911	100.00	100.00	10.1745
Total:			**2.395**	**13.911**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/16 00:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	BLANK	BLANK	1	Hexavalent Chromium	05/12/16 11:02 AM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	05/12/16 11:13 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	05/12/16 11:23 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/12/16 11:32 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	05/12/16 11:42 AM	Reported
13	MB-R108431	MBLK	1	Hexavalent Chromium	05/12/16 11:51 AM	Reported
14	LCS-R108431	LCS	1	Hexavalent Chromium	05/12/16 12:01 PM	Reported
15	N019719-001A	SAMP	1	Hexavalent Chromium	05/12/16 12:10 PM	Reported
16	N019719-001ADUP	DUP	1	Hexavalent Chromium	05/12/16 12:19 PM	Reported
17	N019719-001AMS	MS	1	Hexavalent Chromium	05/12/16 12:29 PM	Reported
18	N019719-001AMSD	MSD	1	Hexavalent Chromium	05/12/16 12:38 PM	Reported
19	N019719-002A	SAMP	1	Hexavalent Chromium	05/12/16 12:48 PM	Reported
20	N019738-001A	SAMP	1	Hexavalent Chromium	05/12/16 12:57 PM	Reported
21	N019738-002A	SAMP	1	Hexavalent Chromium	05/12/16 1:07 PM	Reported
22	N019738-003A	SAMP	1	Hexavalent Chromium	05/12/16 1:16 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	05/12/16 1:26 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	05/12/16 1:35 PM	Reported
25	N019607-006A	SAMP	5	Hexavalent Chromium	05/12/16 1:45 PM	Reported
26	N019607-006AMS	MS	5	Hexavalent Chromium	05/12/16 1:54 PM	Reported
27	N019607-007A	SAMP	20	Hexavalent Chromium	05/12/16 2:04 PM	Reported
28	N019607-007AMS	MS	20	Hexavalent Chromium	05/12/16 2:13 PM	Reported
29	N019607-008A	SAMP	5	Hexavalent Chromium	05/12/16 2:22 PM	Reported
30	N019607-008AMS	MS	5	Hexavalent Chromium	05/12/16 2:32 PM	Reported
31	N019607-010A	SAMP	5	Hexavalent Chromium	05/12/16 2:41 PM	Reported
32	N019607-010AMS	MS	5	Hexavalent Chromium	05/12/16 2:51 PM	Reported
33	N019628-001A	SAMP	10	Hexavalent Chromium	05/12/16 3:00 PM	Reported
34	N019628-001AMS	MS	10	Hexavalent Chromium	05/12/16 3:10 PM	Reported
35	CCV-3	CCV	1	Hexavalent Chromium	05/12/16 3:19 PM	Reported
36	CCB-3	CCB	1	Hexavalent Chromium	05/12/16 3:29 PM	Reported
37	N019628-002A	SAMP	10	Hexavalent Chromium	05/12/16 3:38 PM	Not Reported
38	N019628-002AMS	MS	10	Hexavalent Chromium	05/12/16 3:48 PM	Not Reported
39	N019628-003A	SAMP	1	Hexavalent Chromium	05/12/16 3:57 PM	Not Reported
40	N019628-003AMS	MS	1	Hexavalent Chromium	05/12/16 4:07 PM	Not Reported
41	N019628-004A	SAMP	200	Hexavalent Chromium	05/12/16 4:16 PM	Reported
42	N019628-004AMS	MS	200	Hexavalent Chromium	05/12/16 4:25 PM	Reported

INJECTION LOG: 160512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019628-005A	SAMP	2500	Hexavalent Chromium	05/12/16 4:35 PM	Reported
44	N019628-005AMS	MS	2500	Hexavalent Chromium	05/12/16 4:44 PM	Reported
45	N019628-006A	SAMP	1	Hexavalent Chromium	05/12/16 4:54 PM	Reported
46	N019628-006AMS	MS	1	Hexavalent Chromium	05/12/16 5:03 PM	Reported
47	CCV-4	CCV1	1	Hexavalent Chromium	05/12/16 5:13 PM	Reported
48	CCB-4	CCB	1	Hexavalent Chromium	05/12/16 5:22 PM	Reported
49	N019628-007A	SAMP	1	Hexavalent Chromium	05/12/16 5:33 PM	Not Reported
50	N019628-007AMS	MS	1	Hexavalent Chromium	05/12/16 5:44 PM	Not Reported
51	N019628-008A	SAMP	1	Hexavalent Chromium	05/12/16 5:54 PM	Reported
52	N019628-008AMS	MS	1	Hexavalent Chromium	05/12/16 6:03 PM	Reported
53	N019628-002A	SAMP	20	Hexavalent Chromium	05/12/16 6:13 PM	Reported
54	N019628-002AMS	MS	20	Hexavalent Chromium	05/12/16 6:22 PM	Reported
55	N019628-003A	SAMP	5	Hexavalent Chromium	05/12/16 6:32 PM	Reported
56	N019628-003AMS	MS	5	Hexavalent Chromium	05/12/16 6:41 PM	Reported
57	N019628-006A	SAMP	5	Hexavalent Chromium	05/12/16 6:51 PM	Not Reported
58	N019628-006AMS	MS	5	Hexavalent Chromium	05/12/16 7:00 PM	Not Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/12/16 7:10 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/12/16 7:19 PM	Reported
61	N019628-007A	SAMP	5	Hexavalent Chromium	05/12/16 7:28 PM	Reported
62	N019628-007AMS	MS	5	Hexavalent Chromium	05/12/16 7:38 PM	Reported
63	N019756-001A	SAMP	1	Hexavalent Chromium	05/12/16 7:47 PM	Reported
64	N019756-002A	SAMP	1	Hexavalent Chromium	05/12/16 7:57 PM	Reported
65	N019590-002A	SAMP	5	Hexavalent Chromium	05/12/16 8:06 PM	Not Reported
66	N019590-002AMS	MS	5	Hexavalent Chromium	05/12/16 8:16 PM	Not Reported
67	N019527-002A	SAMP	1	Hexavalent Chromium	05/12/16 8:25 PM	Not Reported
68	N019527-002AMS	MS	1	Hexavalent Chromium	05/12/16 8:35 PM	Not Reported
69	N019527-005A	SAMP	1	Hexavalent Chromium	05/12/16 8:44 PM	Not Reported
70	N019527-005AMS	MS	1	Hexavalent Chromium	05/12/16 8:54 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/12/16 9:03 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/12/16 9:13 PM	Reported

jas 5/16/2016

Injection Log Summary

Sequence Details

Name:	**IC-07_160512A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**12/May/16 22:11:25**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	BLANK	1	1000	Unknown		05/12/2016 11:02	Finished	
9	BLANK	2	1000	Unknown		05/12/2016 11:13	Finished	
10	CCV-1,CCV,1,	3	1000	Unknown		05/12/2016 11:23	Finished	CCV @5ppb, IWST-160401A
11	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/12/2016 11:32	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	5	1000	Unknown		05/12/2016 11:42	Finished	CCB R160512C
13	MB-H2O,MBLK,1	6	1000	Unknown		05/12/2016 11:51	Finished	MB R160502C
14	LCS-H2O,LCS,1	7	1000	Unknown		05/12/2016 12:01	Finished	LCS, IWST-160401B
15	N019719-001A,SAMP	8	1000	Unknown		05/12/2016 12:10	Finished	SAMP, 10mL
16	N019719-001ADUP,D	9	1000	Unknown		05/12/2016 12:19	Finished	DUP, 10mL
17	N019719-001AMS,MS	10	1000	Unknown		05/12/2016 12:29	Finished	MS (5ppb) , IWST-160401B, 10
18	N019719-001AMSD,M	11	1000	Unknown		05/12/2016 12:38	Finished	MSD (5ppb) , IWST-160401B,
19	N019719-002A,SAMP	12	1000	Unknown		05/12/2016 12:48	Finished	SAMP, 10mL
20	N019738-001A,SAMP	13	1000	Unknown		05/12/2016 12:57	Finished	SAMP, 10mL
21	N019738-002A,SAMP	14	1000	Unknown		05/12/2016 13:07	Finished	SAMP, 10mL
22	N019738-003A,SAMP	15	1000	Unknown		05/12/2016 13:16	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	16	1000	Unknown		05/12/2016 13:26	Finished	CCV @10ppb, IWST-160401A
24	CCB-2,CCB,1,	17	1000	Unknown		05/12/2016 13:35	Finished	CCB R160426G
25	N019607-006A,SAMP	18	1000	Unknown		05/12/2016 13:45	Finished	SAMP, 2.0>10mL
26	N019607-006AMS,MS	19	1000	Unknown		05/12/2016 13:54	Finished	MS (1ppb), IWST-160401B, 2.0
27	N019607-007A,SAMP	20	1000	Unknown		05/12/2016 14:04	Finished	SAMP, 0.5>10mL
28	N019607-007AMS,MS	21	1000	Unknown		05/12/2016 14:13	Finished	MS (5ppb), IWST-160401B, 0.5
29	N019607-008A,SAMP	22	1000	Unknown		05/12/2016 14:22	Finished	SAMP, 2.0>10mL
30	N019607-008AMS,MS	23	1000	Unknown		05/12/2016 14:32	Finished	MS (1ppb), IWST-160401B, 2.0
31	N019607-010A,SAMP	24	1000	Unknown		05/12/2016 14:41	Finished	SAMP, 2.0>10mL
32	N019607-010AMS,MS	25	1000	Unknown		05/12/2016 14:51	Finished	MS (1ppb), IWST-160401B, 2.0
33	N019628-001A,SAMP	26	1000	Unknown		05/12/2016 15:00	Finished	SAMP, 1.0>10mL
34	N019628-001AMS,MS	27	1000	Unknown		05/12/2016 15:10	Finished	MS (5ppb), IWST-160401B, 1.0
35	CCV-3,CCV,1,	28	1000	Unknown		05/12/2016 15:19	Finished	CCV @5pb, IWST-160401A
36	CCB-3,CCB,1,	29	1000	Unknown		05/12/2016 15:29	Finished	CCB
37	N019628-002A,SAMP	30	1000	Unknown		05/12/2016 15:38	Finished	SAMP, 1.0>10mL
38	N019628-002AMS,MS	31	1000	Unknown		05/12/2016 15:48	Finished	MS (5ppb), IWST-160401B, 1.0
39	N019628-003A,SAMP	32	1000	Unknown		05/12/2016 15:57	Finished	SAMP, 10mL
40	N019628-003AMS,MS	33	1000	Unknown		05/12/2016 16:07	Finished	MS (1ppb) , IWST-160401B, 2.
41	N019628-004A,SAMP	34	1000	Unknown		05/12/2016 16:16	Finished	SAMP, 50uL>10mL
42	N019628-004AMS,MS	35	1000	Unknown		05/12/2016 16:25	Finished	MS (5ppb), IWST-160401B, 50
43	N019628-005A,SAMP	36	1000	Unknown		05/12/2016 16:35	Finished	SAMP, 4uL>10mL
44	N019628-005AMS,MS	37	1000	Unknown		05/12/2016 16:44	Finished	MS (5ppb), IWST-160401B, 4u
45	N019628-006A,SAMP	38	1000	Unknown		05/12/2016 16:54	Finished	SAMP, 10mL
46	N019628-006AMS,MS	39	1000	Unknown		05/12/2016 17:03	Finished	MS (1ppb) , IWST-160401B, 2.
47	CCV-4,CCV1,1,	40	1000	Unknown		05/12/2016 17:13	Finished	CCV @10ppb, IWST-160401A
48	CCB-4,CCB,1,	41	1000	Unknown		05/12/2016 17:22	Finished	CCB
49	N019628-007A,SAMP	1	1000	Unknown		05/12/2016 17:33	Finished	SAMP, 10mL
50	N019628-007AMS,MS	2	1000	Unknown		05/12/2016 17:44	Finished	MS (1ppb) , IWST-160401B, 2.
51	N019628-008A,SAMP	3	1000	Unknown		05/12/2016 17:54	Finished	SAMP, 10mL
52	N019628-008AMS,MS	4	1000	Unknown		05/12/2016 18:03	Finished	MS (1ppb) , IWST-160401B, 2.
53	N019628-002A,SAMP	5	1000	Unknown		05/12/2016 18:13	Finished	SAMP, 0.5>10mL
54	N019628-002AMS,MS	6	1000	Unknown		05/12/2016 18:22	Finished	MS (5ppb), IWST-160401B, 0.5
55	N019628-003A,SAMP	7	1000	Unknown		05/12/2016 18:32	Finished	SAMP, 2.0>10mL
56	N019628-003AMS,MS	8	1000	Unknown		05/12/2016 18:41	Finished	MS (1ppb), IWST-160401B, 2.0
57	N019628-006A,SAMP	9	1000	Unknown		05/12/2016 18:51	Finished	SAMP, 2.0>10mL
58	N019628-006AMS,MS	10	1000	Unknown		05/12/2016 19:00	Finished	MS (1ppb), IWST-160401B, 2.0
59	CCV-5,CCV,1,	11	1000	Unknown		05/12/2016 19:10	Finished	CCV @5pb, IWST-160401A
60	CCB-5,CCB,1,	12	1000	Unknown		05/12/2016 19:19	Finished	CCB

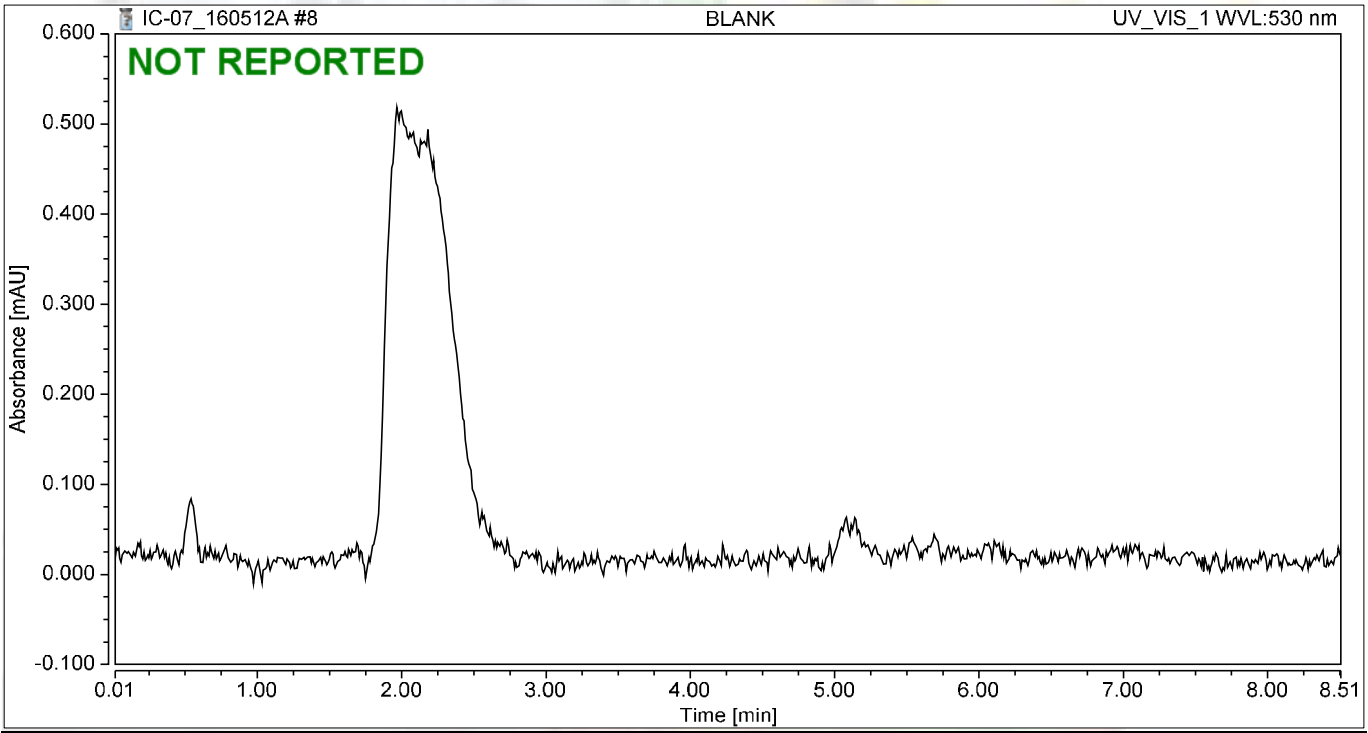
61	N019628-007A,SAMP	13	1000	Unknown		05/12/2016 19:28	Finished	SAMP, 2.0>10mL
62	N019628-007AMS,MS	14	1000	Unknown		05/12/2016 19:38	Finished	MS (1ppb), IWST-160401B, 2.0
63	N019756-001A,SAMP	15	1000	Unknown		05/12/2016 19:47	Finished	SAMP, 10mL
64	N019756-002A,SAMP	16	1000	Unknown		05/12/2016 19:57	Finished	SAMP, 10mL
65	N019590-002A,SAMP	17	1000	Unknown		05/12/2016 20:06	Finished	SAMP, 2.0>10mL
66	N019590-002AMS,MS	18	1000	Unknown		05/12/2016 20:16	Finished	MS (1ppb), IWST-160401B, 2.0
67	N019527-002A,SAMP	19	1000	Unknown		05/12/2016 20:25	Finished	SAMP, 10mL
68	N019527-002AMS,MS	20	1000	Unknown		05/12/2016 20:35	Finished	MS (1ppb) , IWST-160401B,10
69	N019527-005A,SAMP	21	1000	Unknown		05/12/2016 20:44	Finished	SAMP, 10mL
70	N019527-005AMS,MS	22	1000	Unknown		05/12/2016 20:54	Finished	MS (1ppb) , IWST-160401B,10
71	CCV-6,CCV1,1,	23	1000	Unknown		05/12/2016 21:03	Finished	CCV @10ppb, IWST-160401A
72	CCB-6,CCB,1,	24	1000	Unknown		05/12/2016 21:13	Finished	CCB
73	SHUTDOWN	25	1000	Unknown		05/12/2016 21:22	Finished	
74	Eluent: R160510A, R	26	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R160510F	27	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

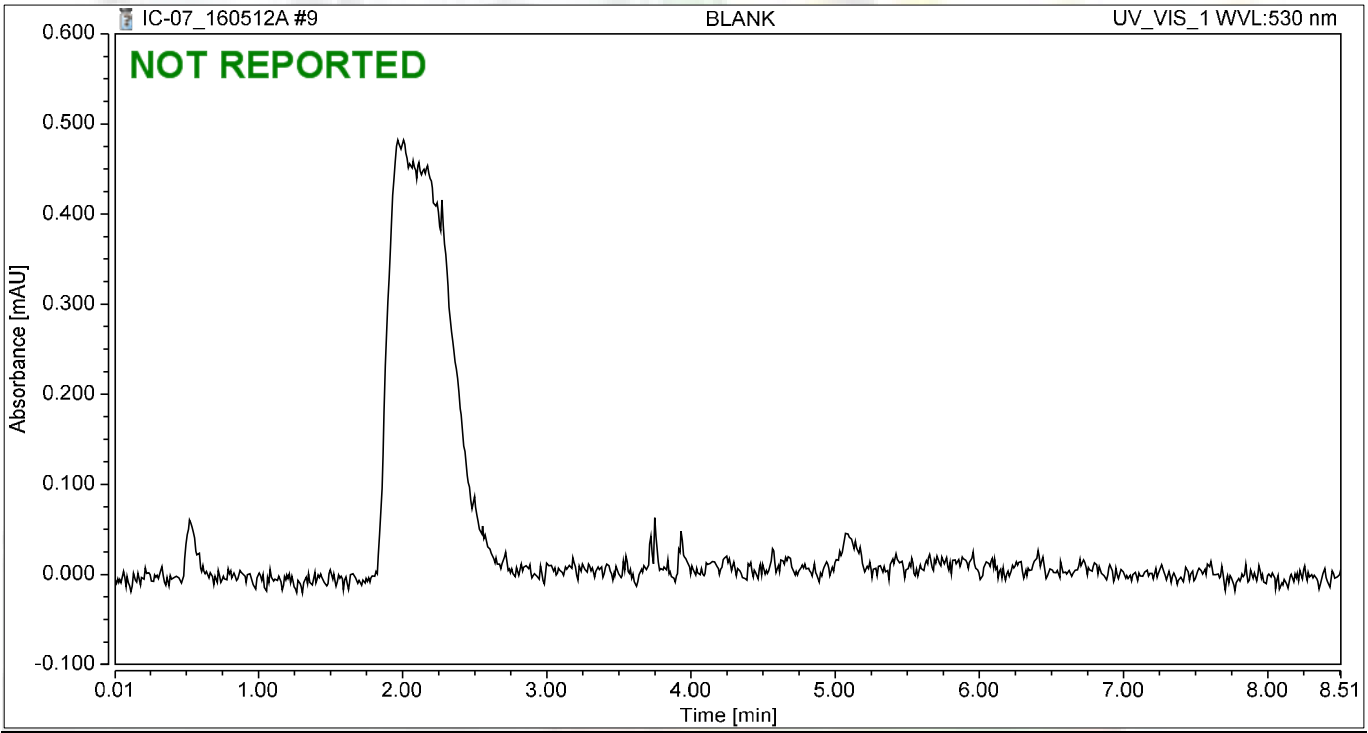
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

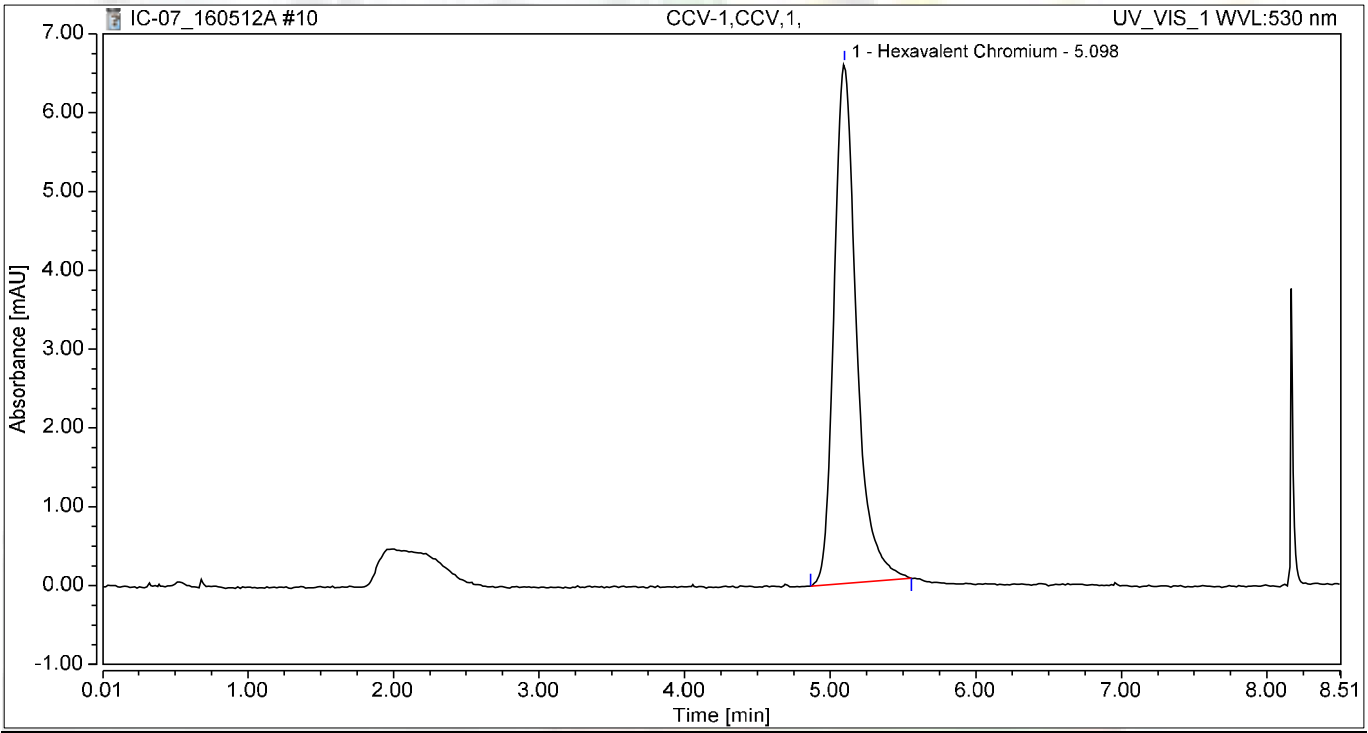
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

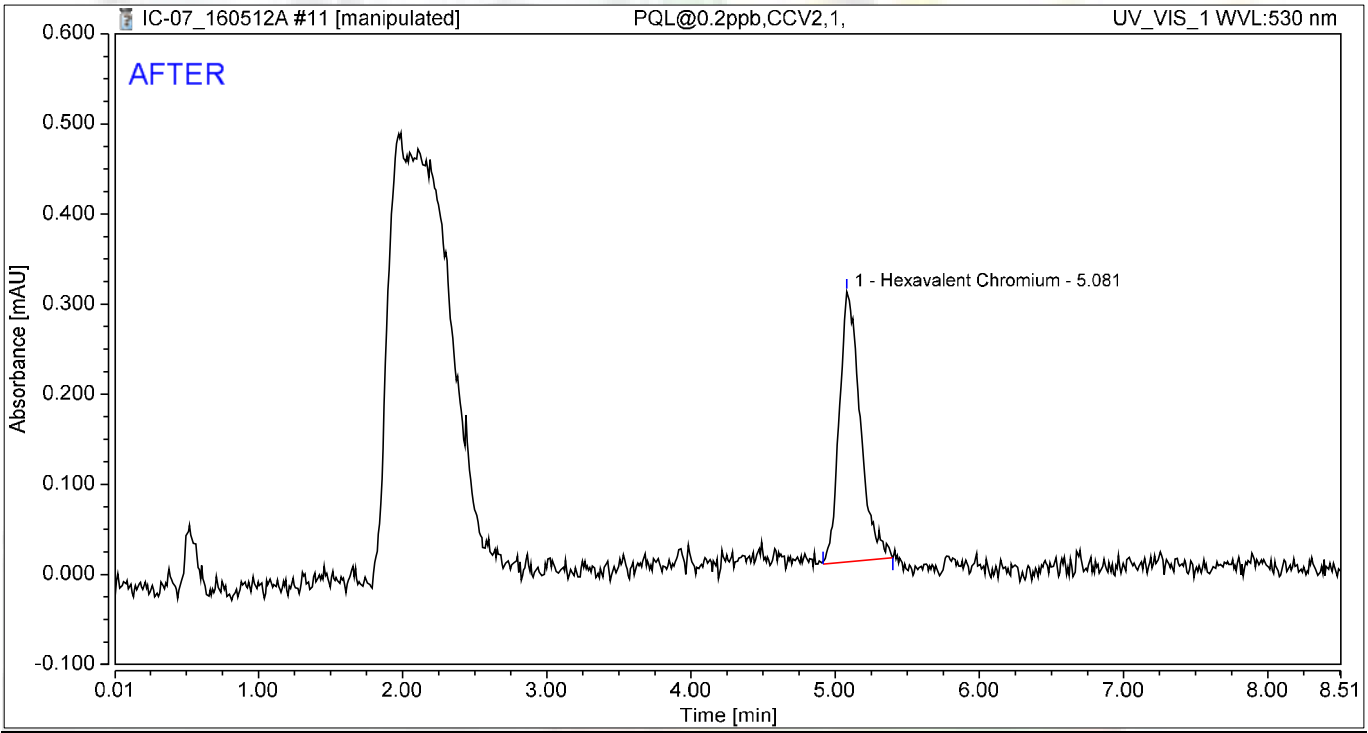
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	1.178	6.599	100.00	100.00	5.0038
Total:			**1.178**	**6.599**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.051	0.300	100.00	100.00	0.2152
Total:			**0.051**	**0.300**	**100.00**	**100.00**	

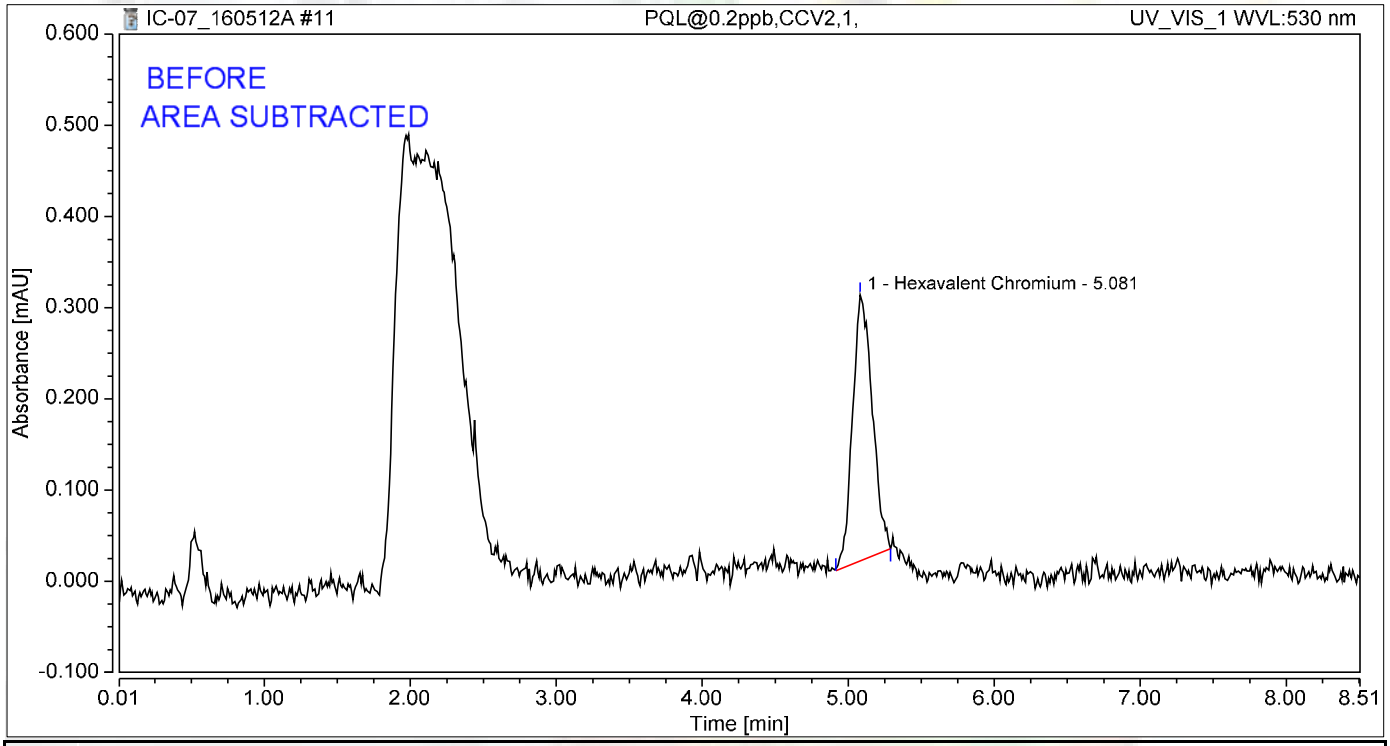
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.045	0.292	100.00	100.00	0.1931
Total:			**0.045**	**0.292**	**100.00**	**100.00**	

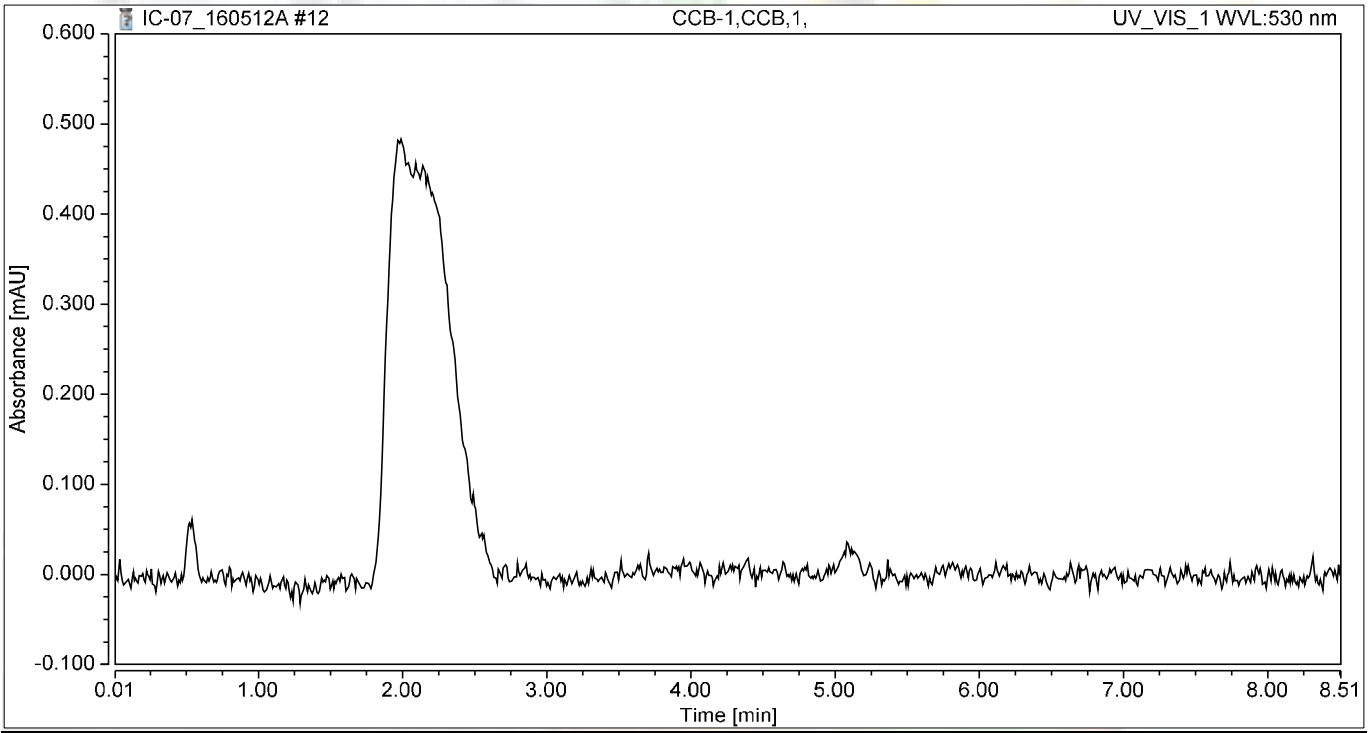
JAS 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

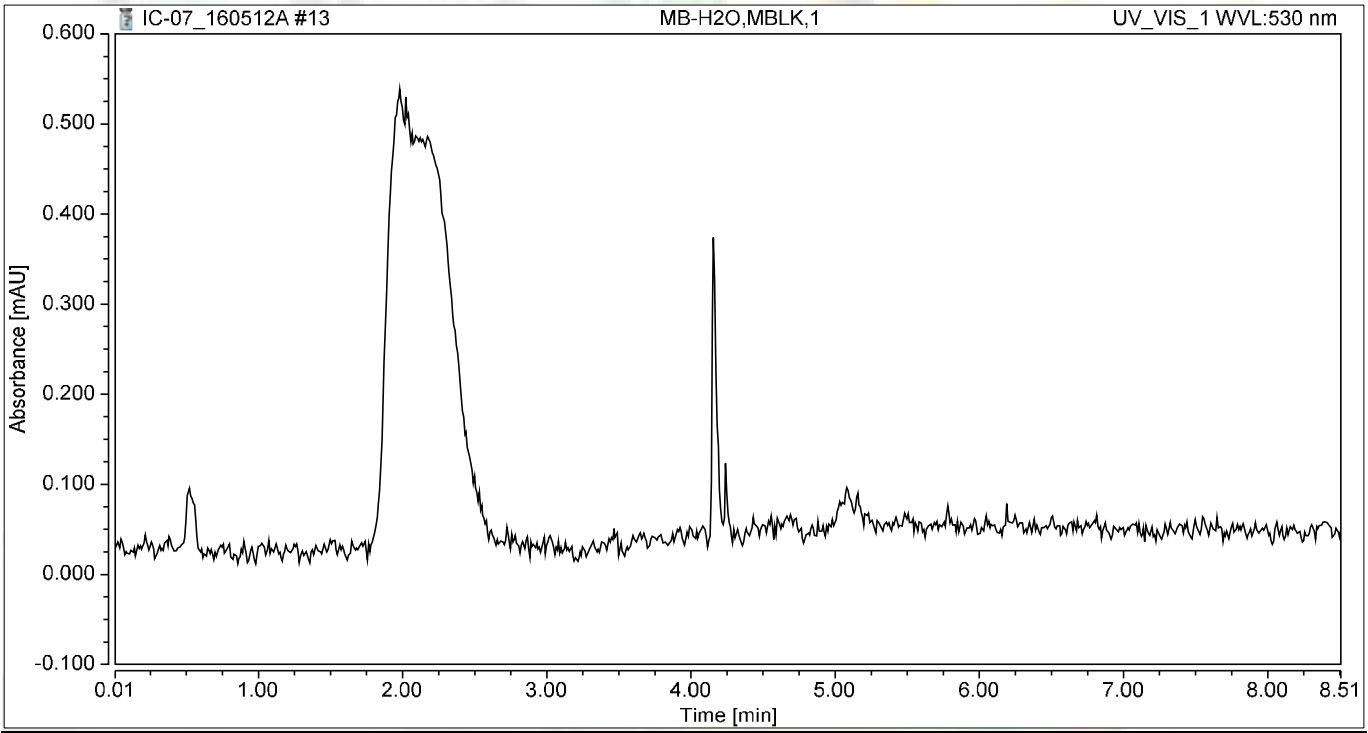
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

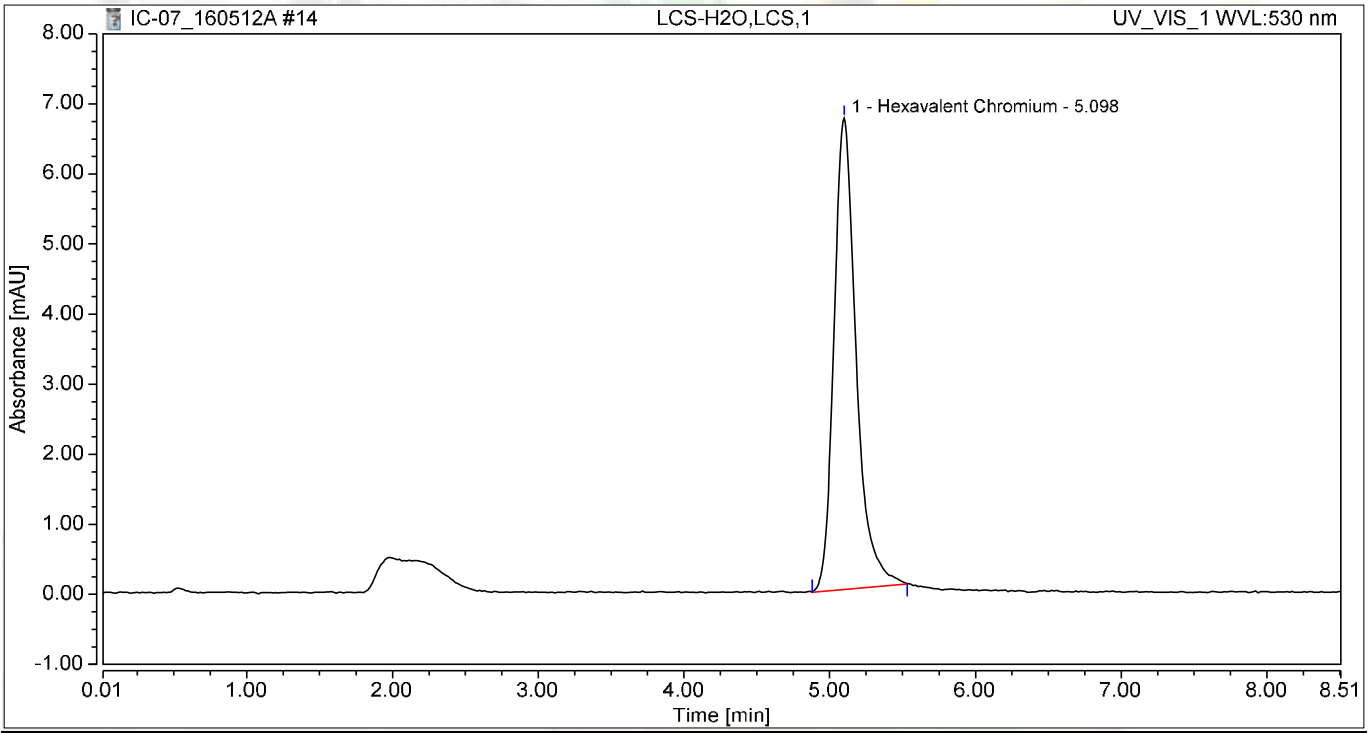
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

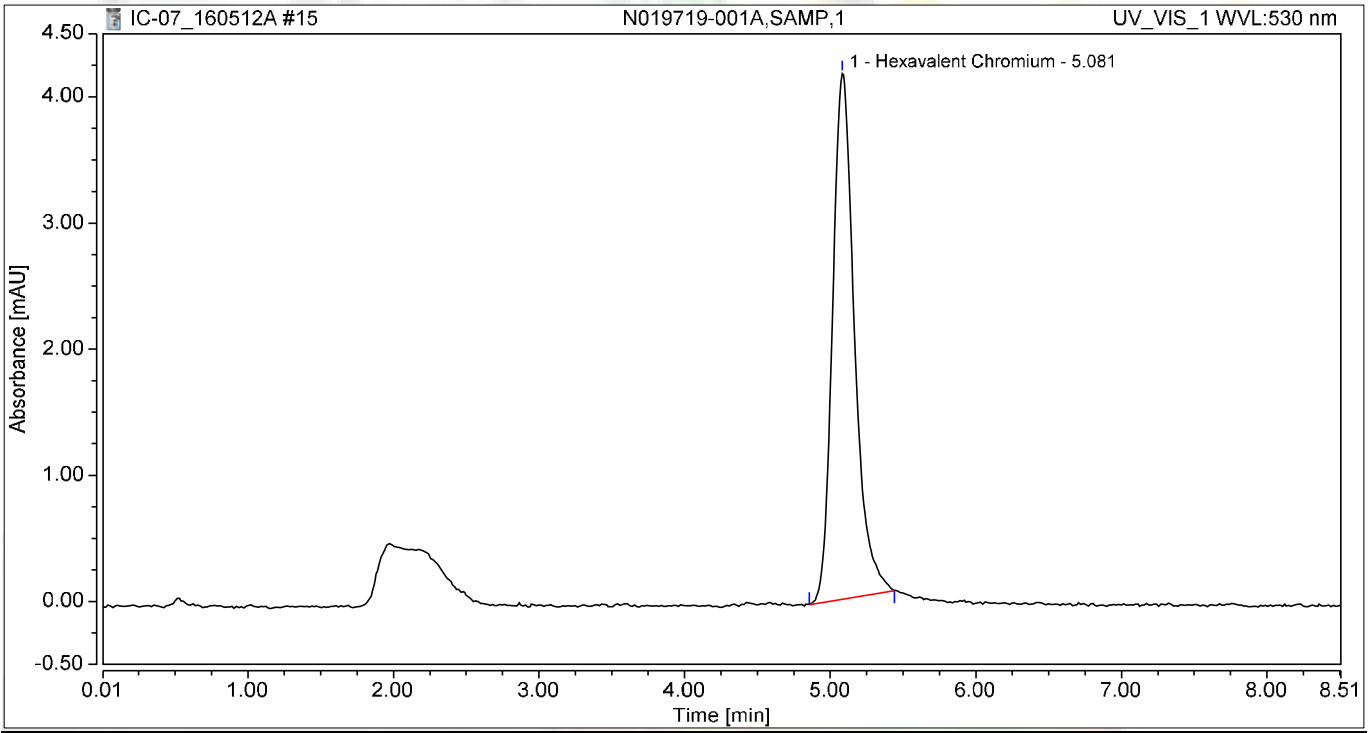
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	1.186	6.727	100.00	100.00	5.0374
Total:			**1.186**	**6.727**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

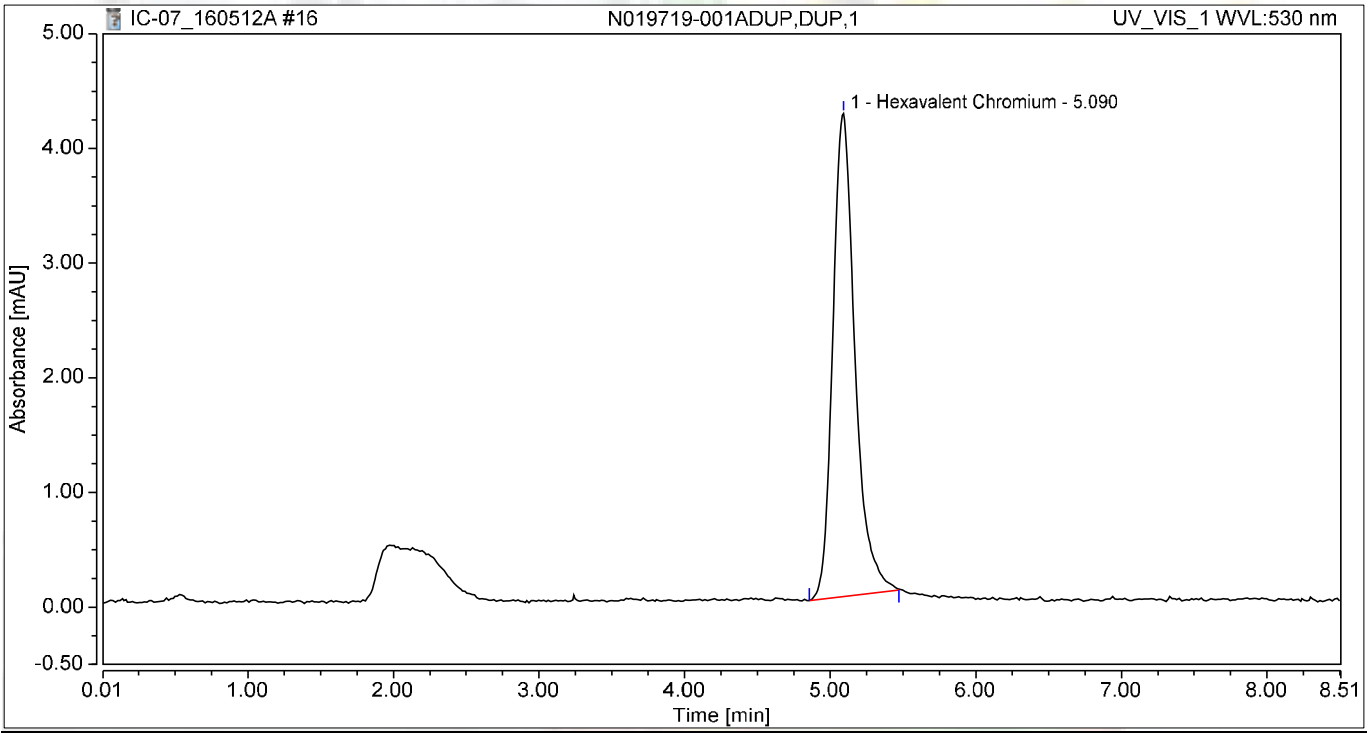
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.728	4.170	100.00	100.00	3.0912
Total:			**0.728**	**4.170**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

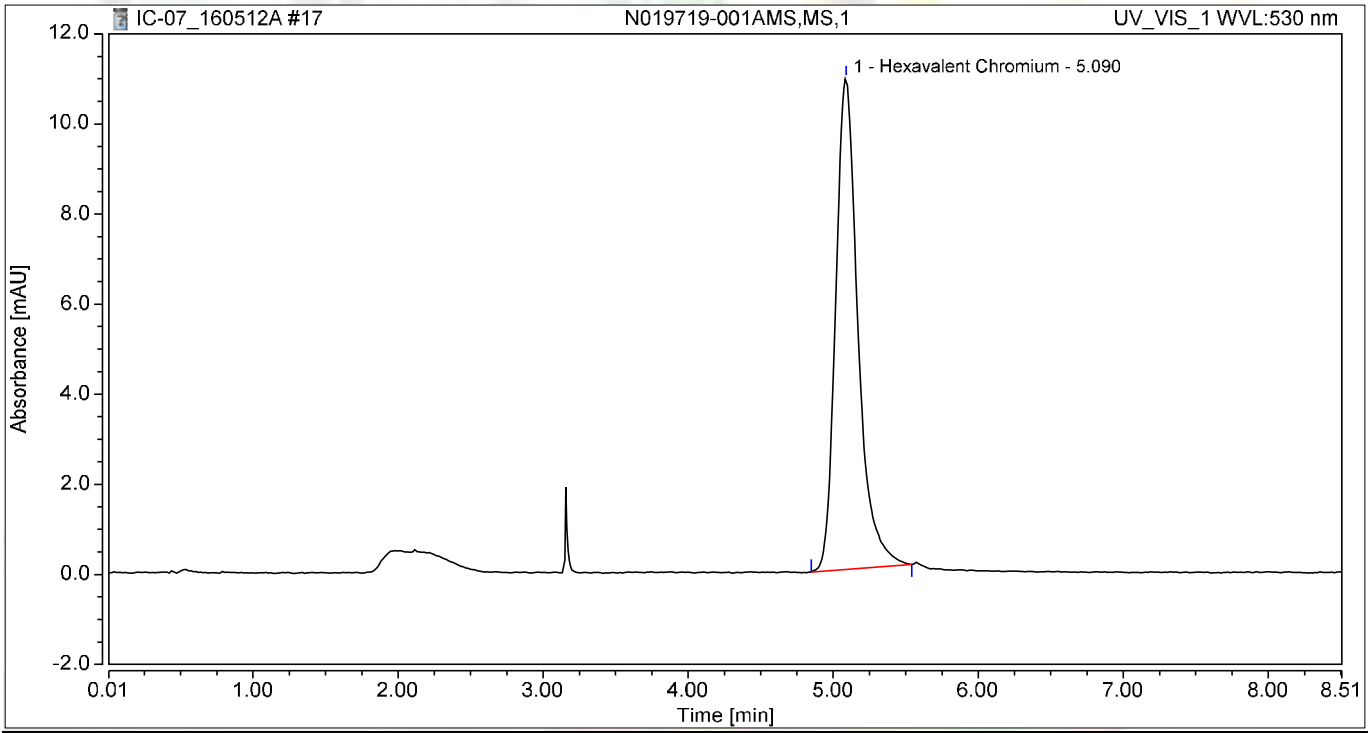
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.742	4.211	100.00	100.00	3.1536
Total:			**0.742**	**4.211**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

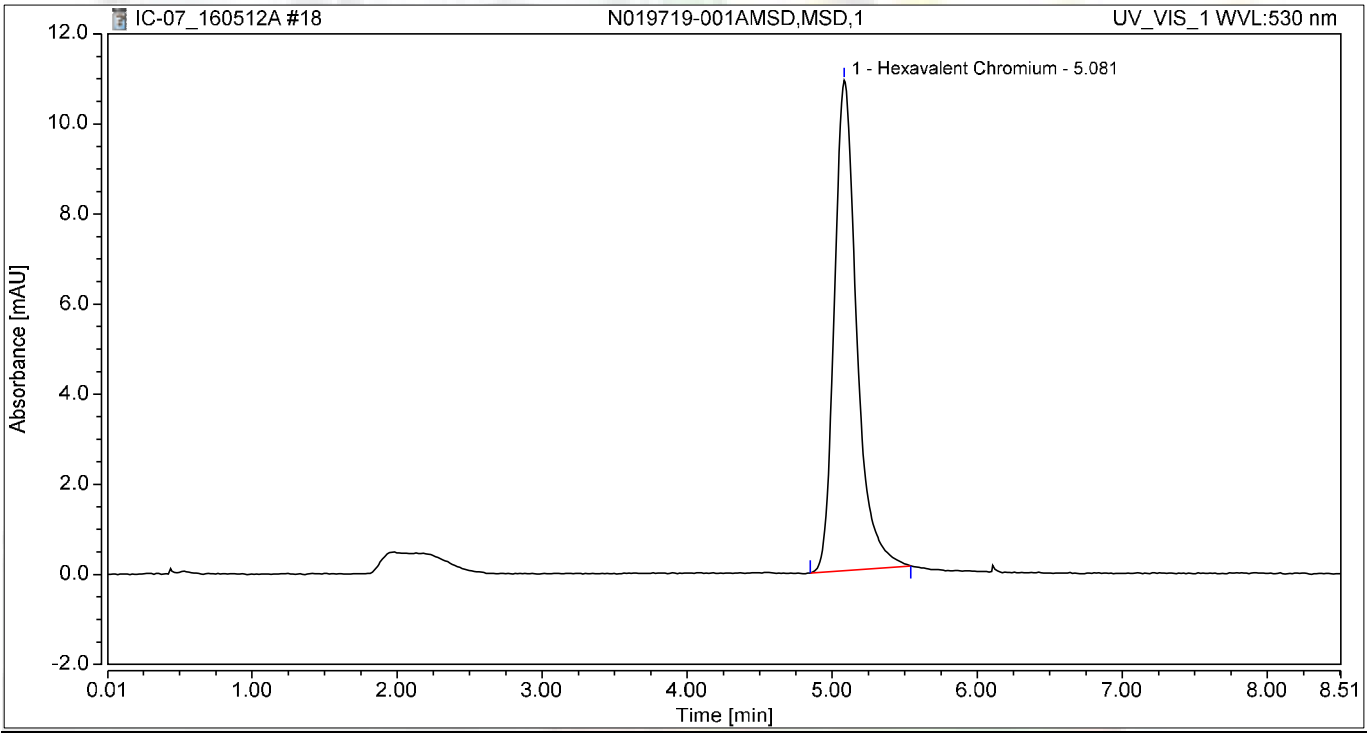
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.942	10.903	100.00	100.00	8.2479
Total:			**1.942**	**10.903**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-001AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

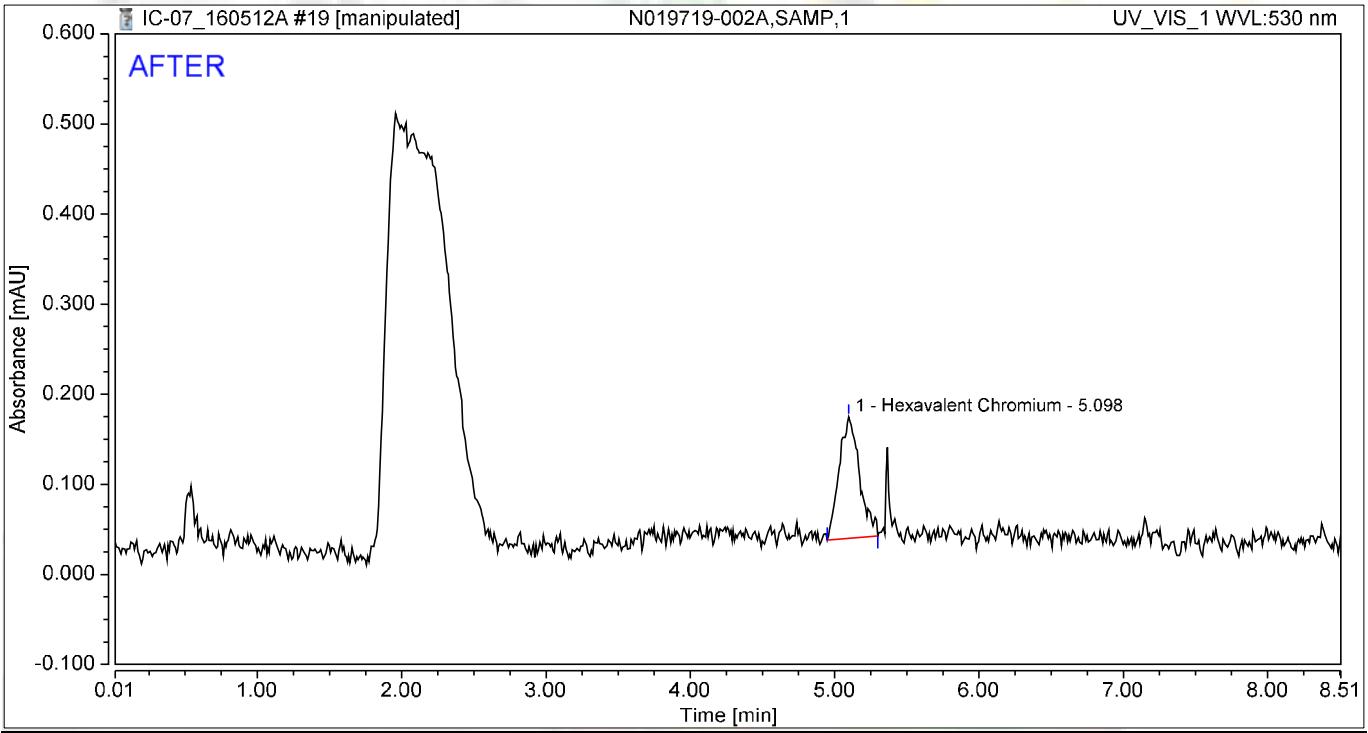
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	1.946	10.883	100.00	100.00	8.2652
Total:			**1.946**	**10.883**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.022	0.135	100.00	100.00	0.0934
Total:			**0.022**	**0.135**	**100.00**	**100.00**	

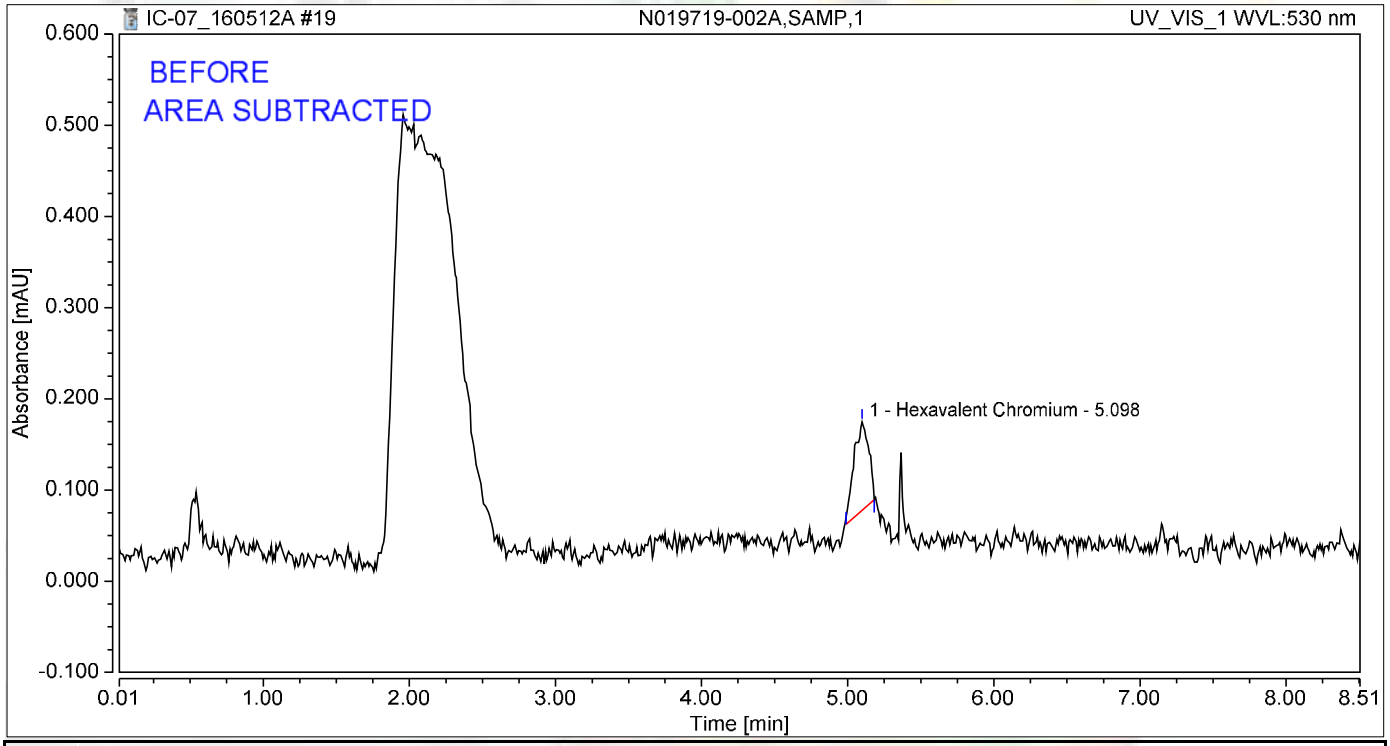
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019719-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.011	0.097	100.00	100.00	0.0478
Total:			**0.011**	**0.097**	**100.00**	**100.00**	

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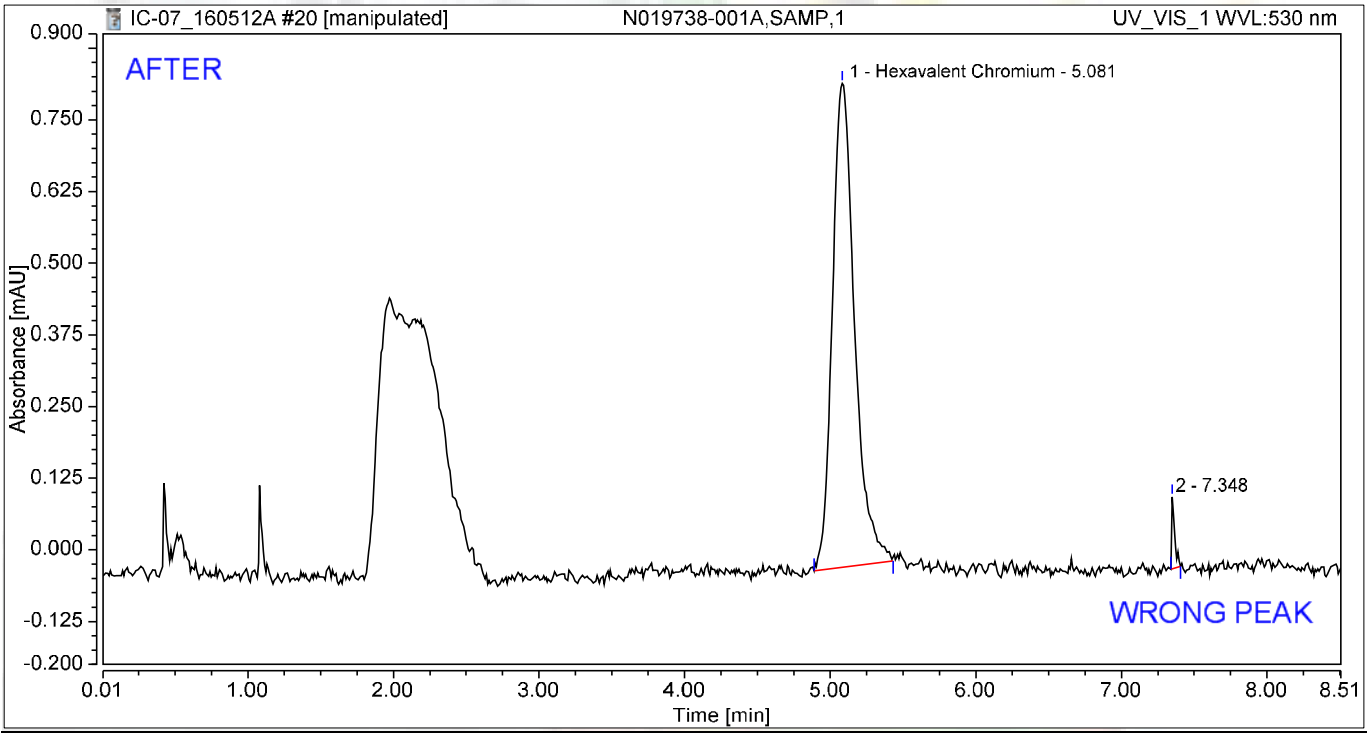
Chromatogram and Results

Injection Details

Injection Name:	**N019738-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.149	0.844	98.02	87.05	0.6340
2		7.348	0.003	0.126	1.98	12.95	n.a.
Total:			**0.152**	**0.970**	**100.00**	**100.00**	

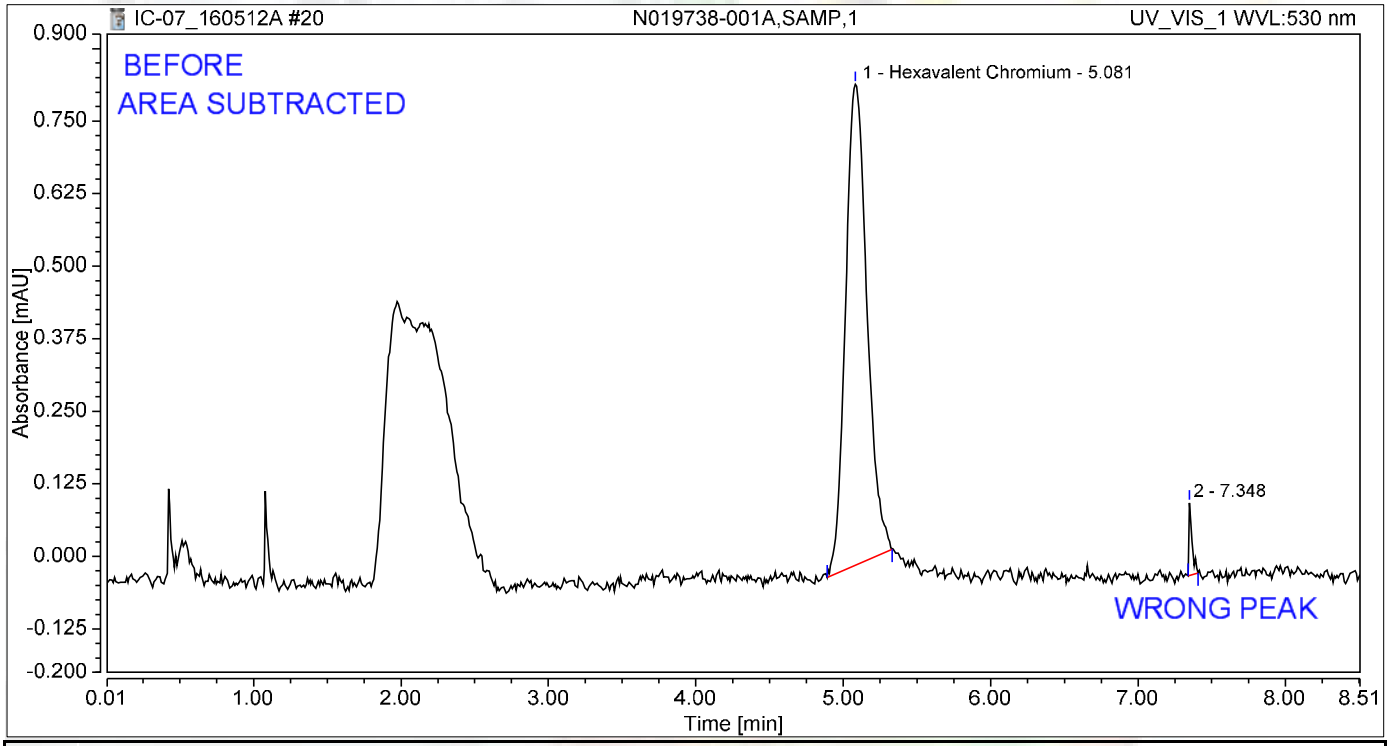
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.139	0.829	97.88	86.84	0.5920
2		7.348	0.003	0.126	2.12	13.16	n.a.
Total:			**0.142**	**0.955**	**100.00**	**100.00**	

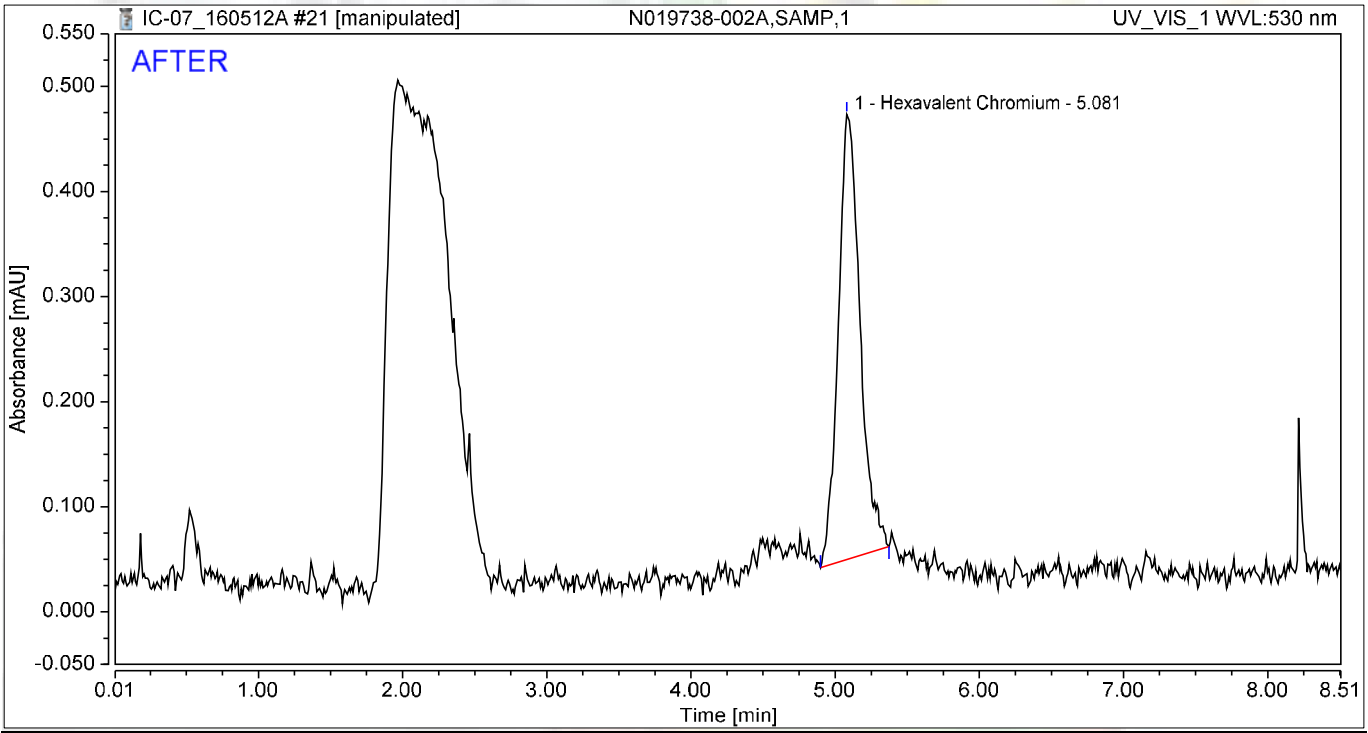
JAS 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.074	0.423	100.00	100.00	0.3145
Total:			**0.074**	**0.423**	**100.00**	**100.00**	

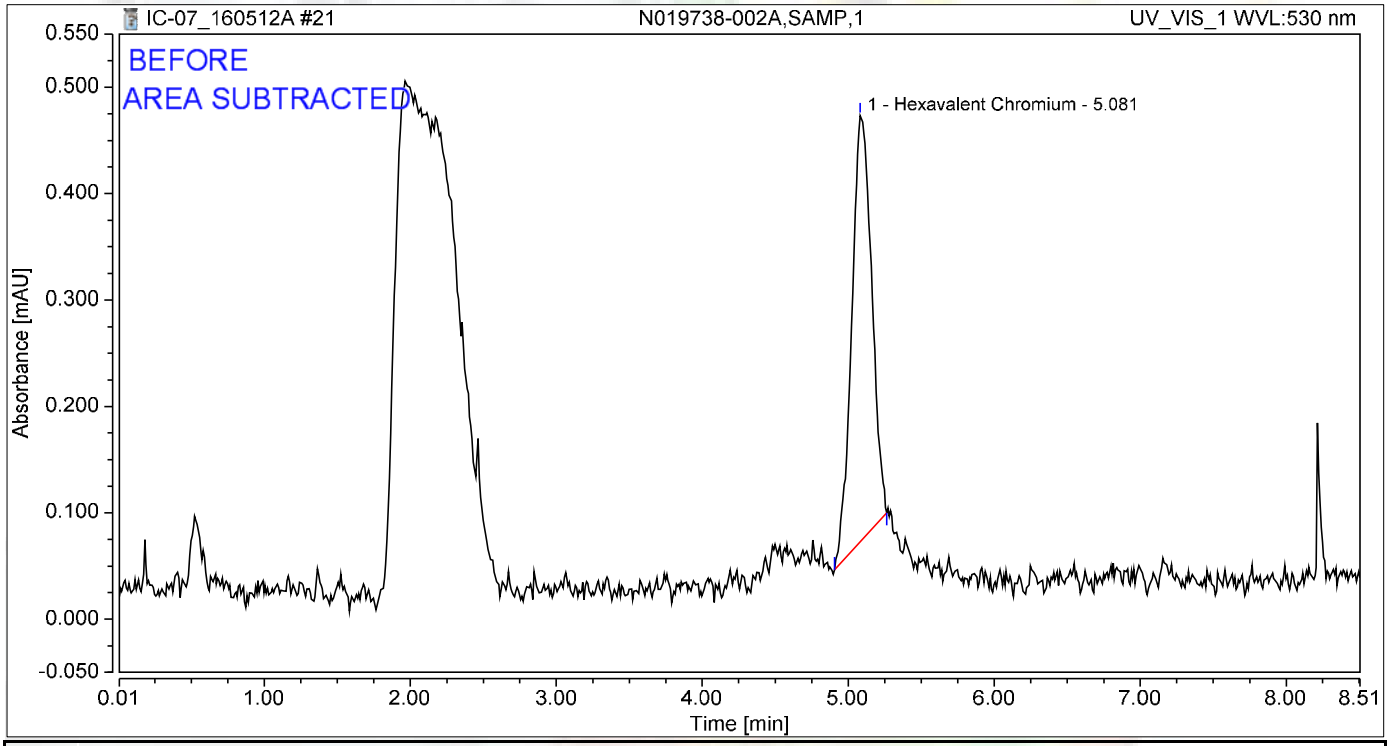
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.063	0.400	100.00	100.00	0.2680
Total:			**0.063**	**0.400**	**100.00**	**100.00**	

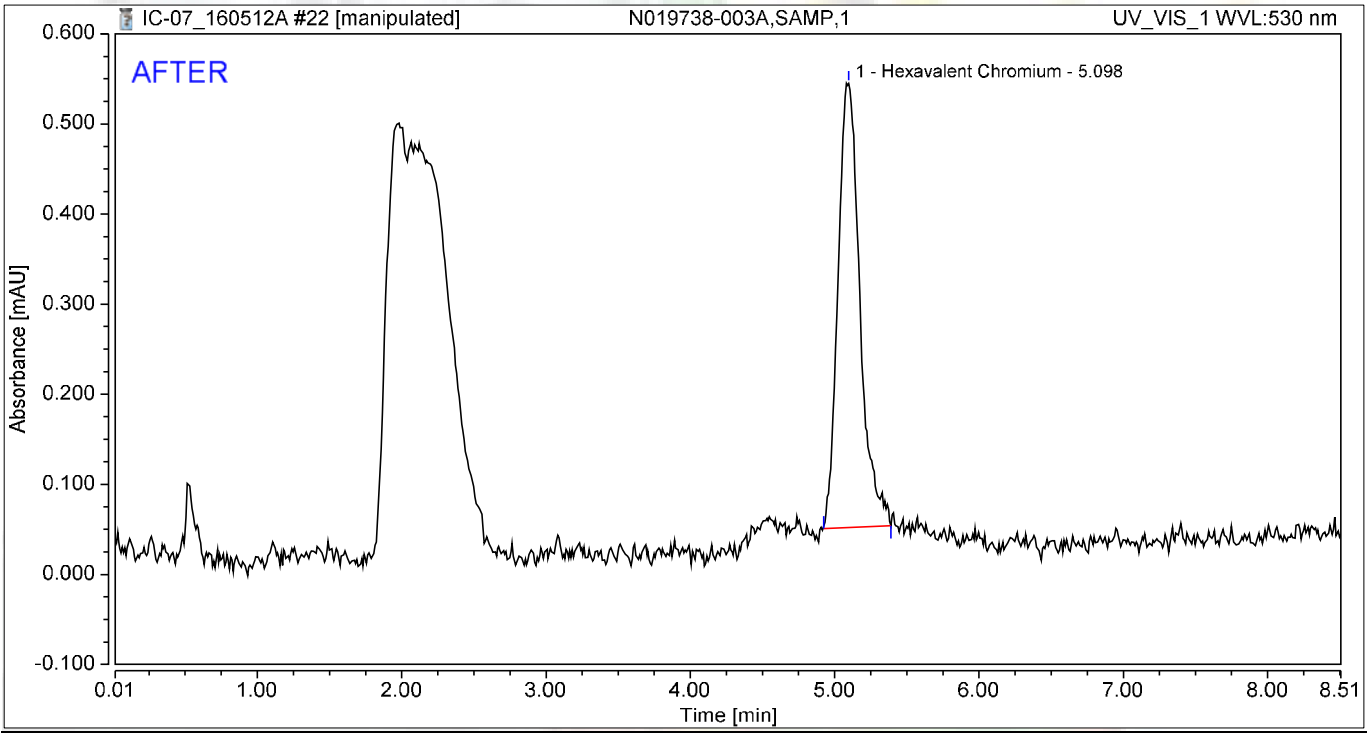
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.087	0.493	100.00	100.00	0.3694
Total:			**0.087**	**0.493**	**100.00**	**100.00**	

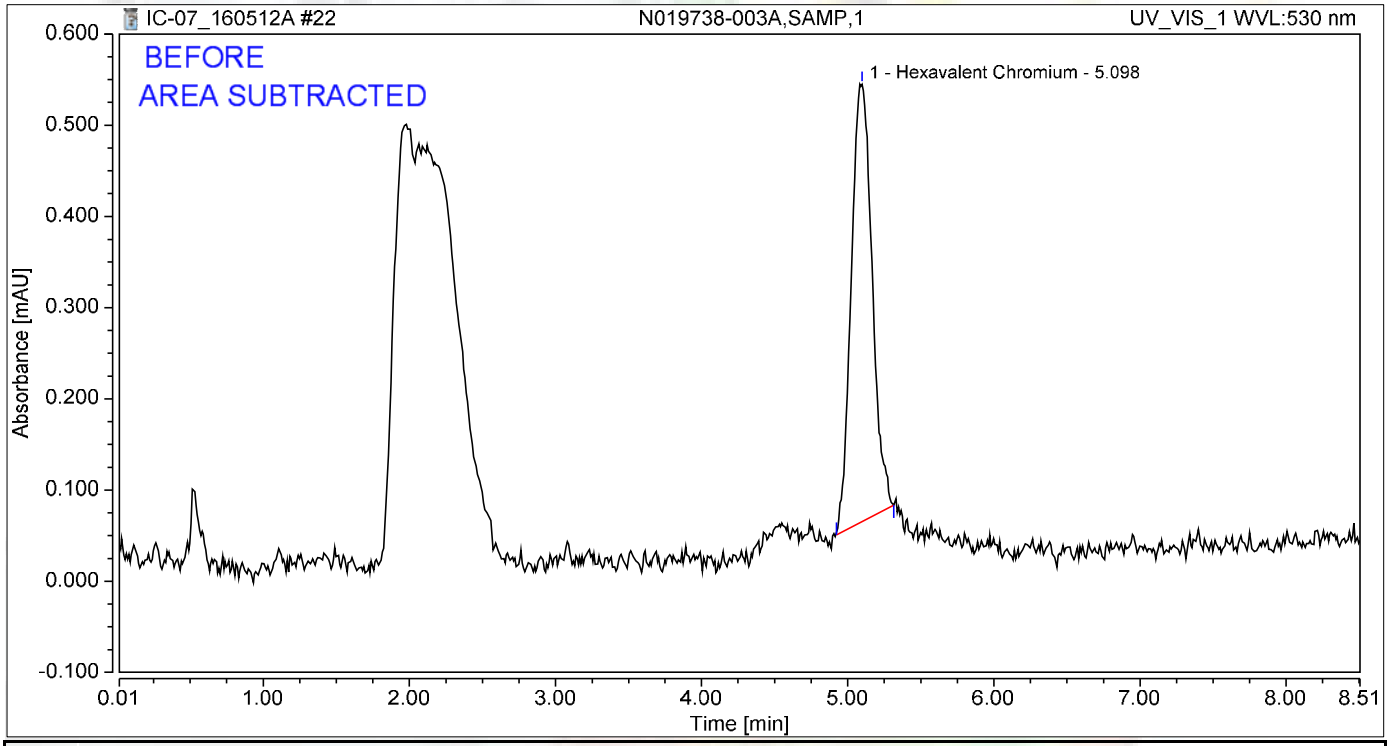
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.079	0.480	100.00	100.00	0.3375
Total:			**0.079**	**0.480**	**100.00**	**100.00**	

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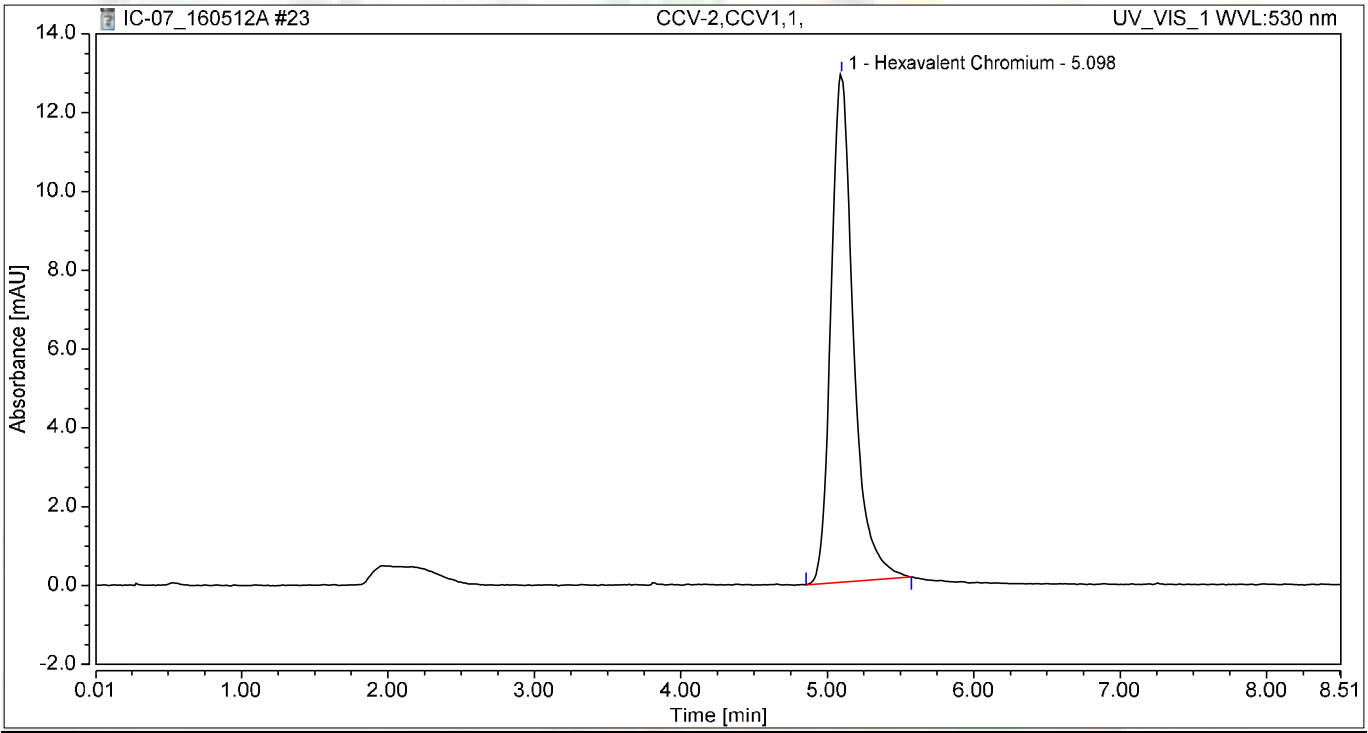
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

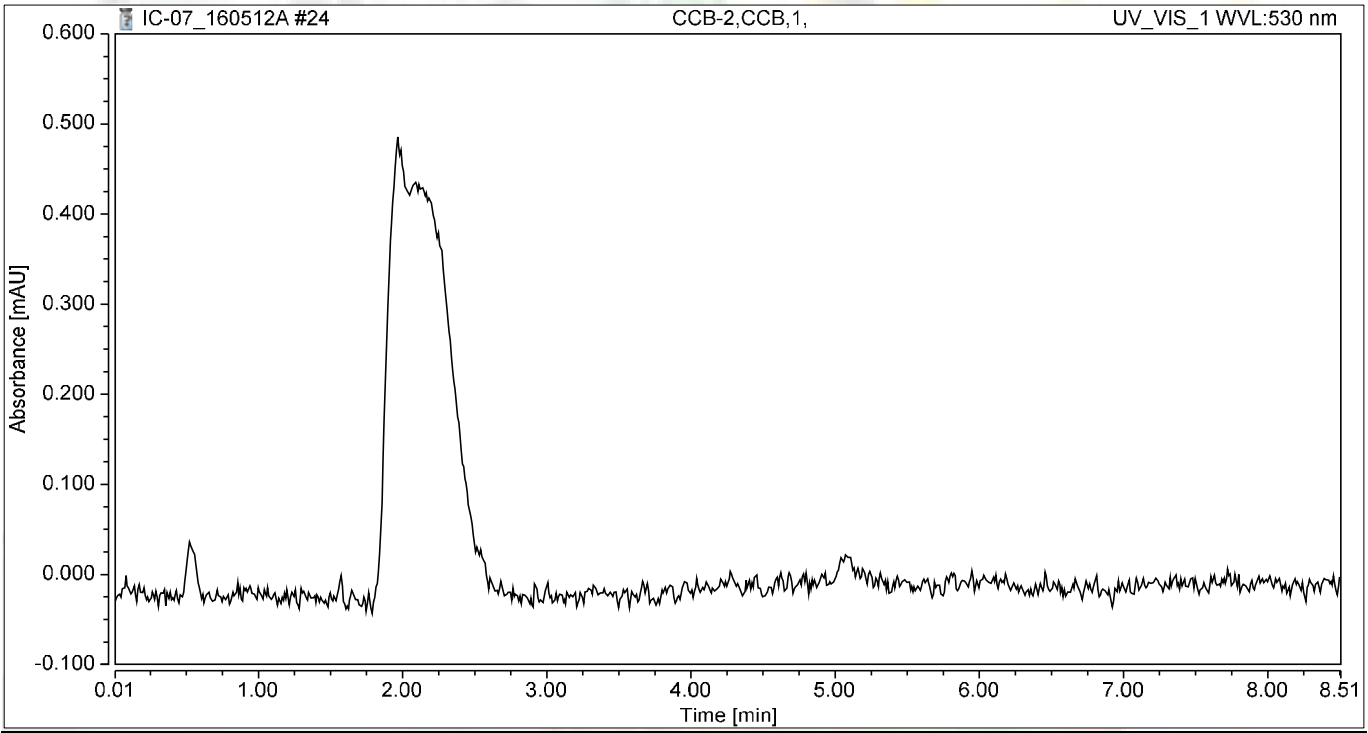
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	2.298	12.881	100.00	100.00	9.7622
Total:			**2.298**	**12.881**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

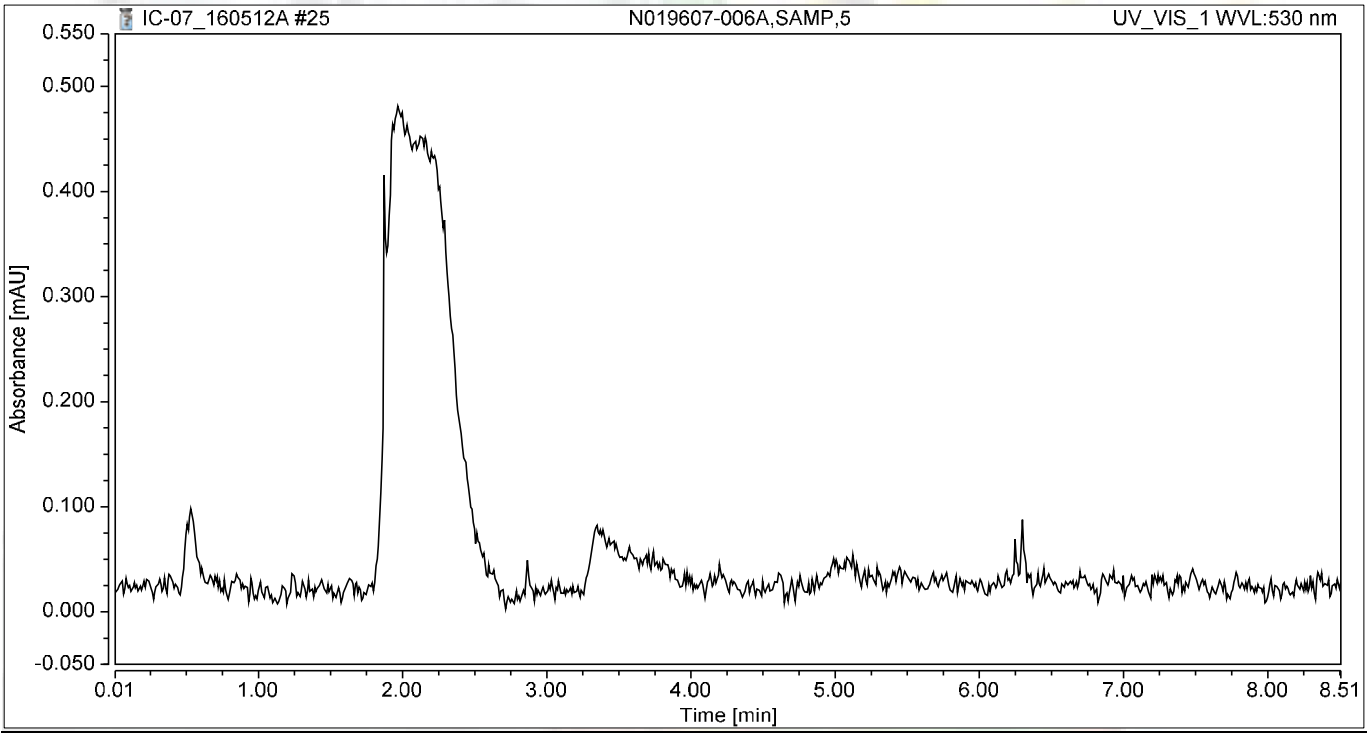
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

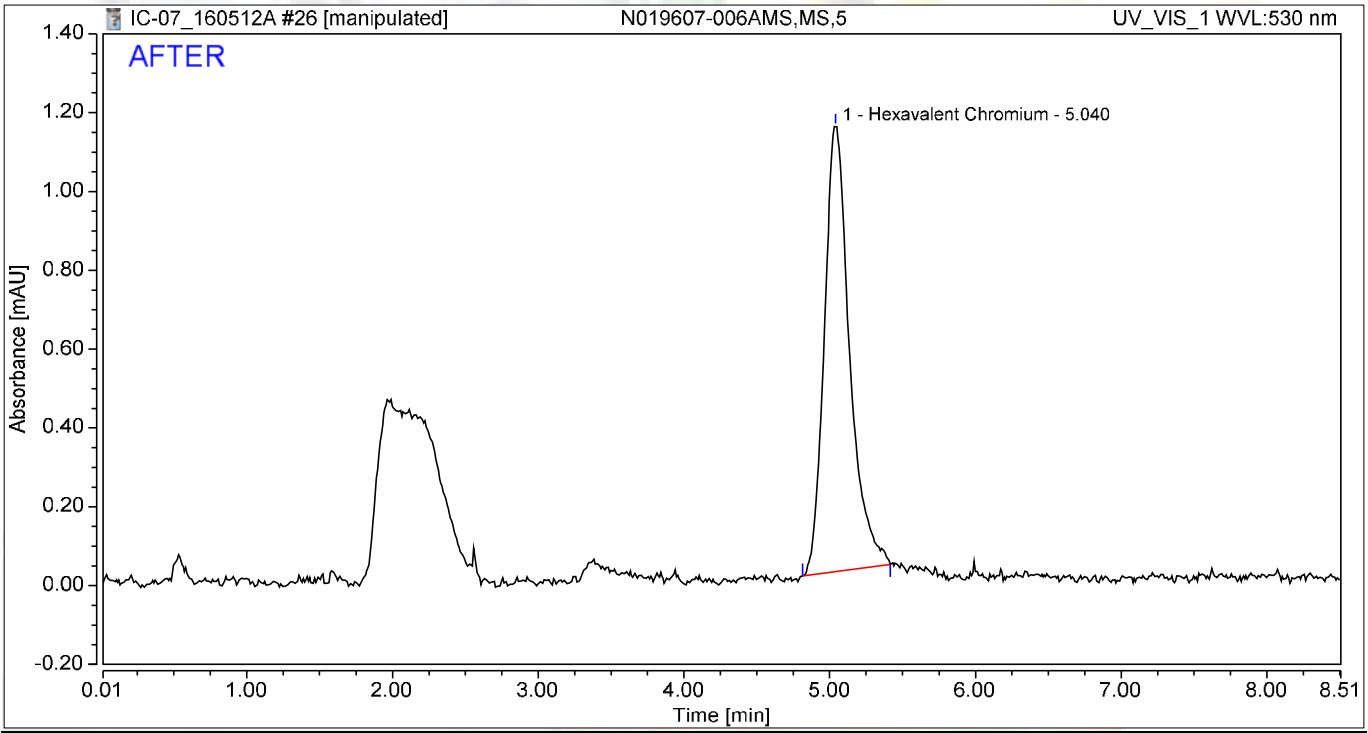
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	0.228	1.130	100.00	100.00	0.9665
Total:			**0.228**	**1.130**	**100.00**	**100.00**	

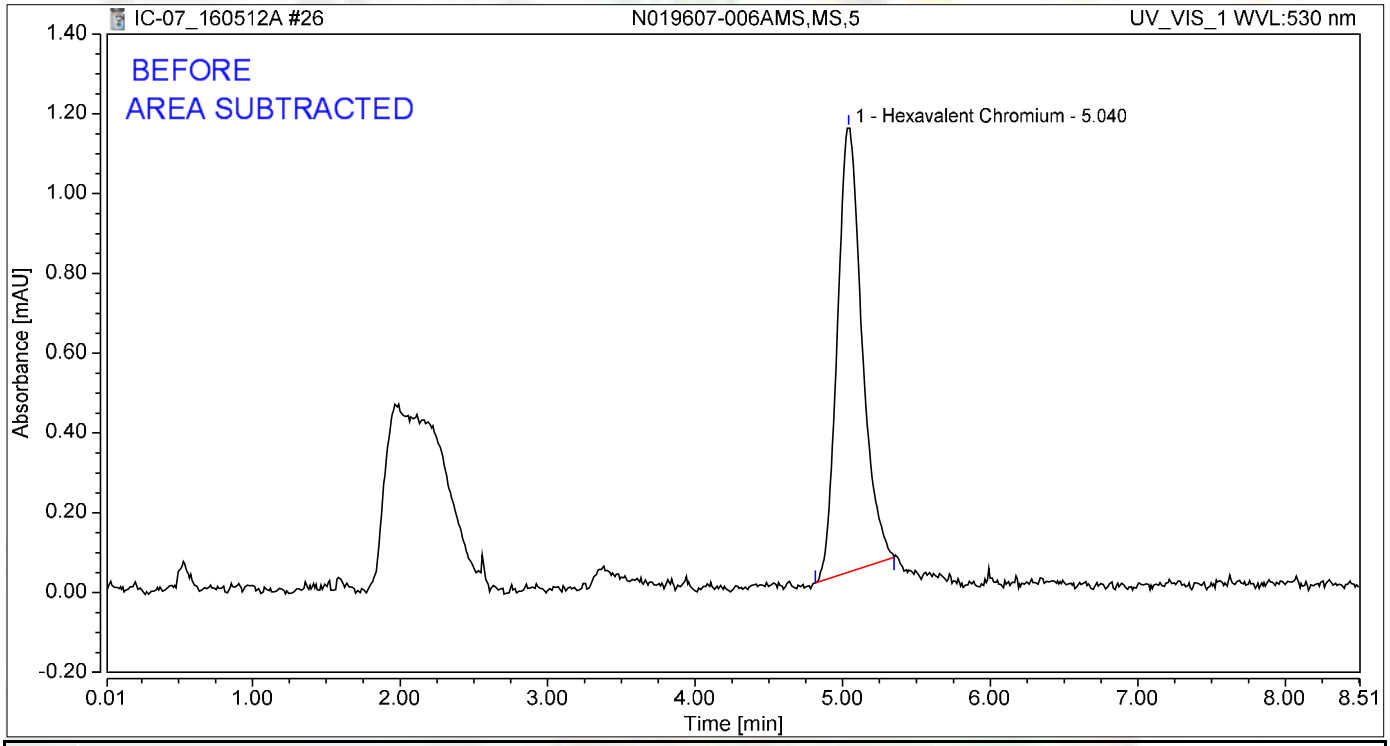
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	0.216	1.113	100.00	100.00	0.9154
Total:			**0.216**	**1.113**	**100.00**	**100.00**	

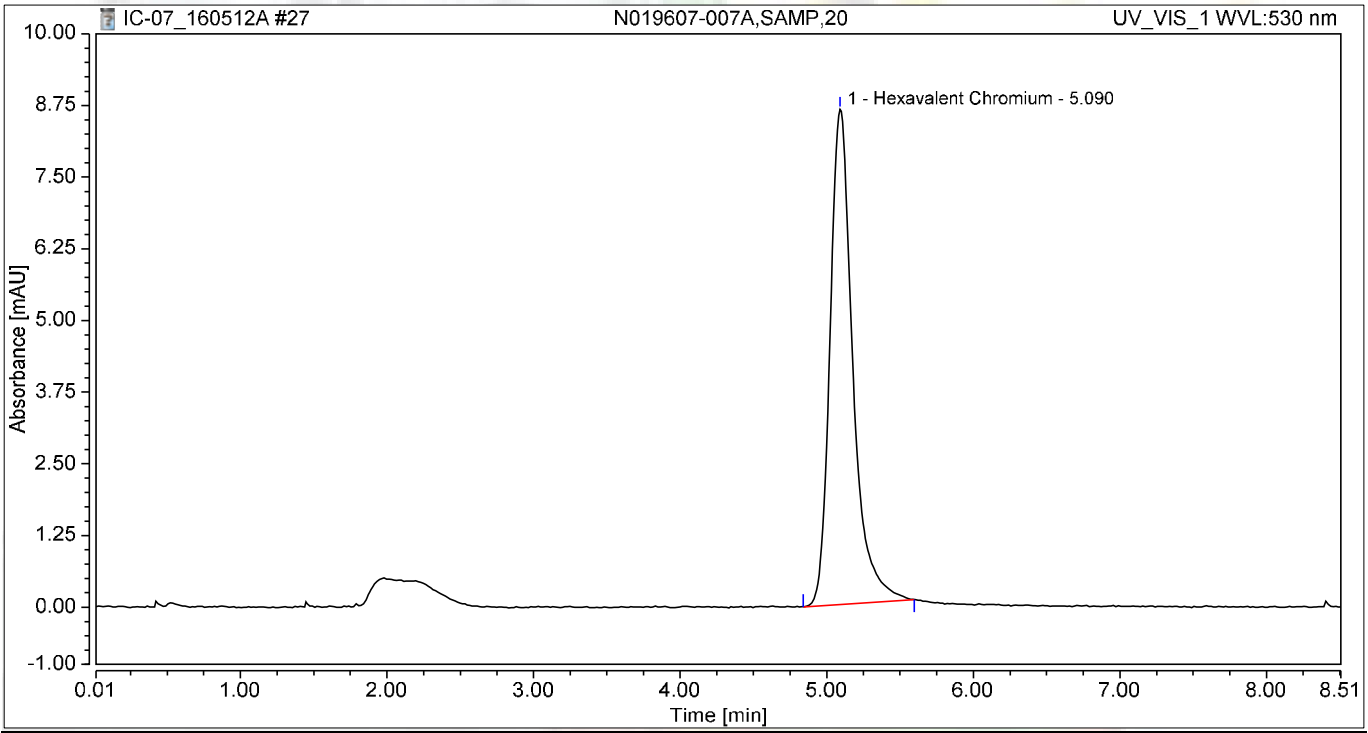
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-007A,SAMP,20**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

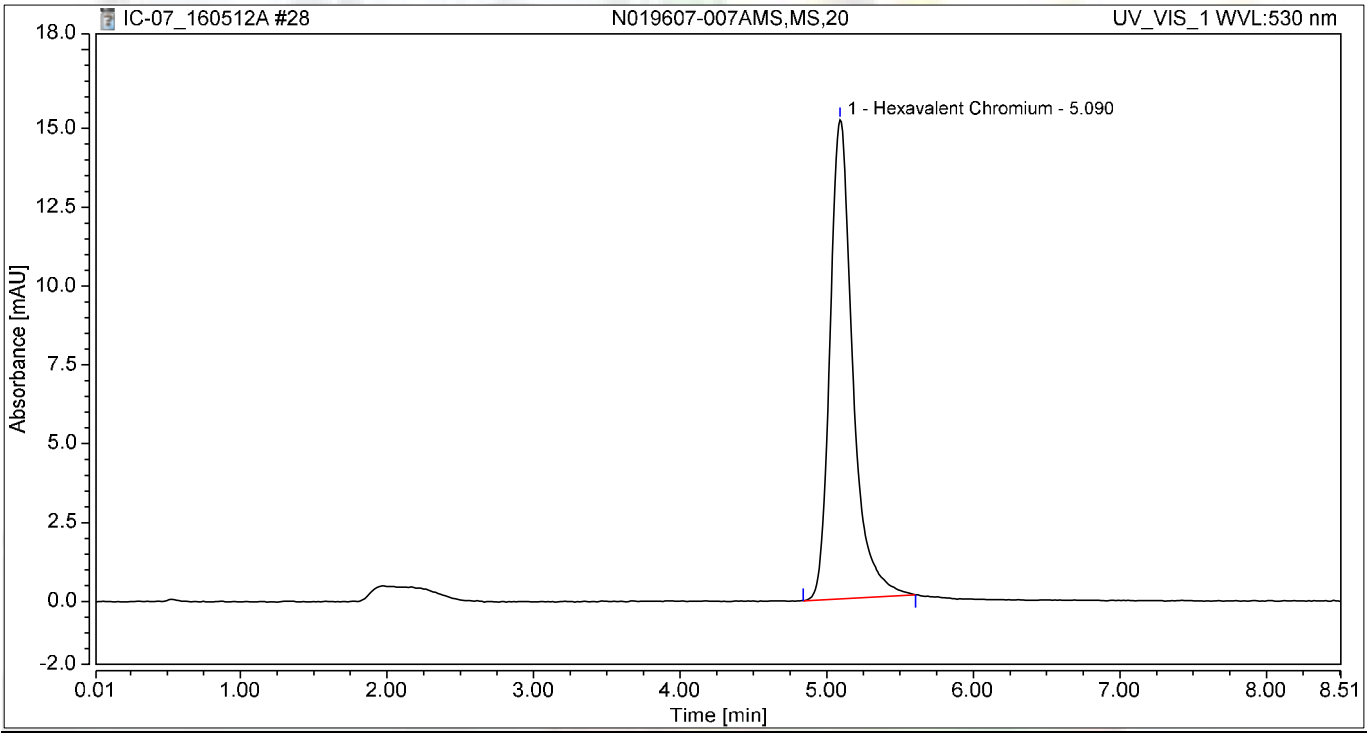
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.558	8.633	100.00	100.00	6.6156
Total:			**1.558**	**8.633**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-007AMS,MS,20**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

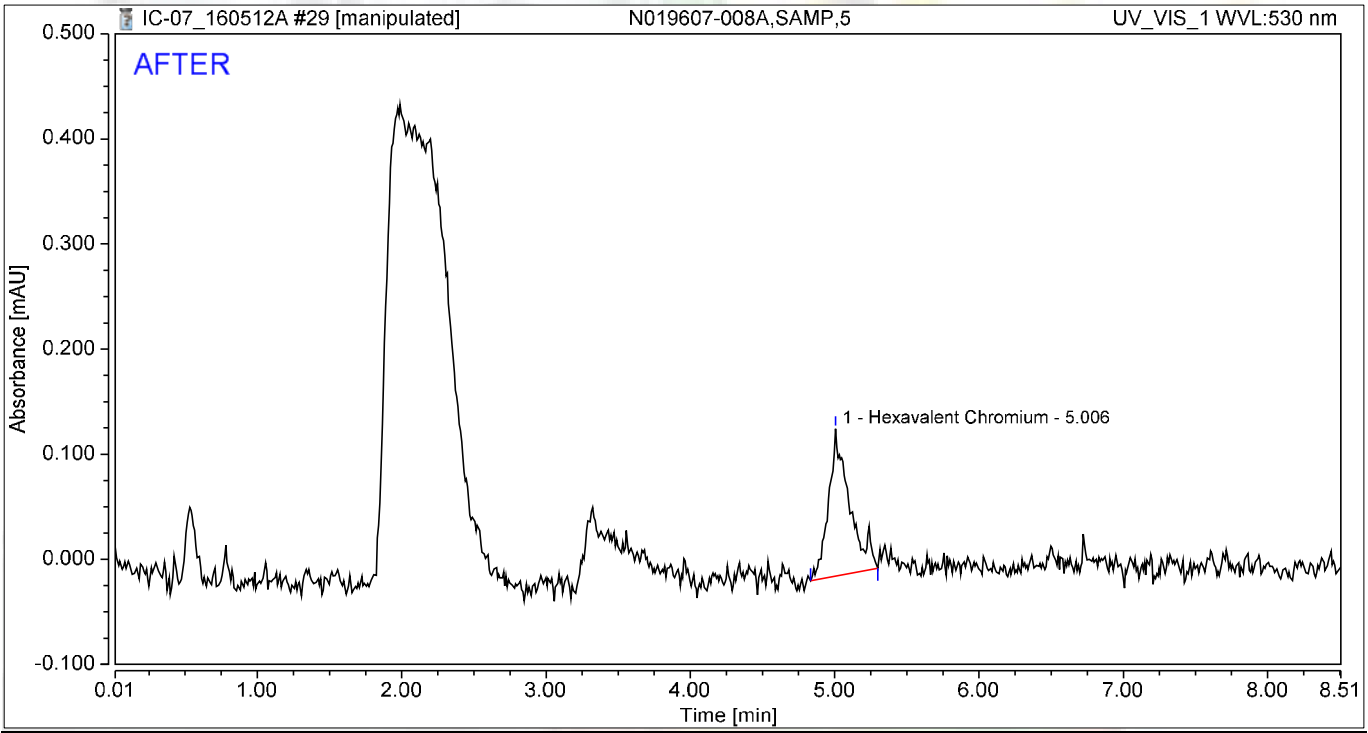
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.743	15.200	100.00	100.00	11.6522
Total:			**2.743**	**15.200**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.023	0.140	100.00	100.00	0.0994
Total:			**0.023**	**0.140**	**100.00**	**100.00**	

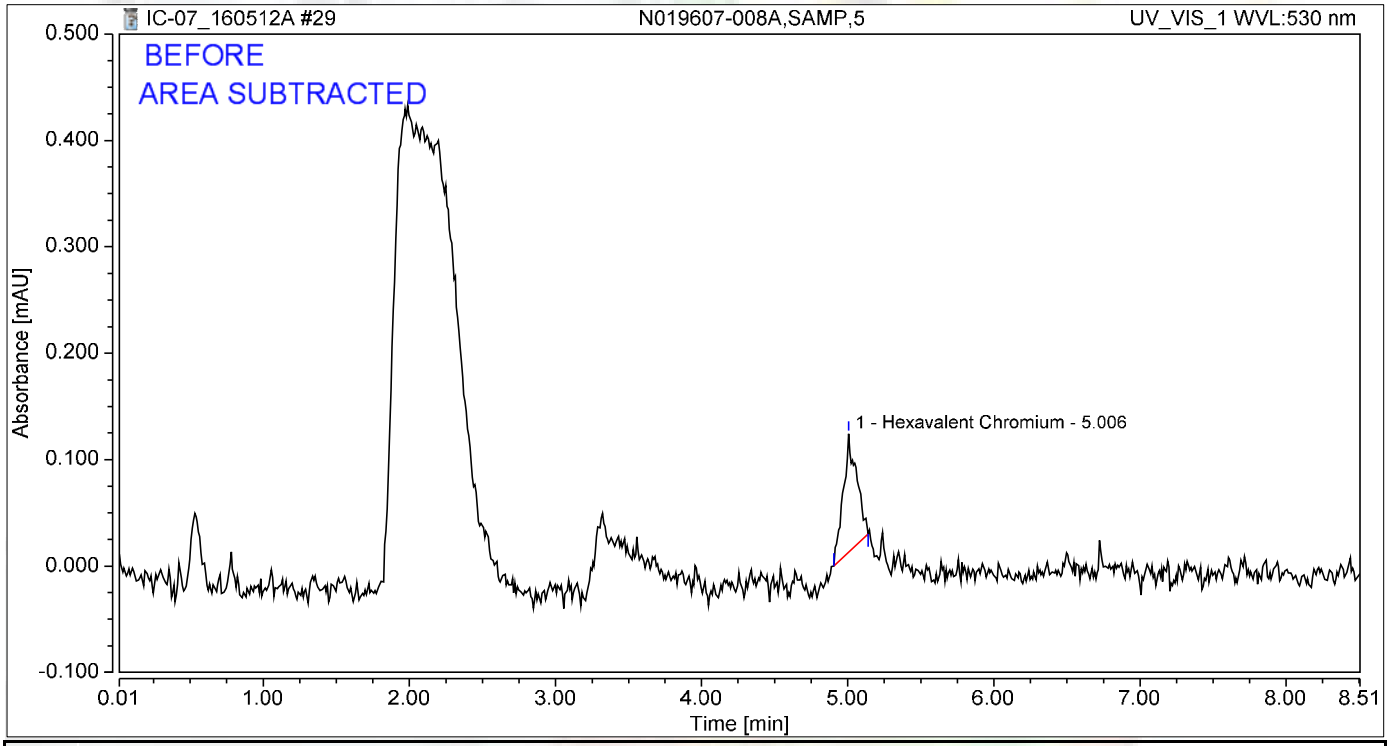
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.012	0.111	100.00	100.00	0.0502
Total:			**0.012**	**0.111**	**100.00**	**100.00**	

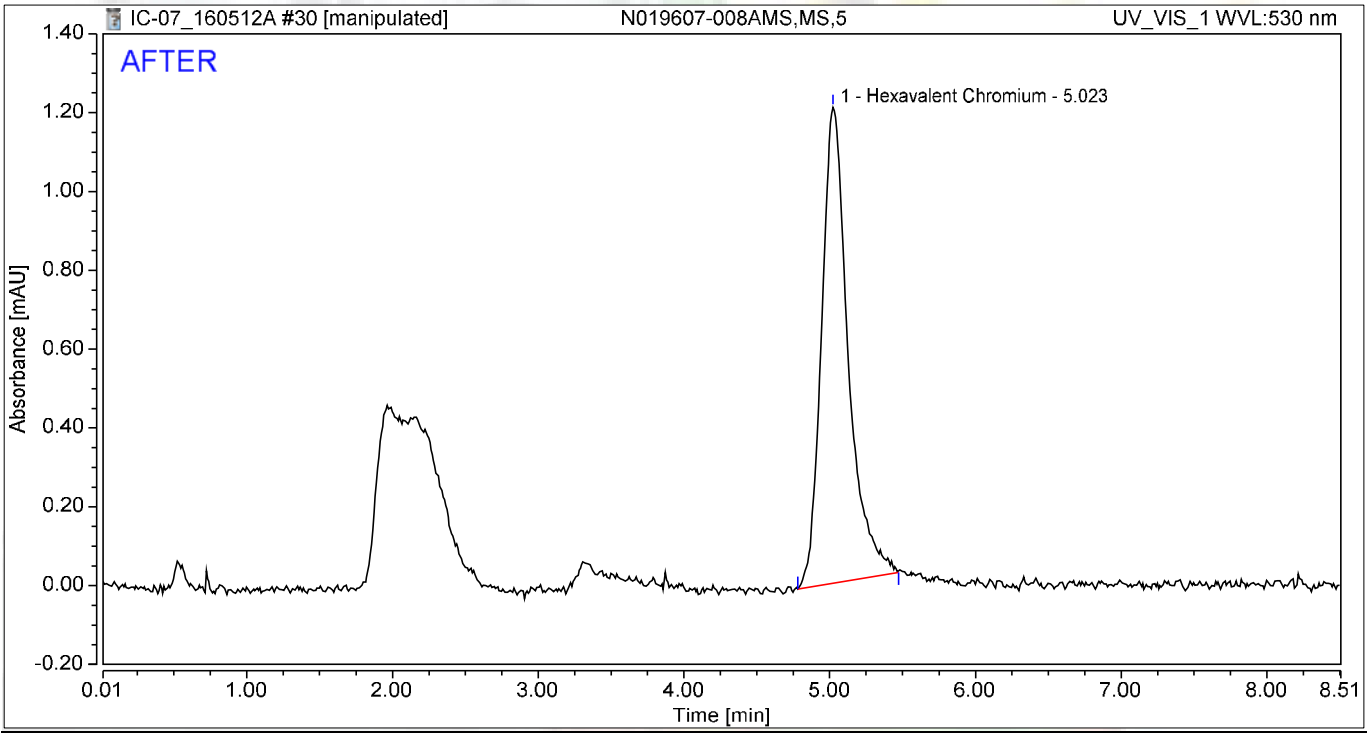
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.256	1.207	100.00	100.00	1.0883
Total:			**0.256**	**1.207**	**100.00**	**100.00**	

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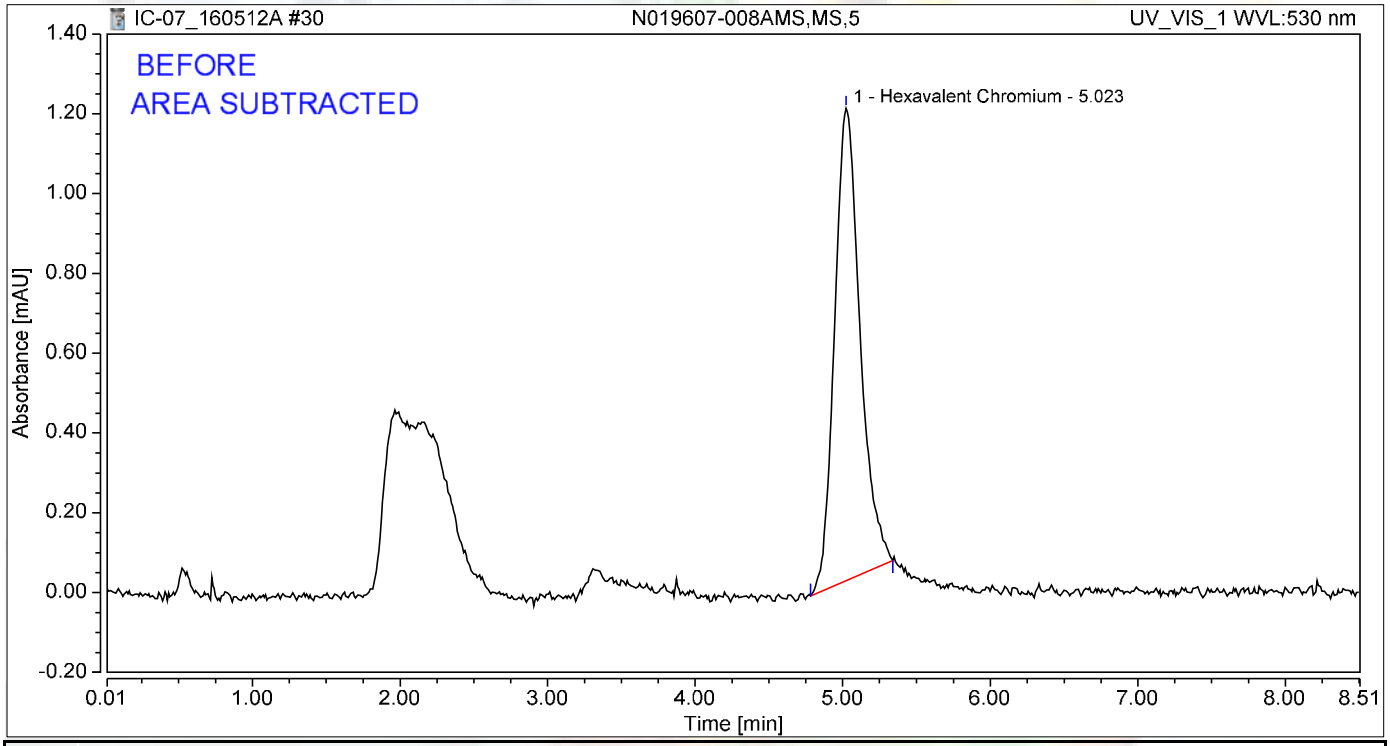
Chromatogram and Results

Injection Details

Injection Name:	**N019607-008AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.237	1.183	100.00	100.00	1.0051
Total:			**0.237**	**1.183**	**100.00**	**100.00**	

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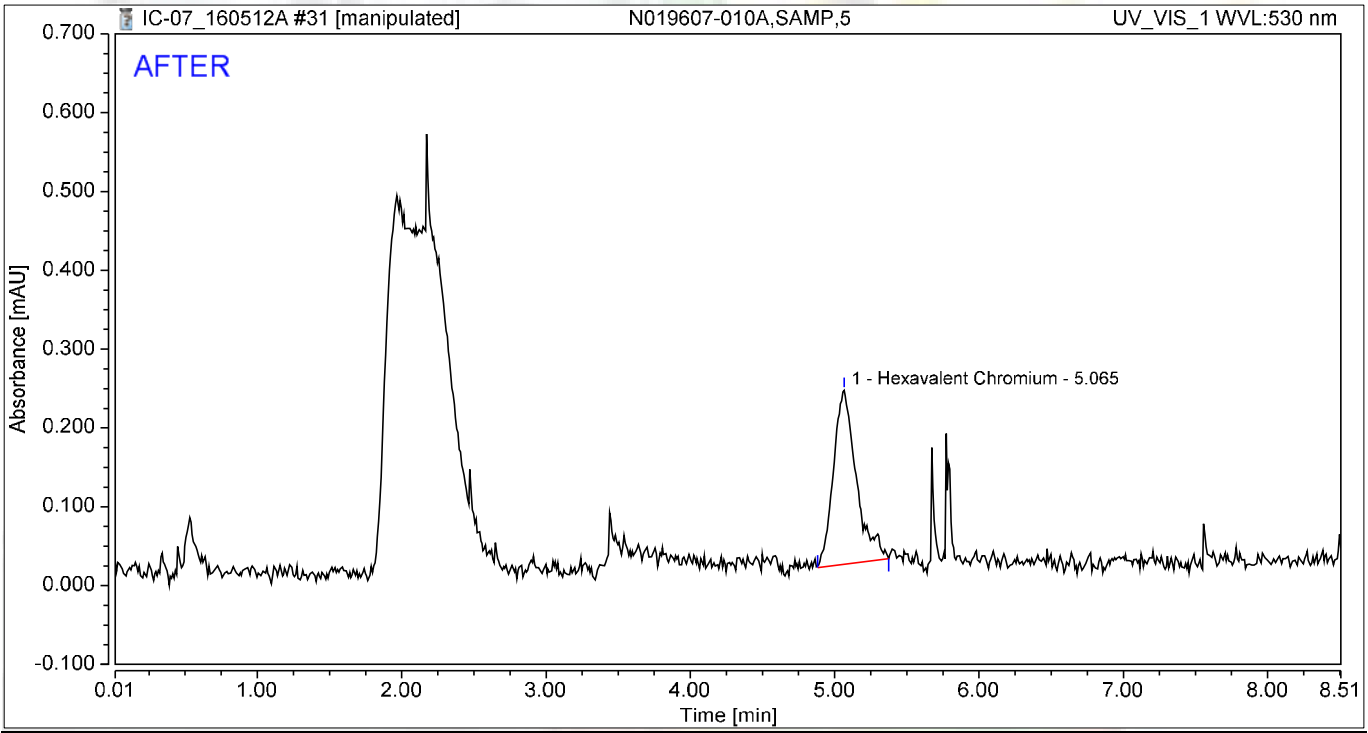
Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.041	0.221	100.00	100.00	0.1733
Total:			**0.041**	**0.221**	**100.00**	**100.00**	

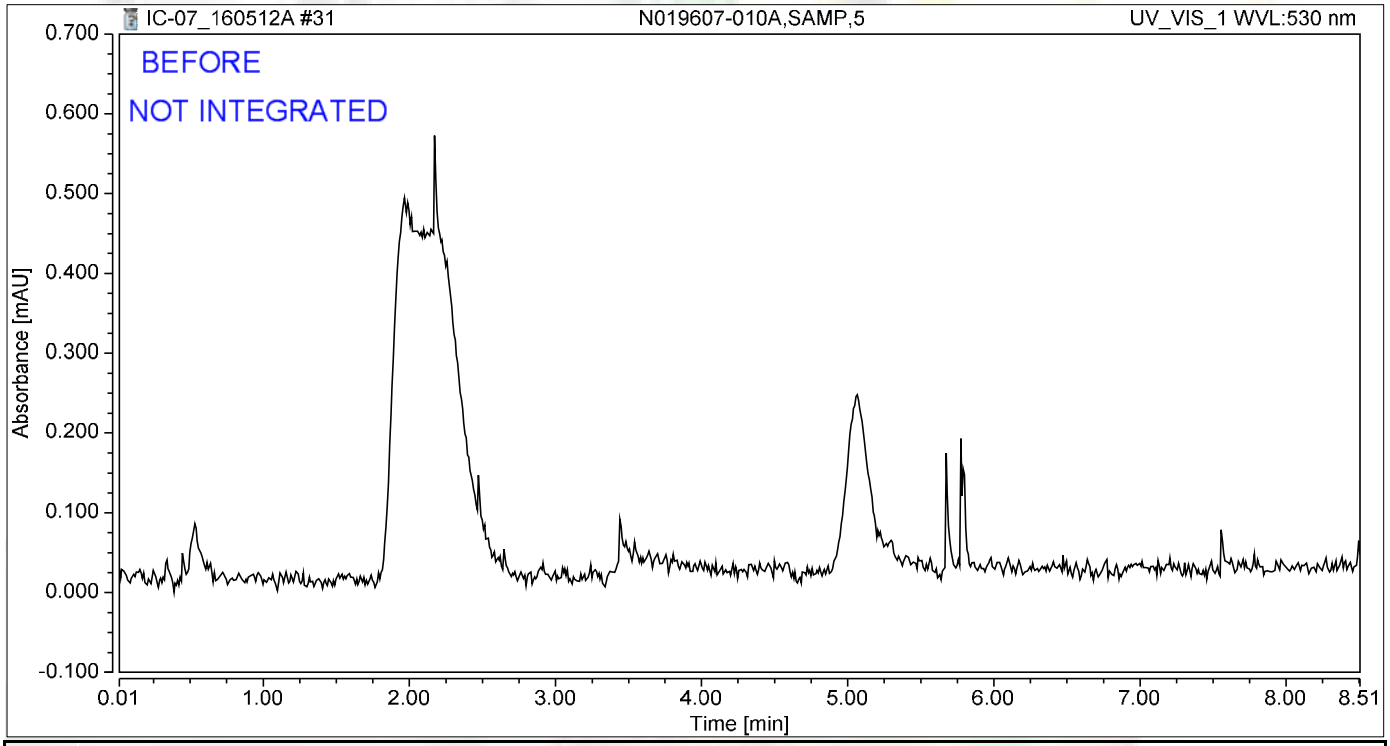
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

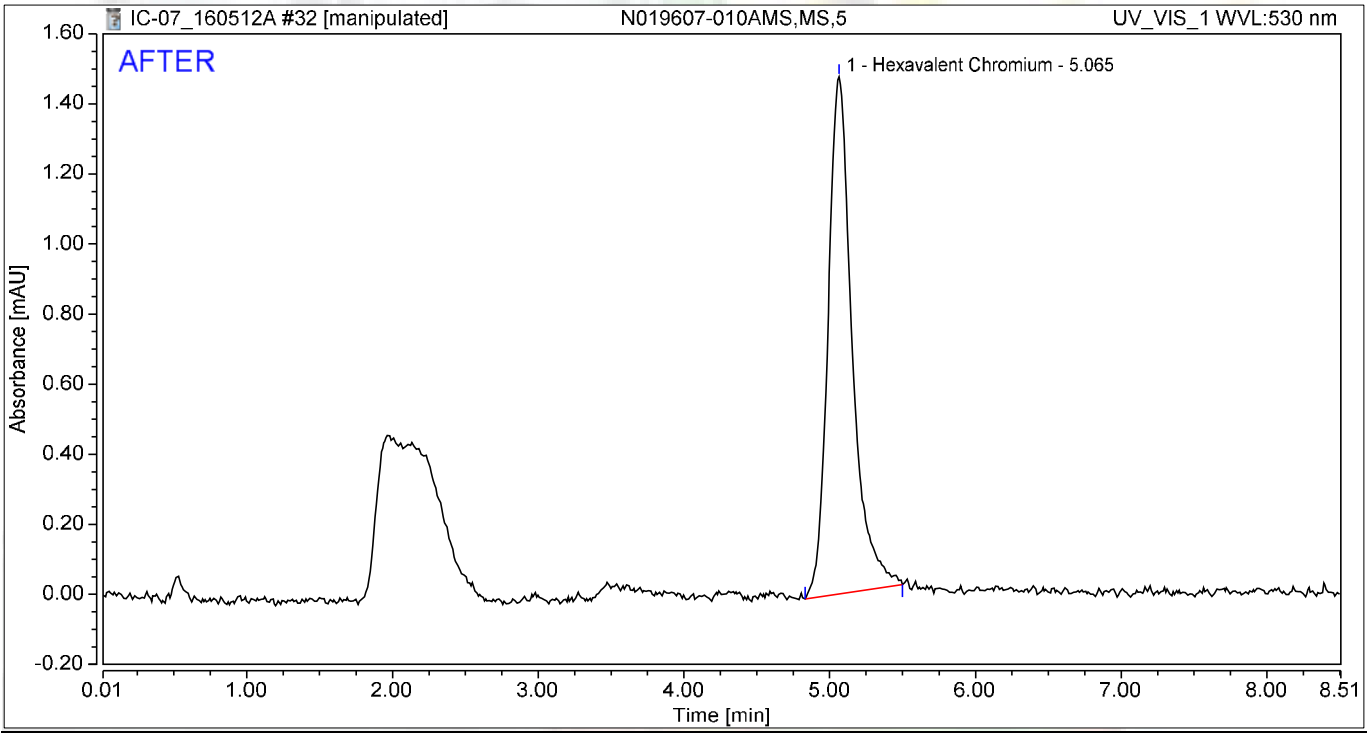
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.284	1.476	100.00	100.00	1.2050
Total:			**0.284**	**1.476**	**100.00**	**100.00**	

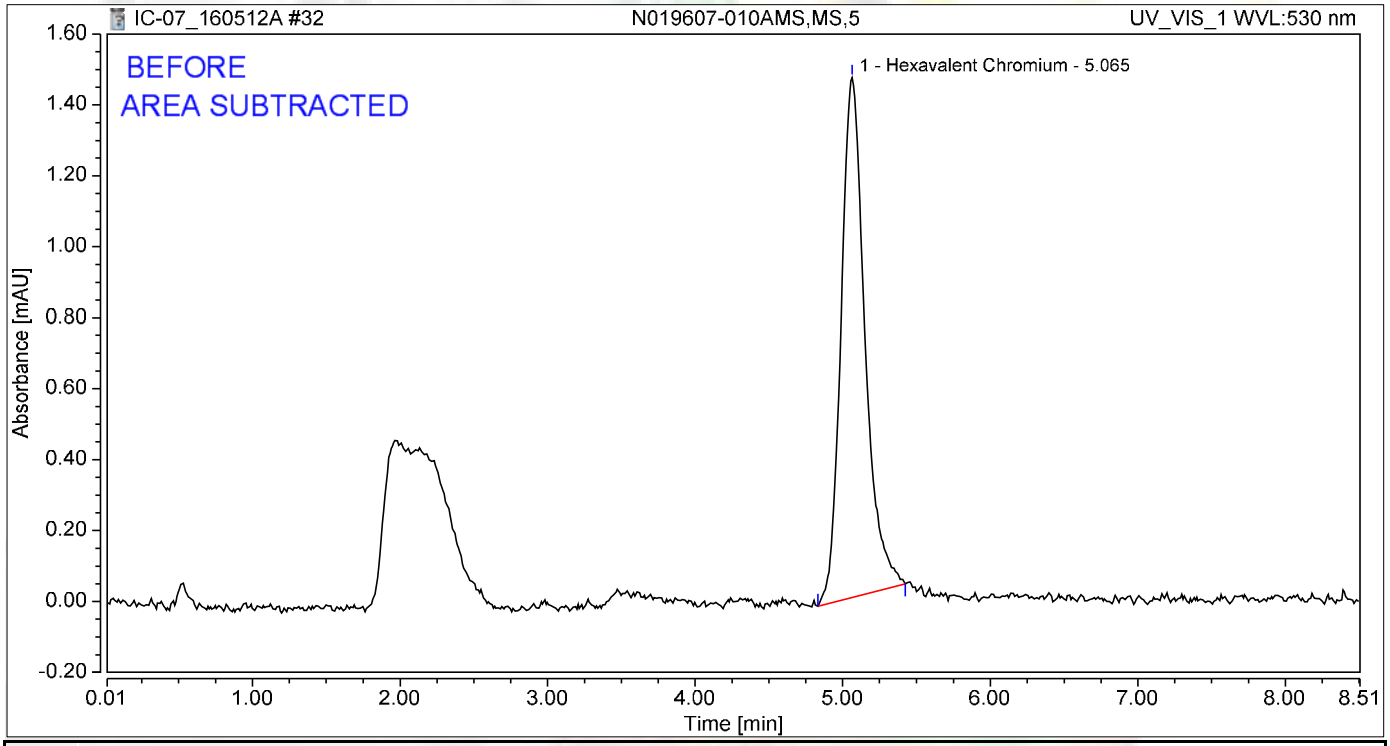
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.274	1.466	100.00	100.00	1.1650
Total:			**0.274**	**1.466**	**100.00**	**100.00**	

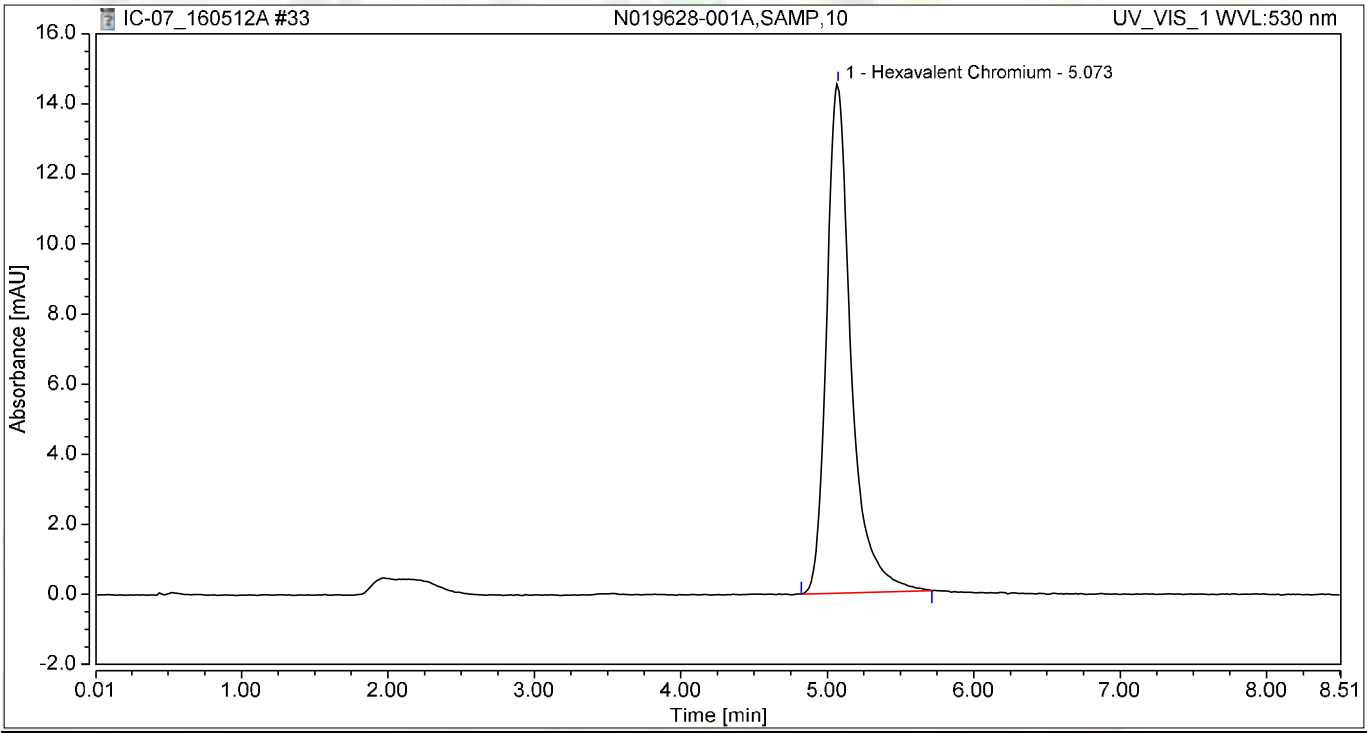
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-001A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

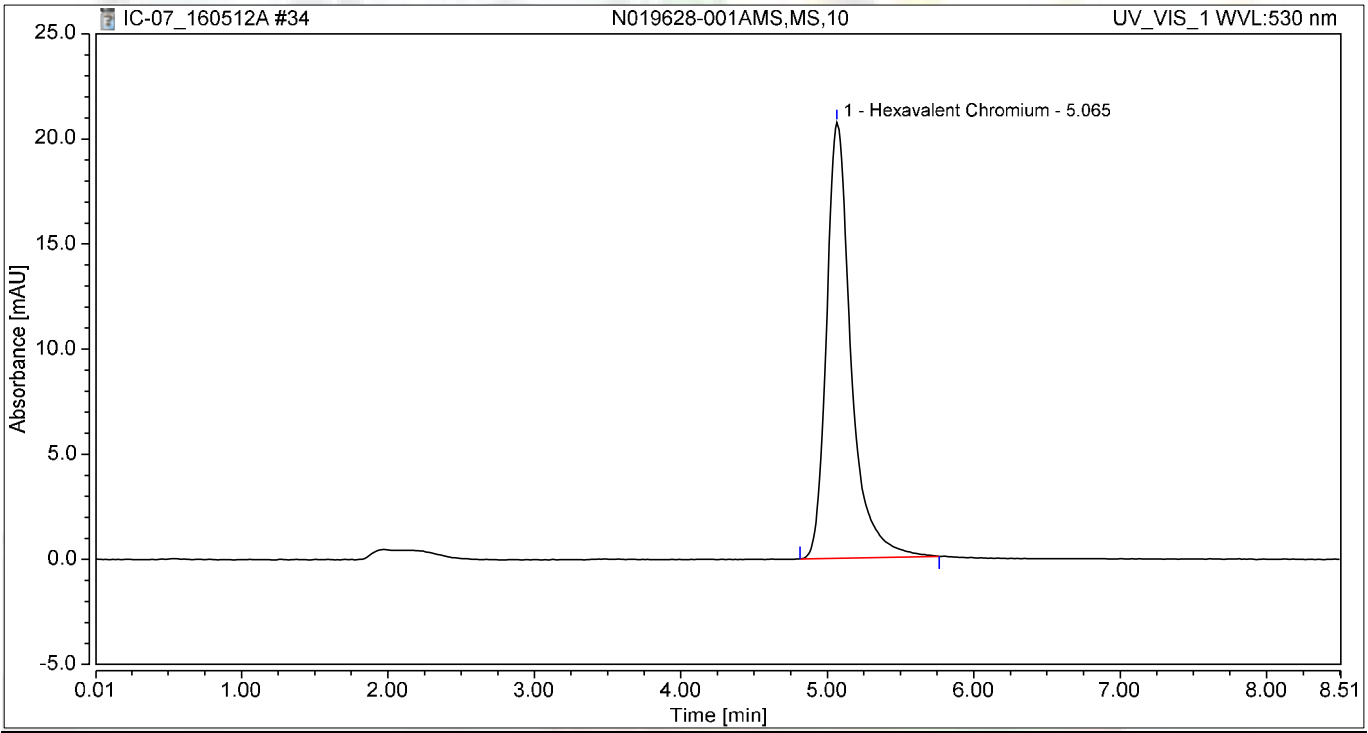
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	2.817	14.530	100.00	100.00	11.9650
Total:			**2.817**	**14.530**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-001AMS,MS,10**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

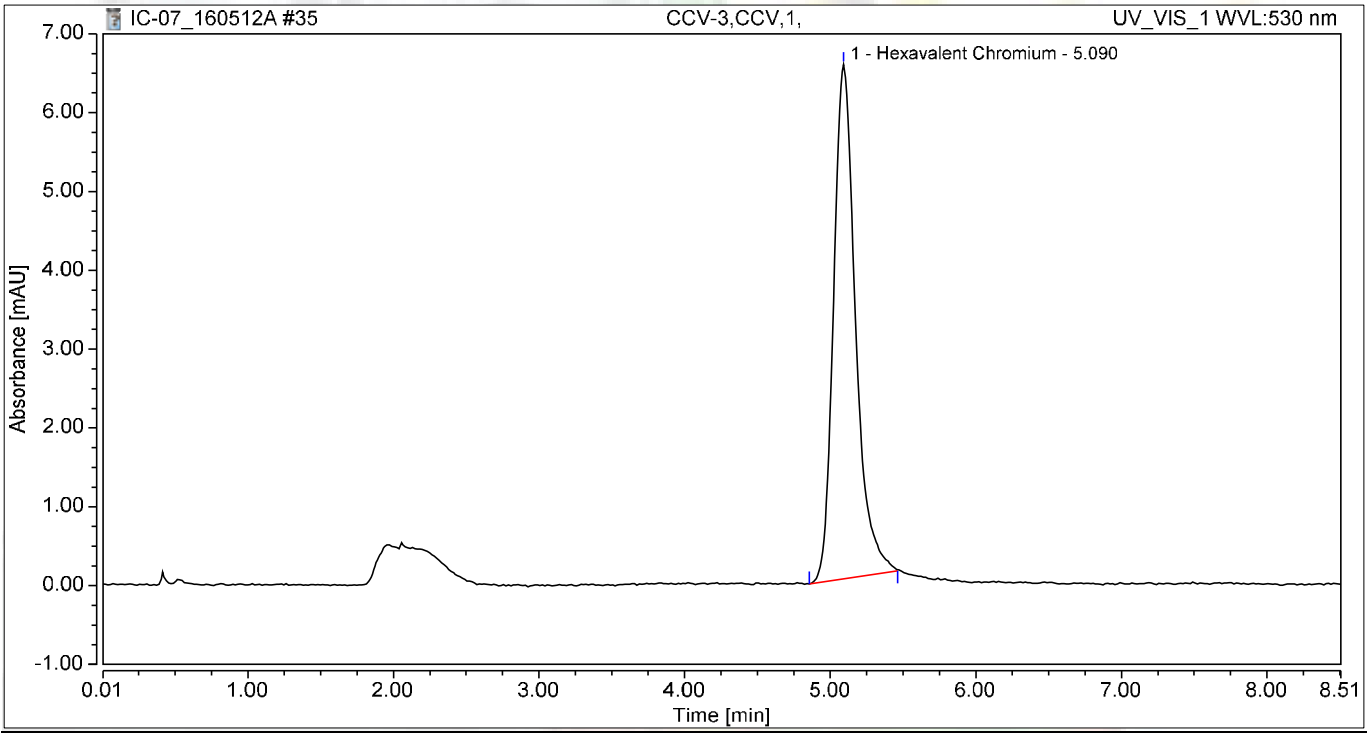
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	4.031	20.748	100.00	100.00	17.1216
Total:			**4.031**	**20.748**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

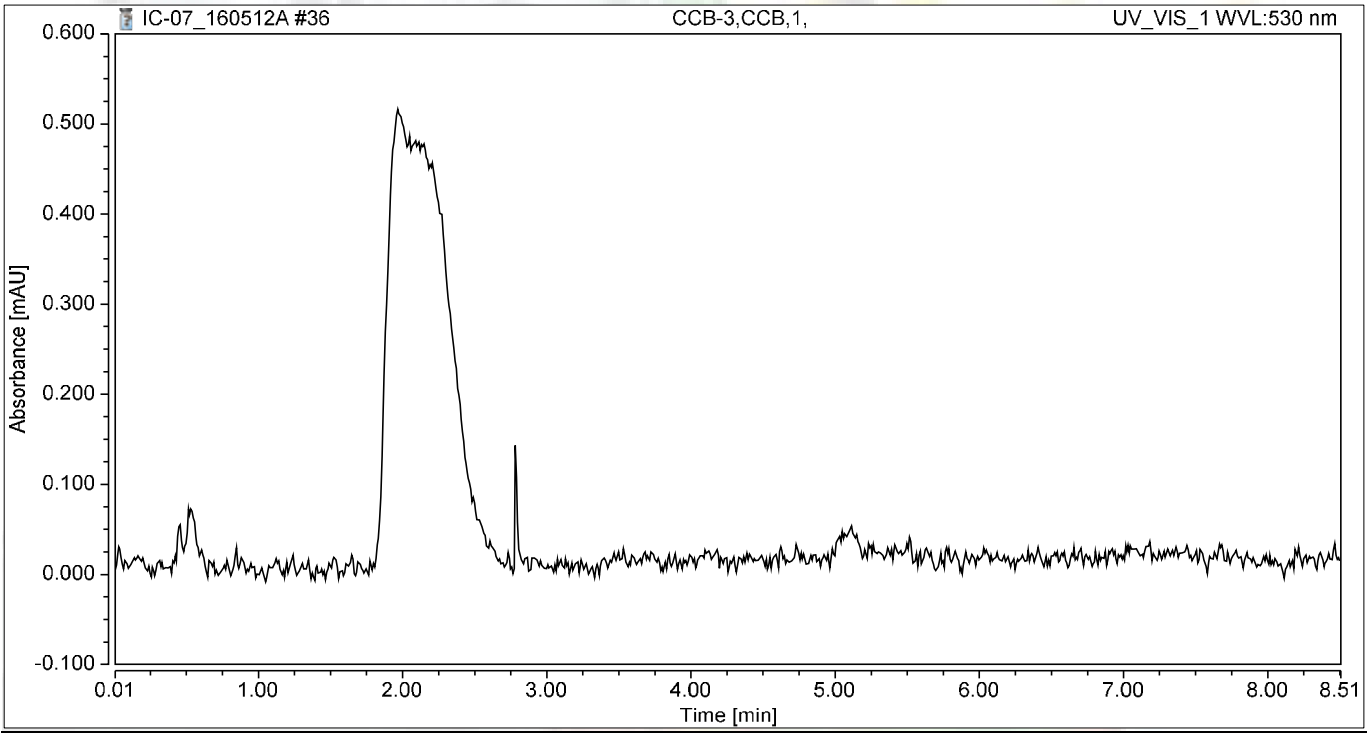
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.141	6.522	100.00	100.00	4.8457
Total:			**1.141**	**6.522**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

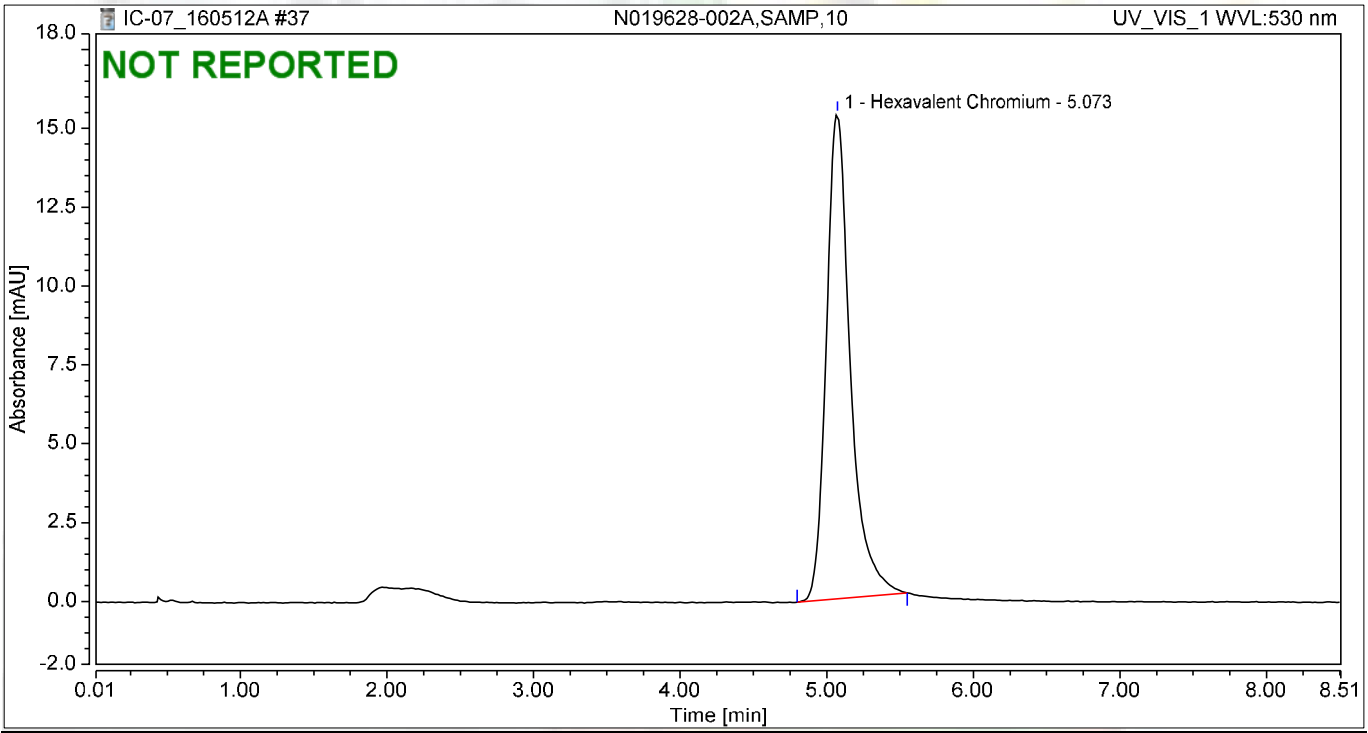
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-002A,SAMP,10**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

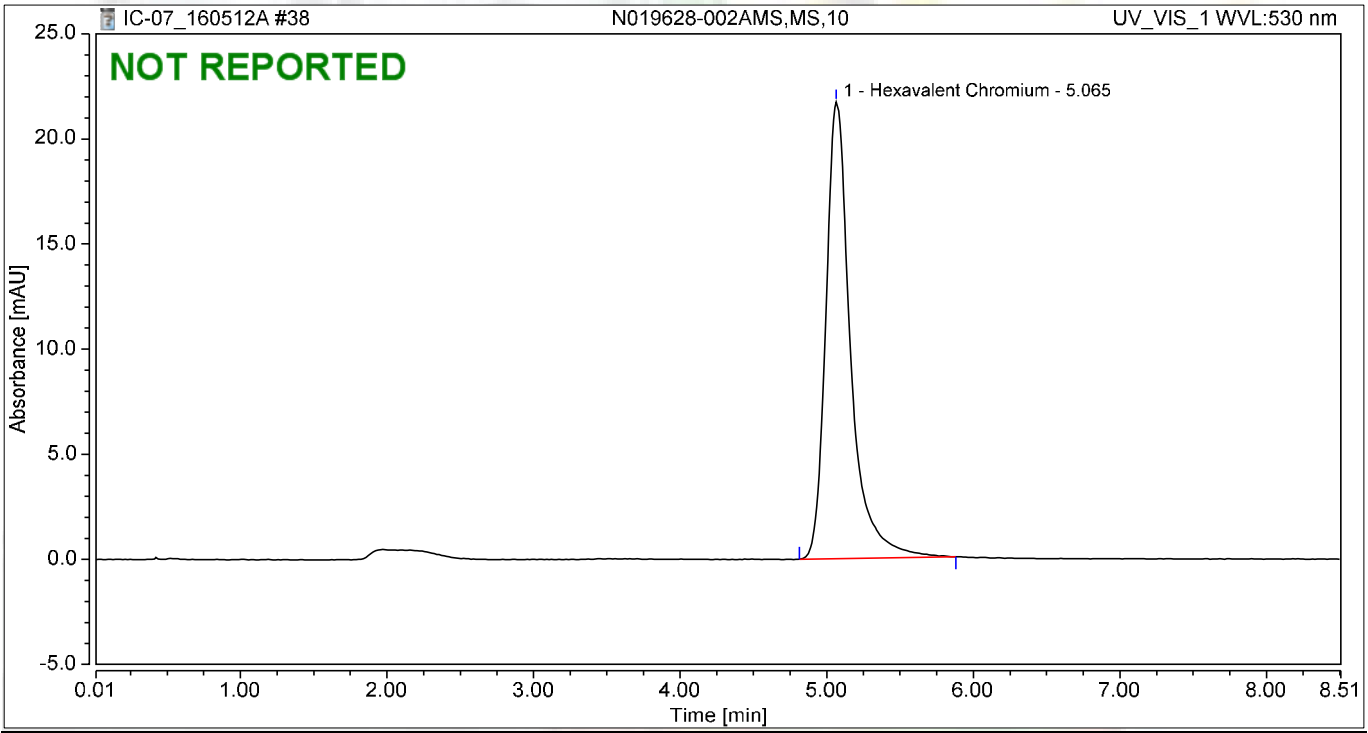
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	2.922	15.381	100.00	100.00	12.4106
Total:			**2.922**	**15.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-002AMS,MS,10**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

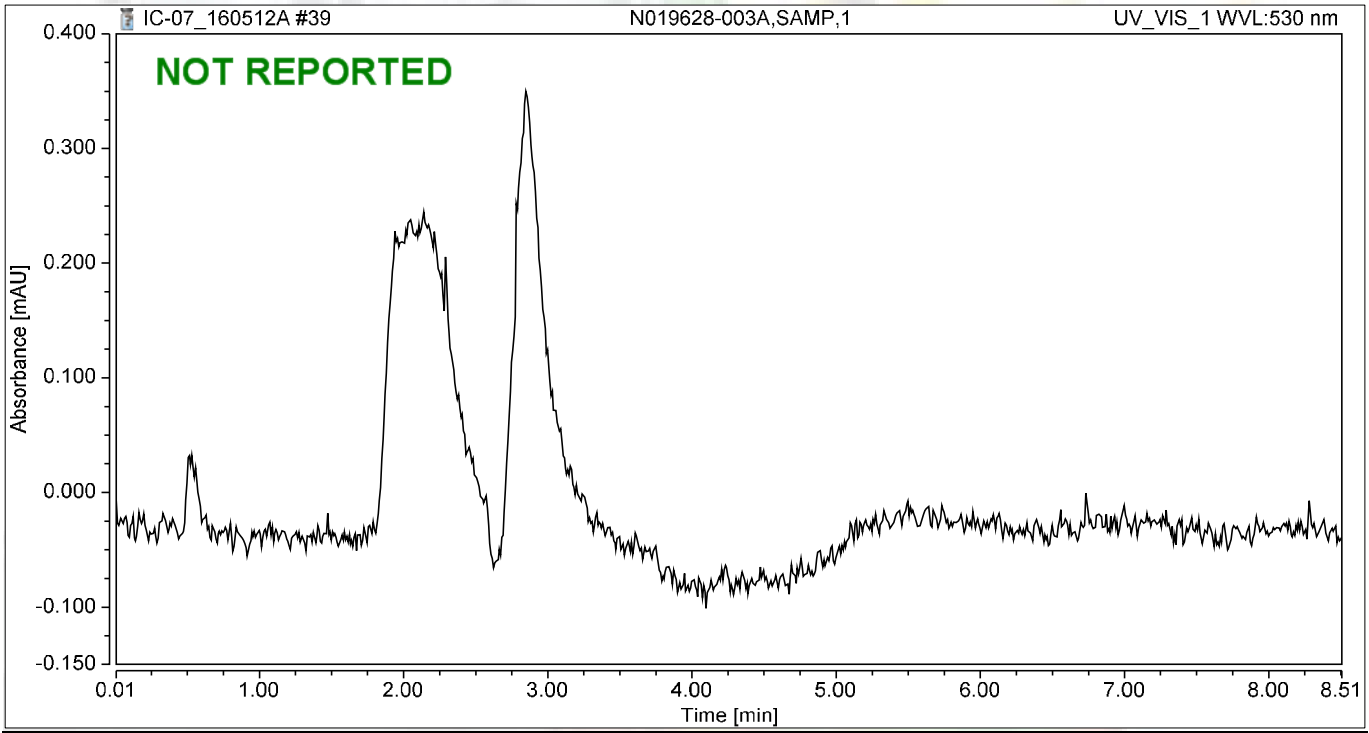
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	4.249	21.730	100.00	100.00	18.0467
Total:			**4.249**	**21.730**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

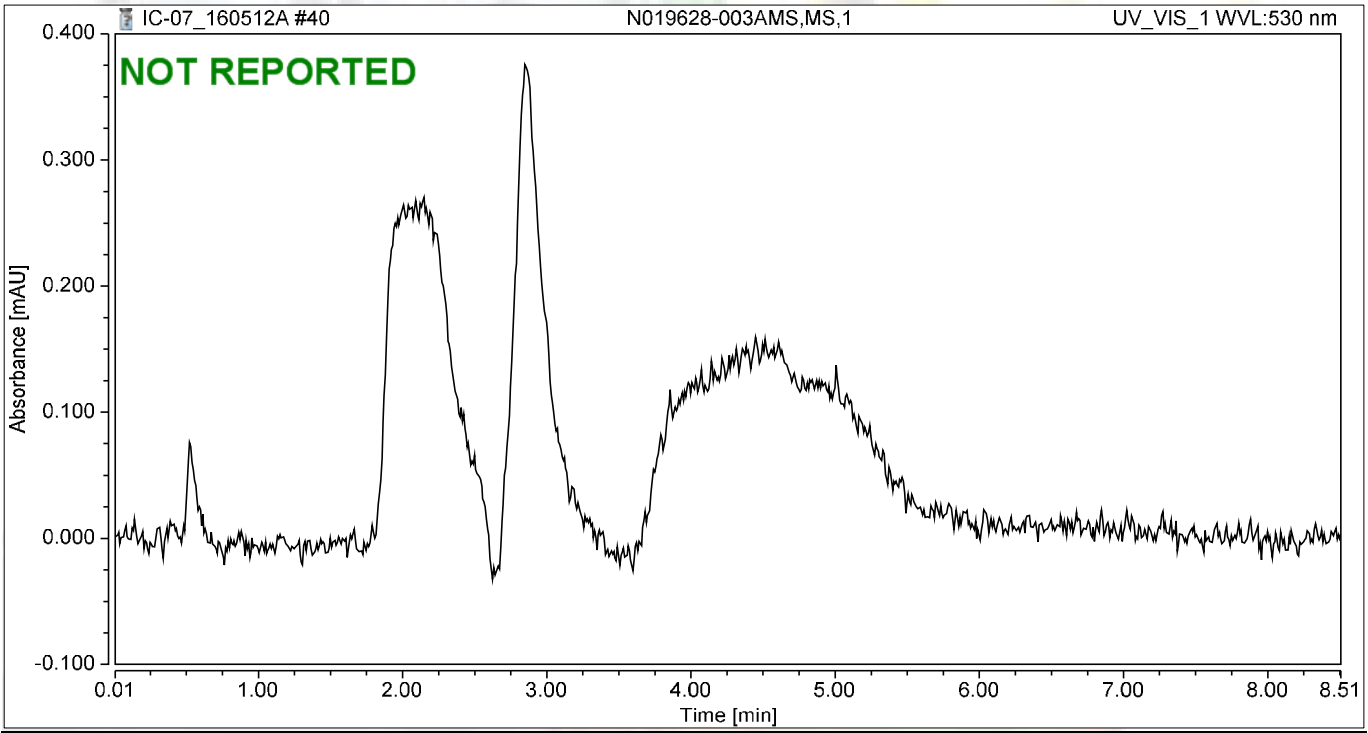
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

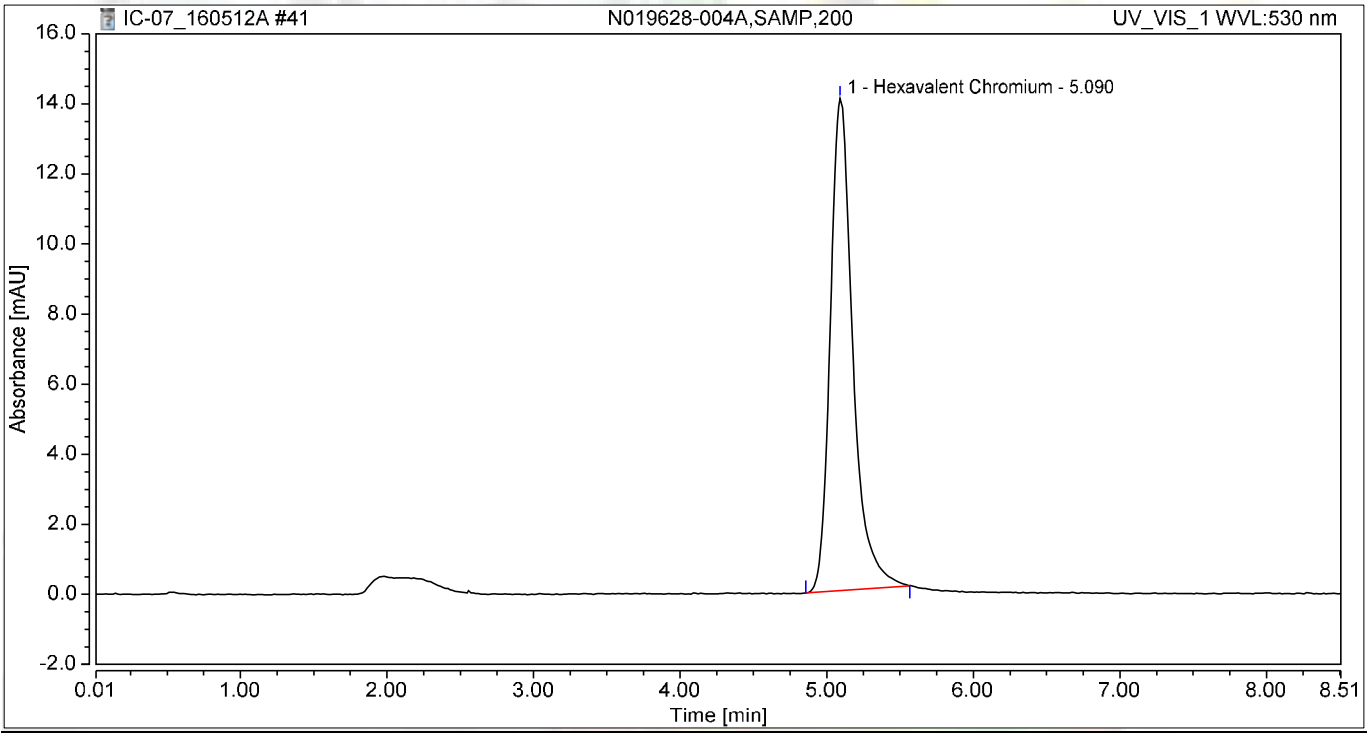
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-004A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

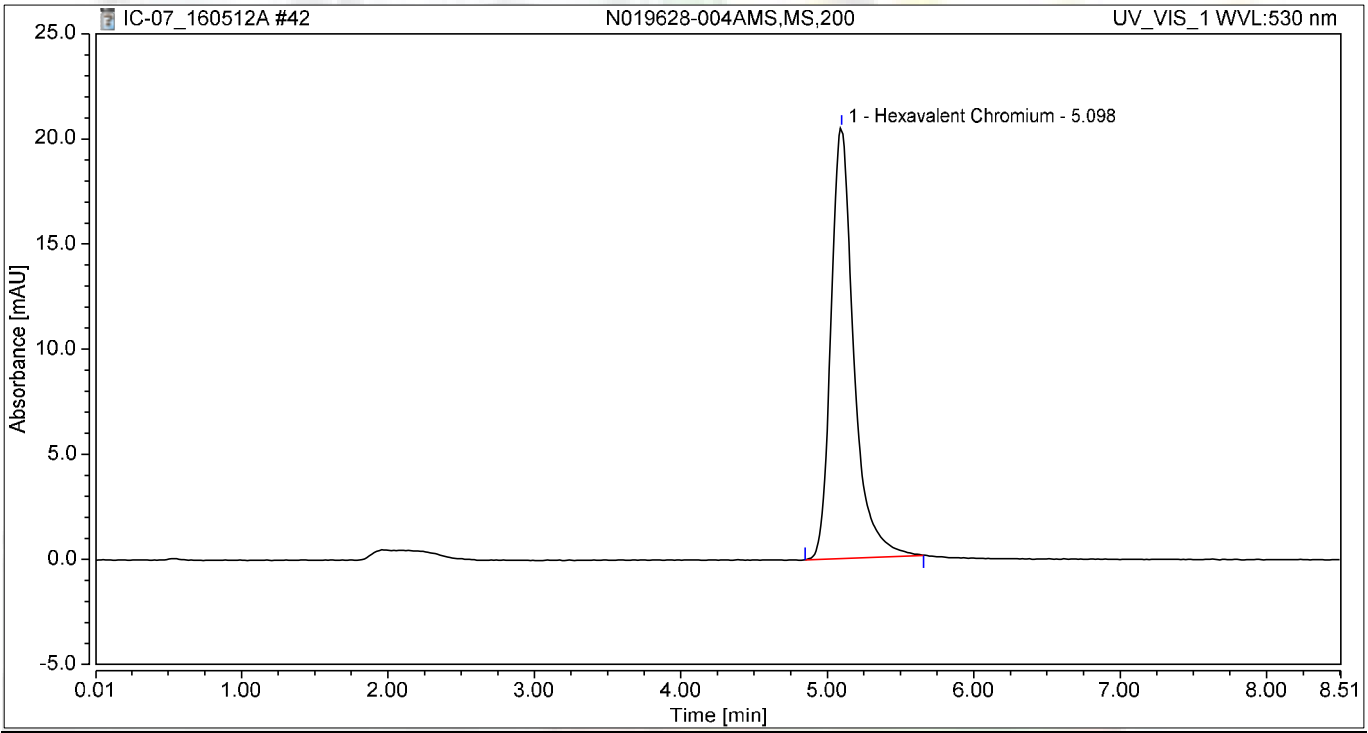
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.508	14.046	100.00	100.00	10.6519
Total:			**2.508**	**14.046**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-004AMS,MS,200**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

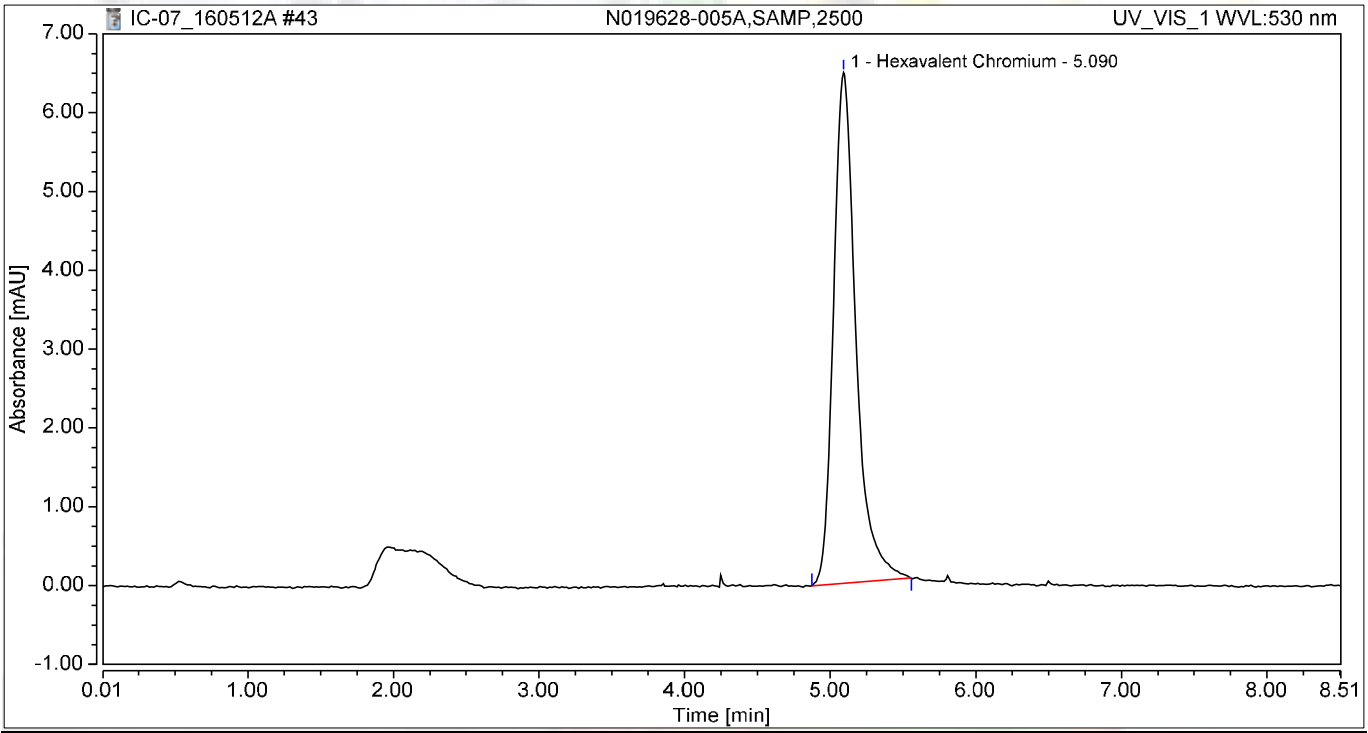
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	3.710	20.502	100.00	100.00	15.7575
Total:			**3.710**	**20.502**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-005A,SAMP,2500**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

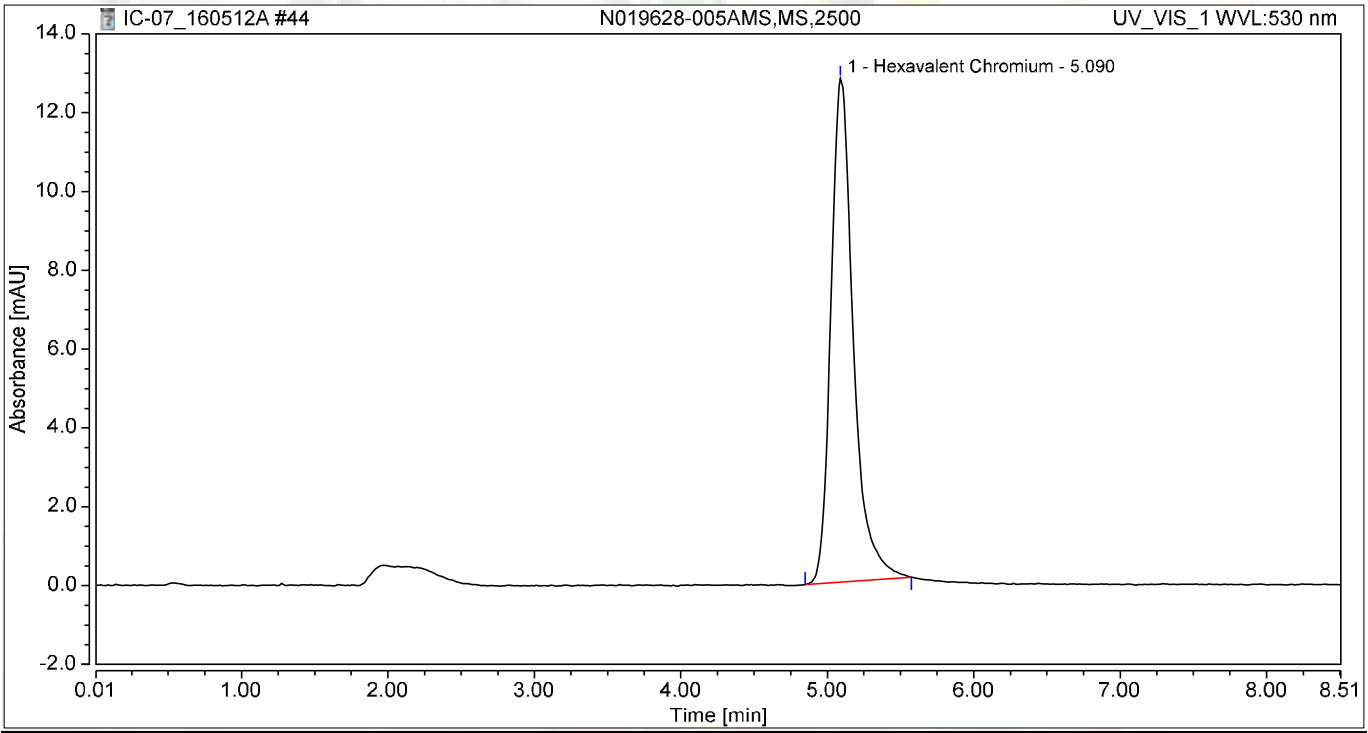
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.156	6.480	100.00	100.00	4.9105
Total:			**1.156**	**6.480**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-005AMS,MS,2500**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

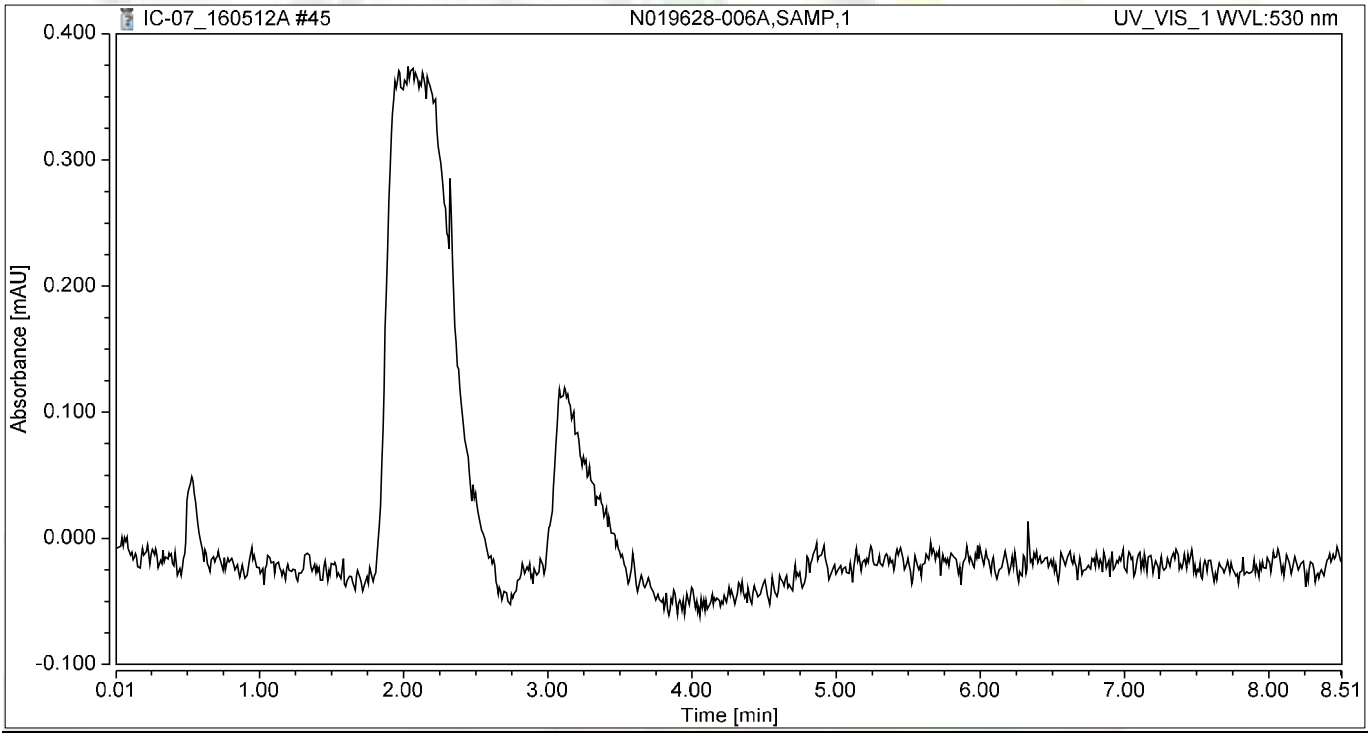
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.271	12.781	100.00	100.00	9.6444
Total:			**2.271**	**12.781**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

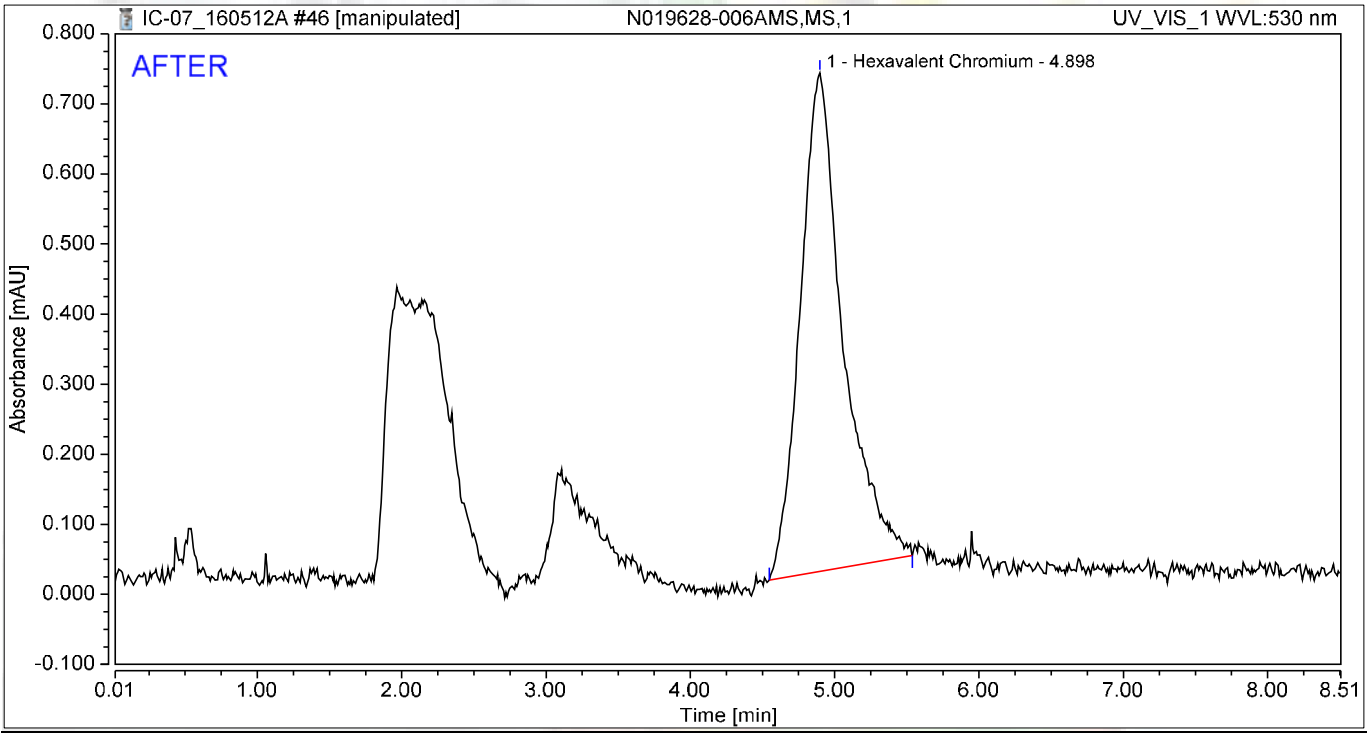
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.898	0.244	0.711	100.00	100.00	1.0379
Total:			**0.244**	**0.711**	**100.00**	**100.00**	

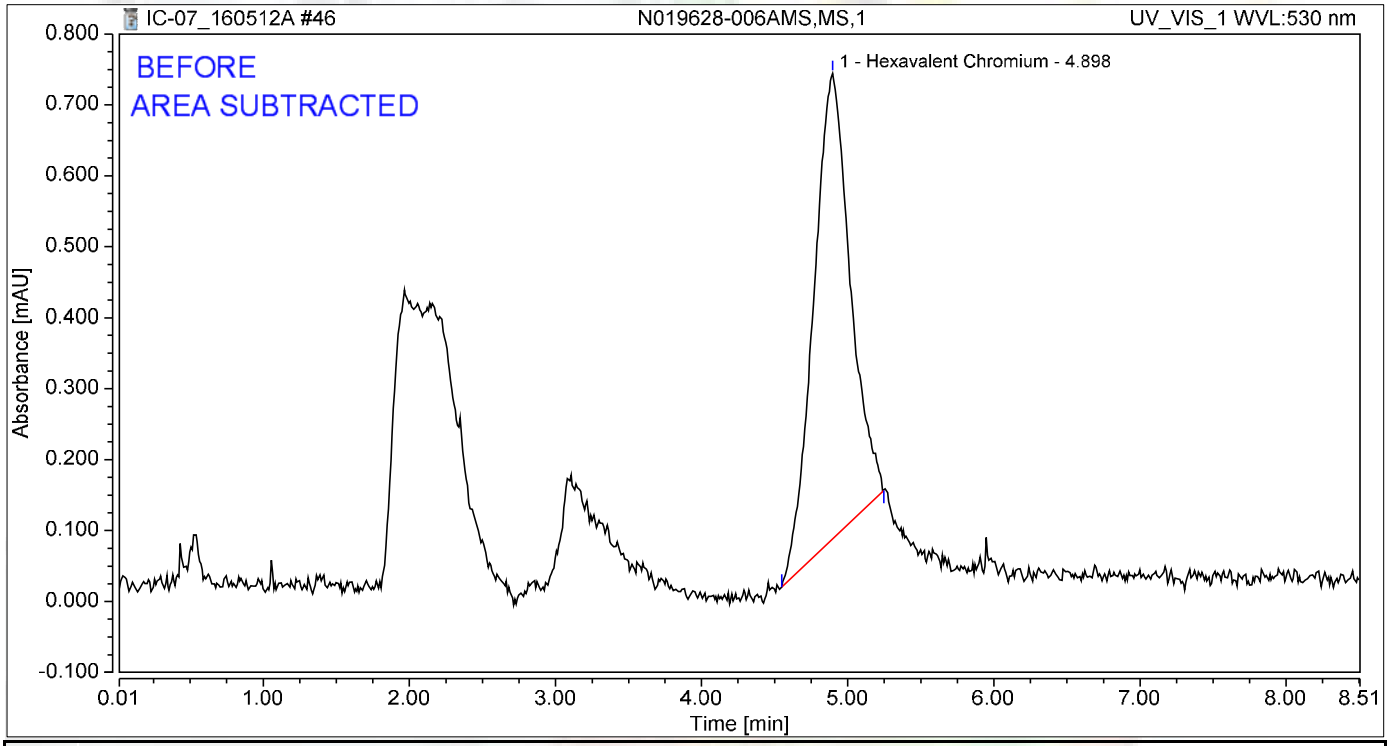
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.898	0.192	0.656	100.00	100.00	0.8143
Total:			**0.192**	**0.656**	**100.00**	**100.00**	

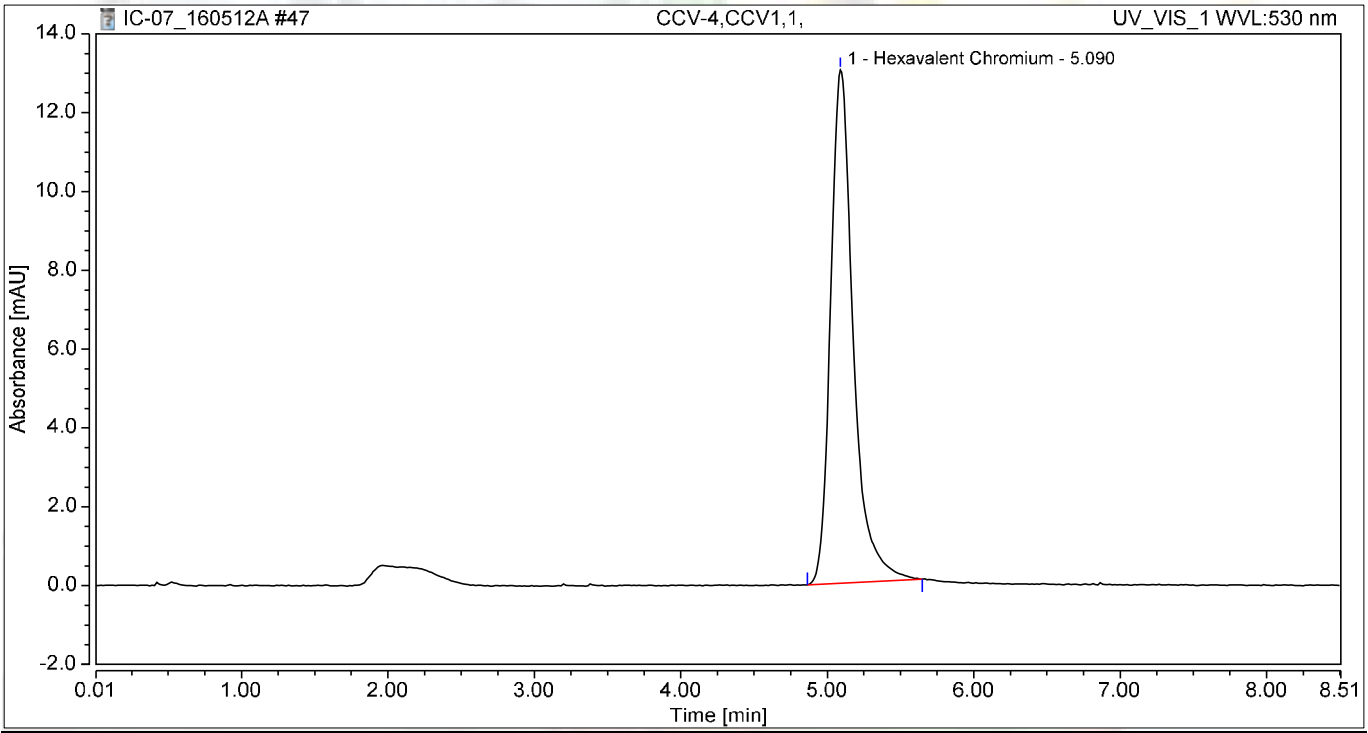
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

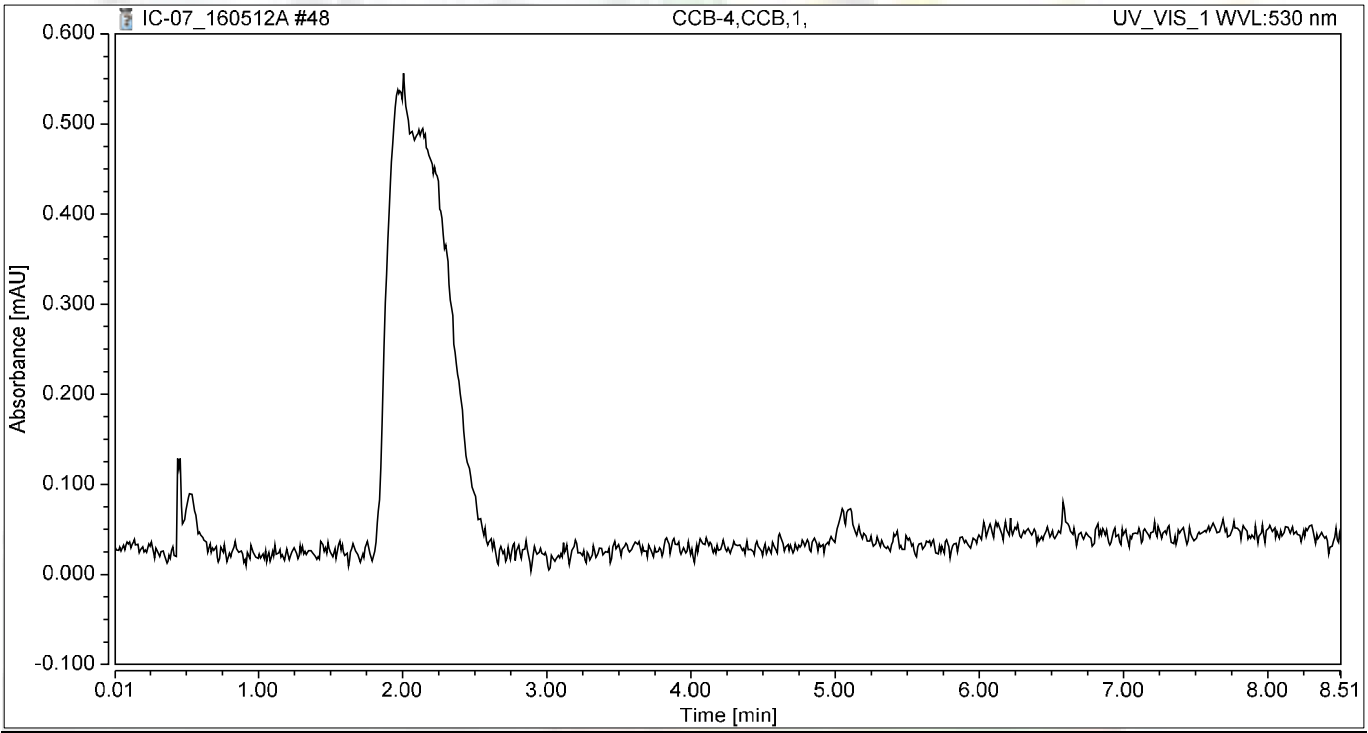
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.338	13.023	100.00	100.00	9.9287
Total:			**2.338**	**13.023**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

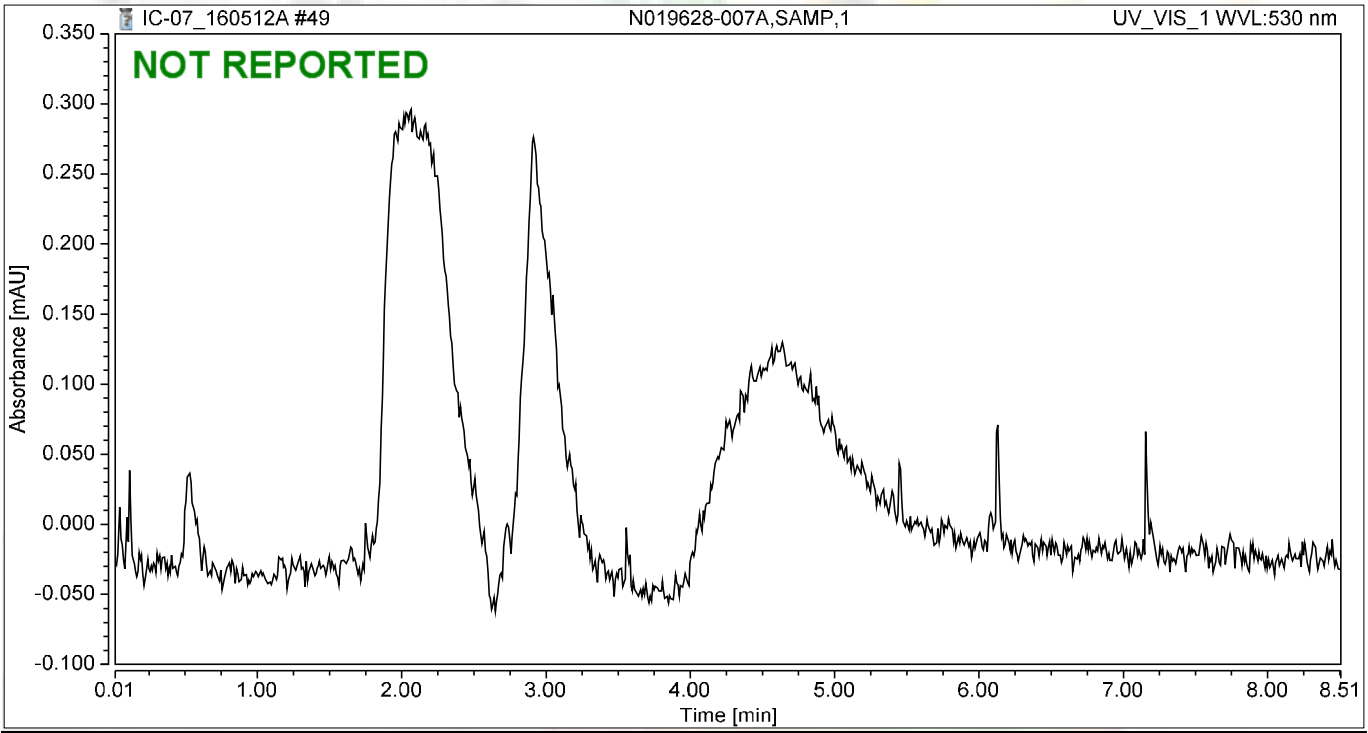
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

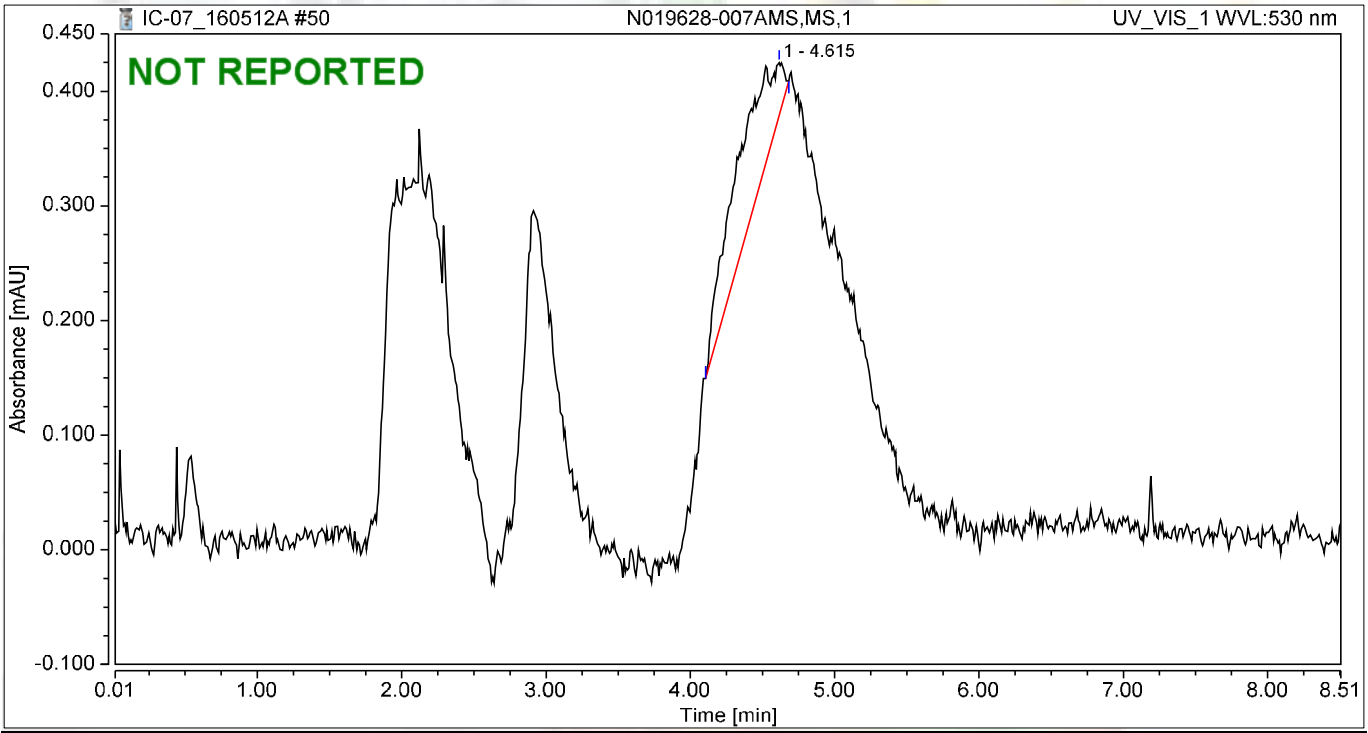
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

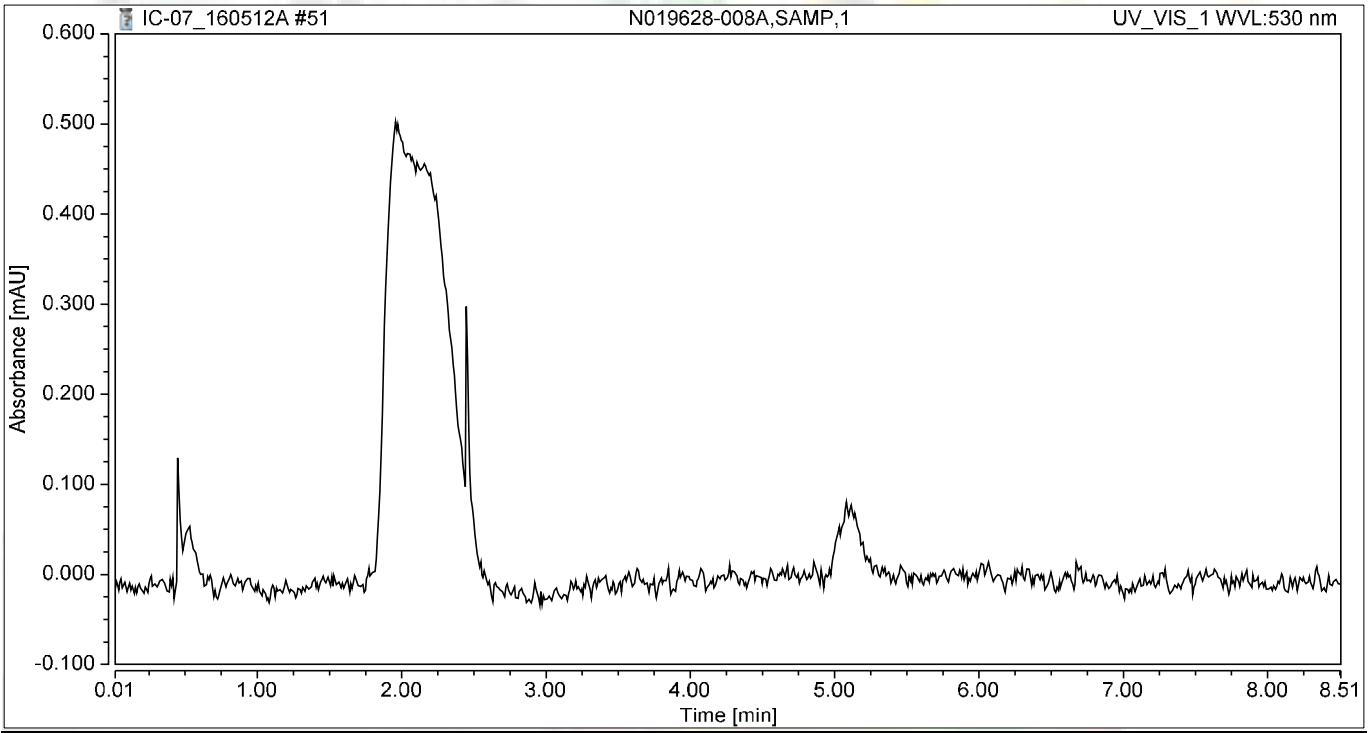
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.615	0.035	0.046	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.035**	**0.046**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

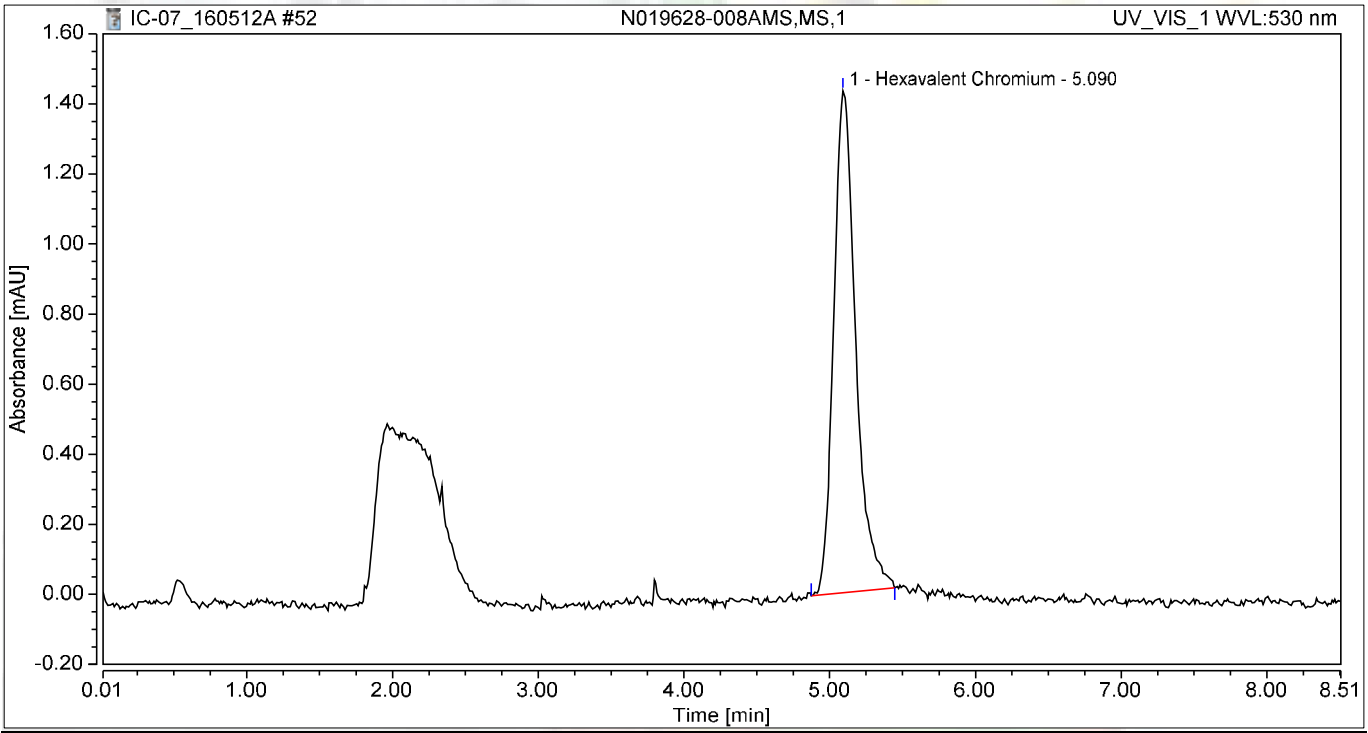
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-008AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

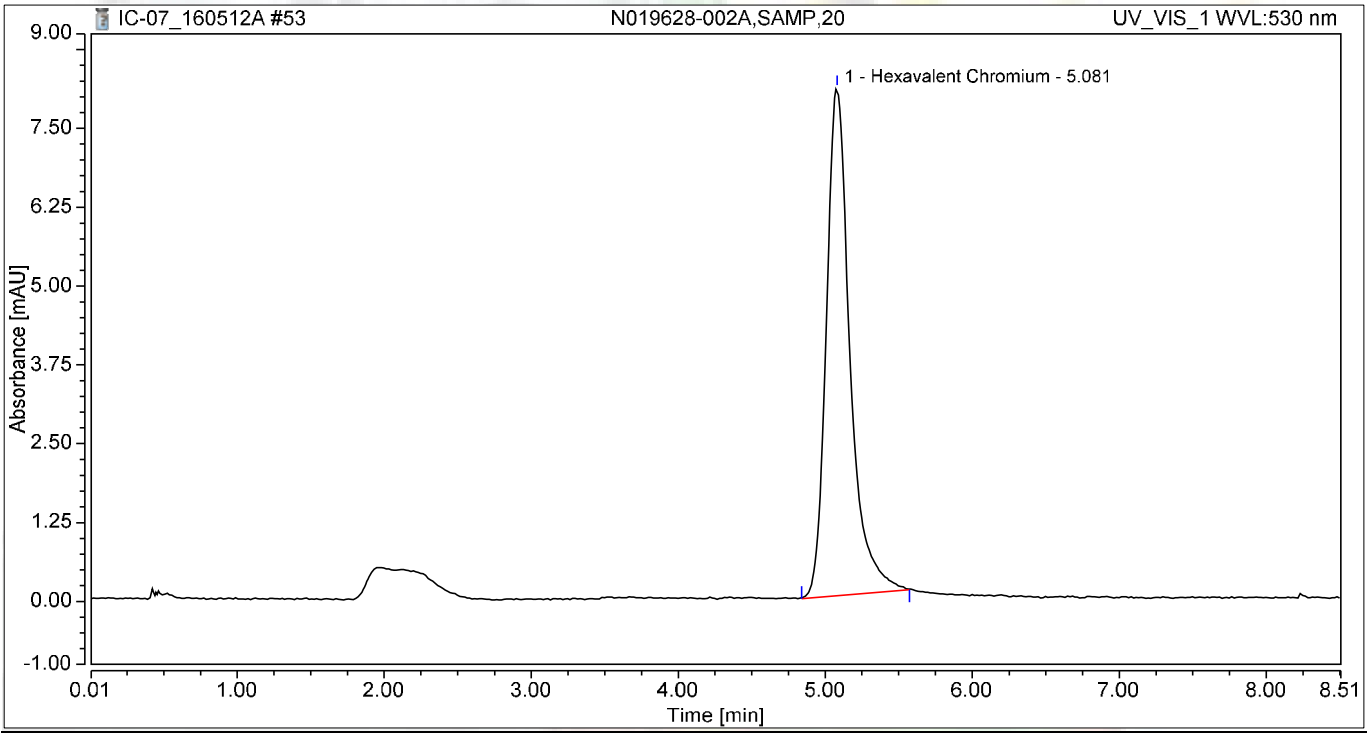
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.251	1.433	100.00	100.00	1.0660
Total:			**0.251**	**1.433**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-002A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

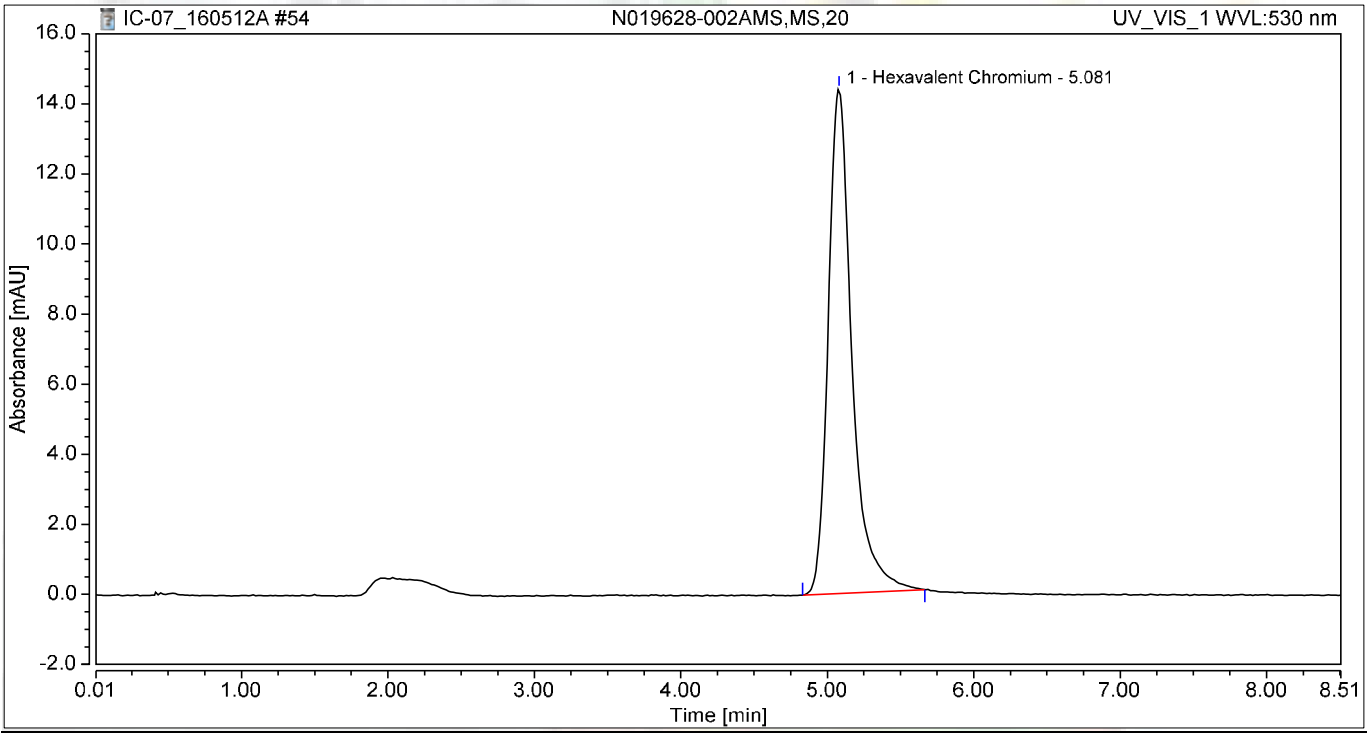
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	1.500	8.048	100.00	100.00	6.3713
Total:			**1.500**	**8.048**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-002AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

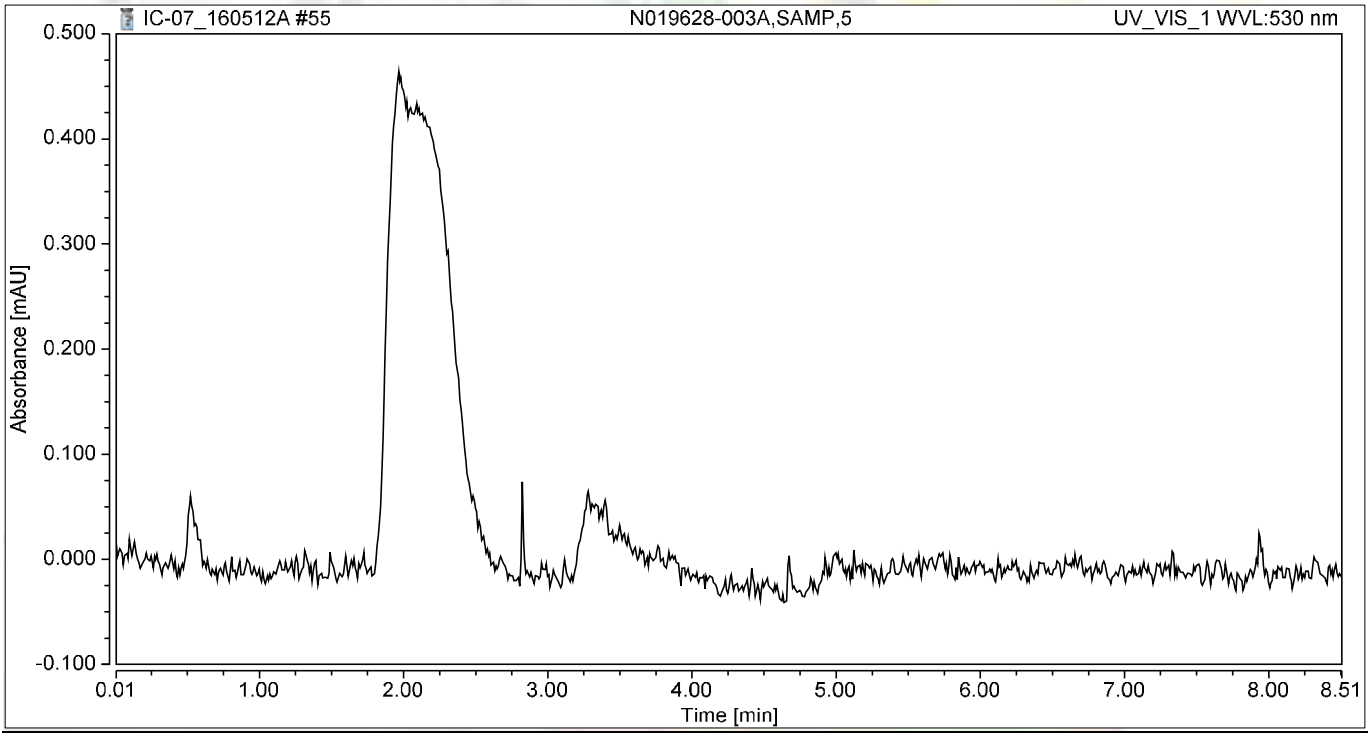
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	2.700	14.410	100.00	100.00	11.4662
Total:			**2.700**	**14.410**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

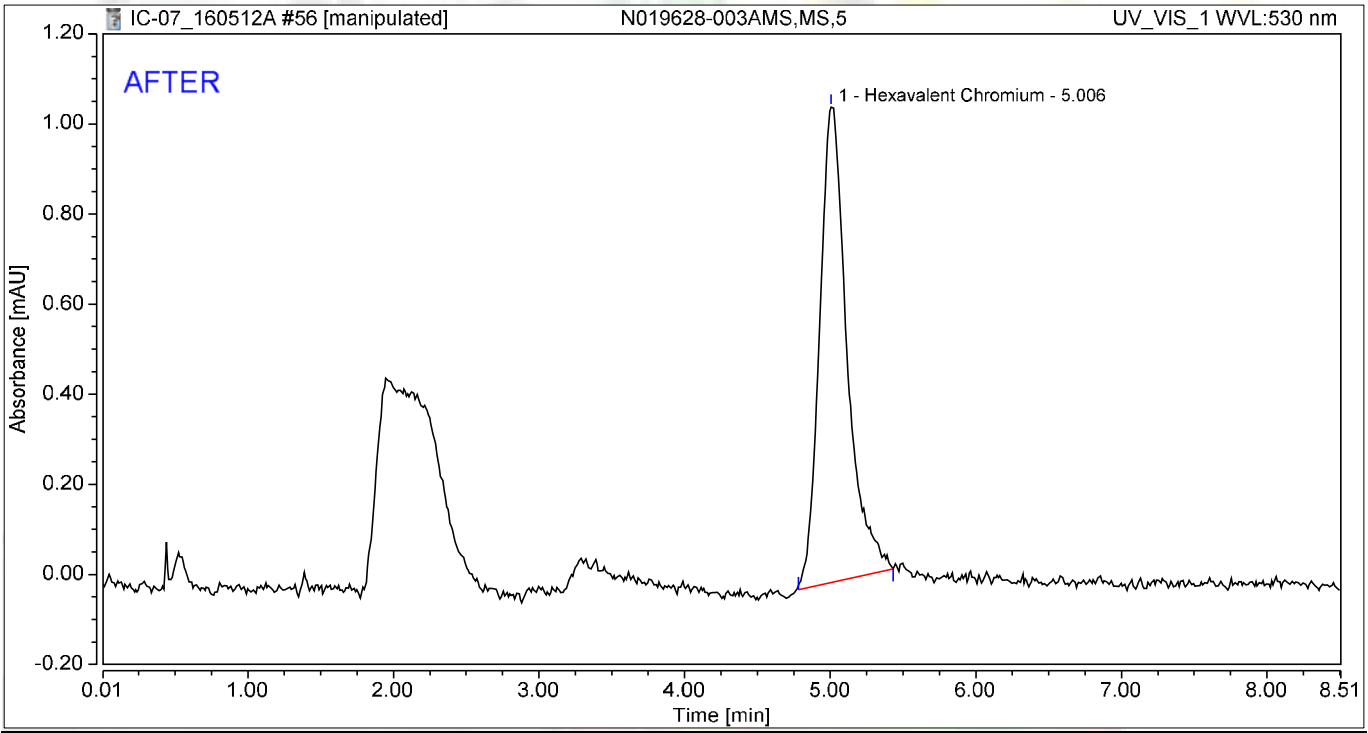
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.230	1.055	100.00	100.00	0.9790
Total:			**0.230**	**1.055**	**100.00**	**100.00**	

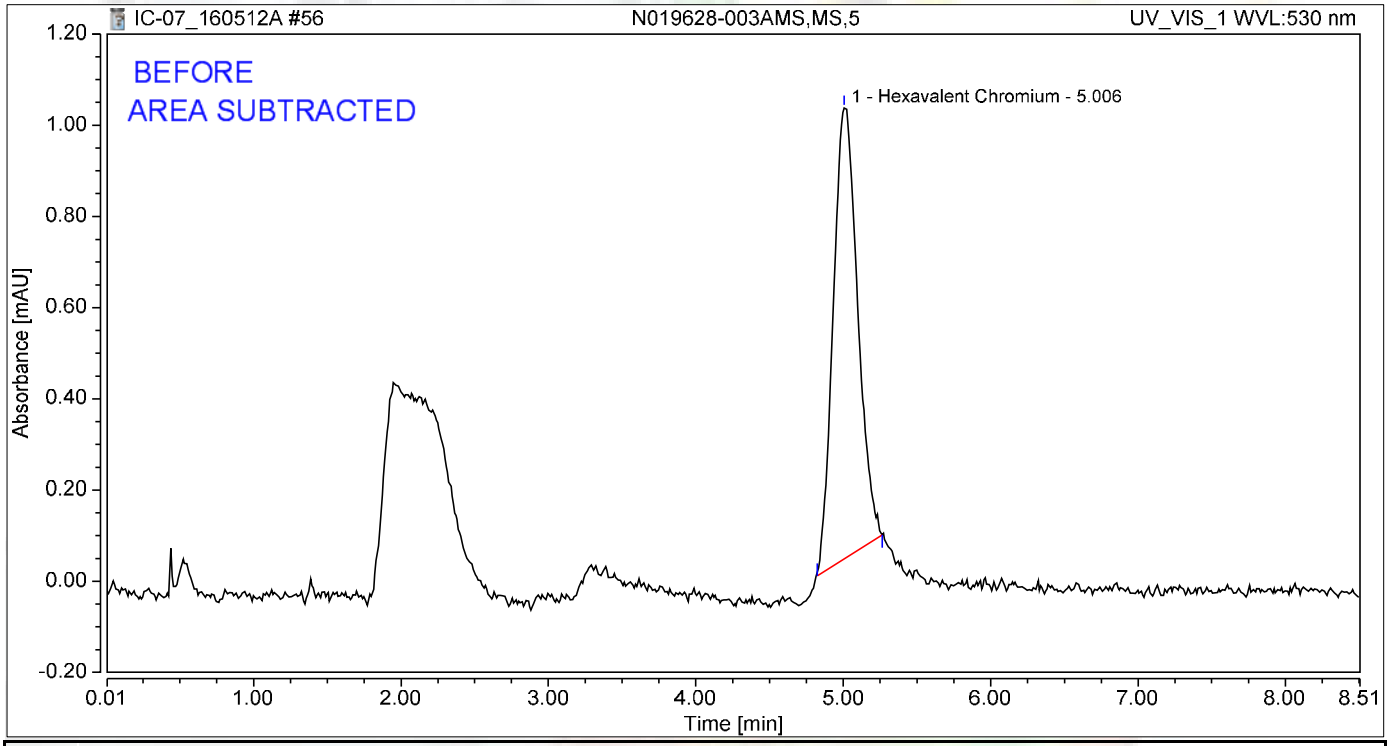
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.190	0.989	100.00	100.00	0.8057
Total:			**0.190**	**0.989**	**100.00**	**100.00**	

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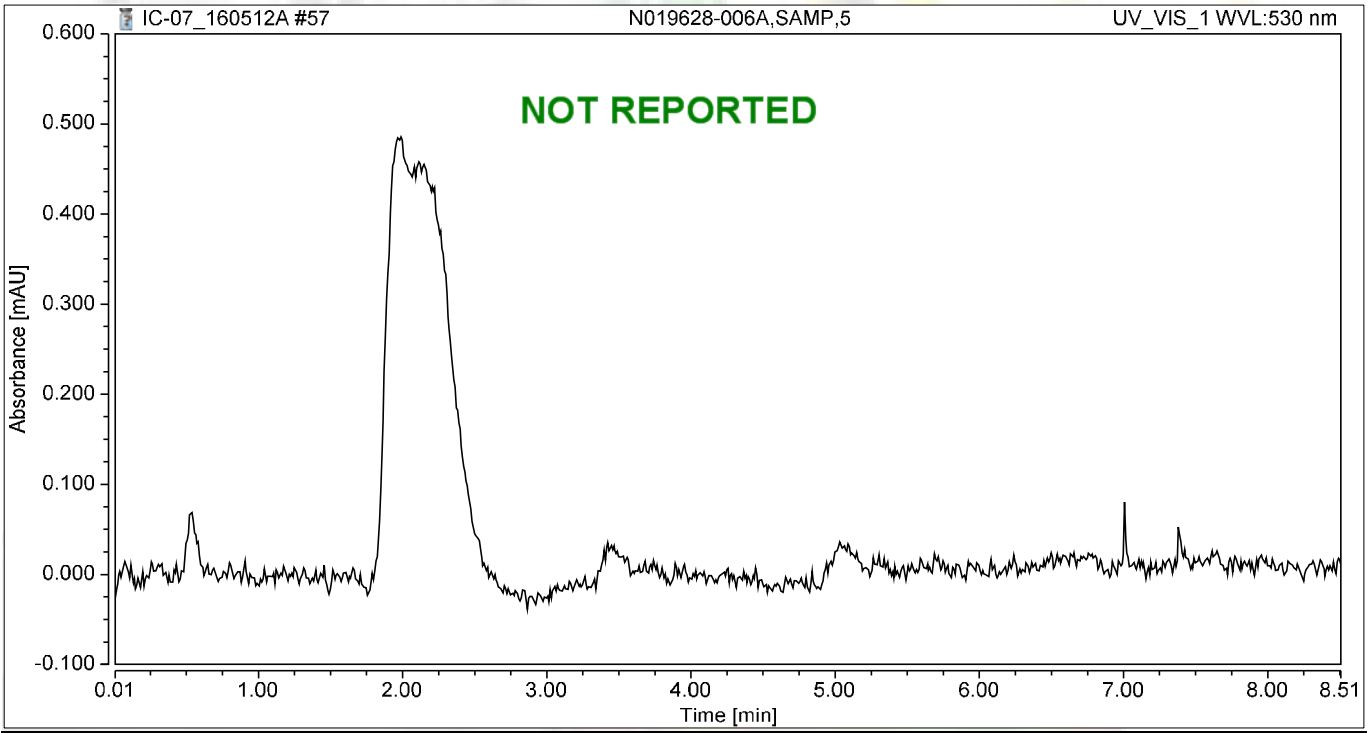
Chromatogram and Results

Injection Details

Injection Name:	**N019628-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

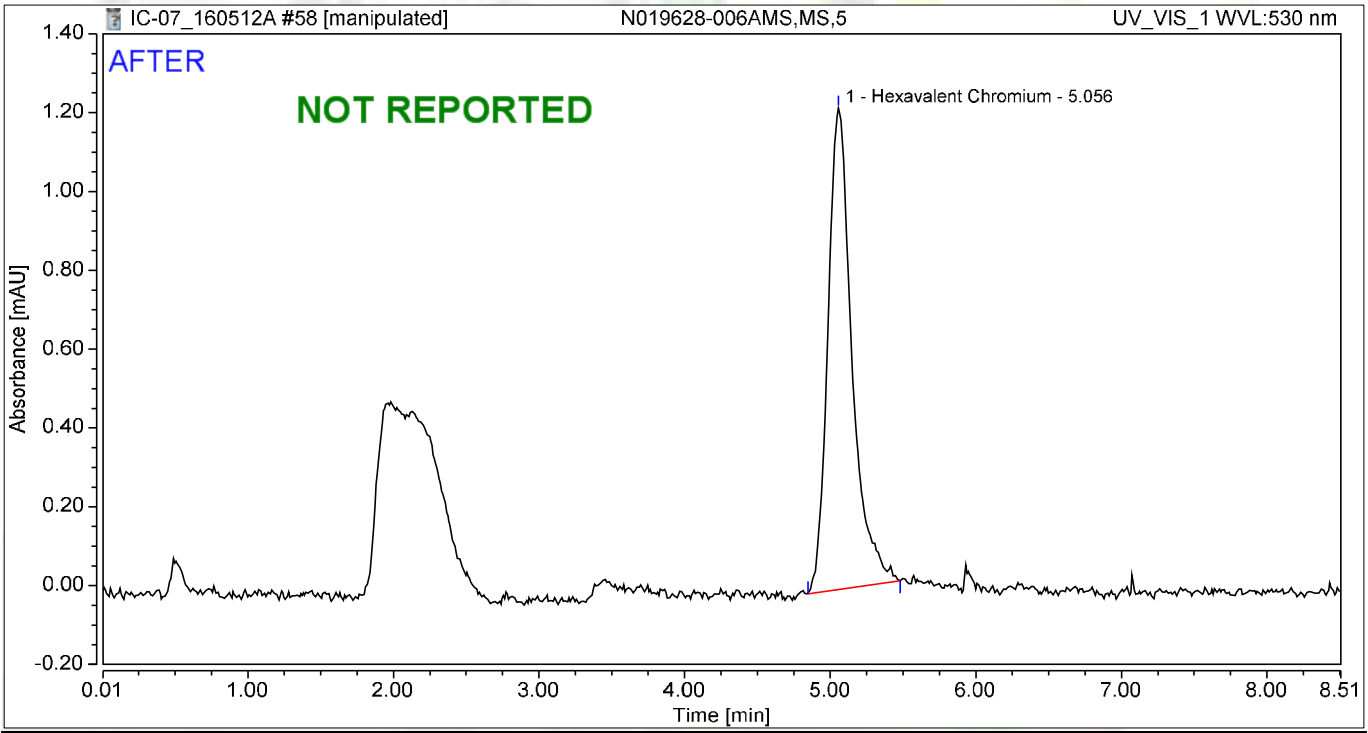
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.235	1.221	100.00	100.00	0.9985
Total:			**0.235**	**1.221**	**100.00**	**100.00**	

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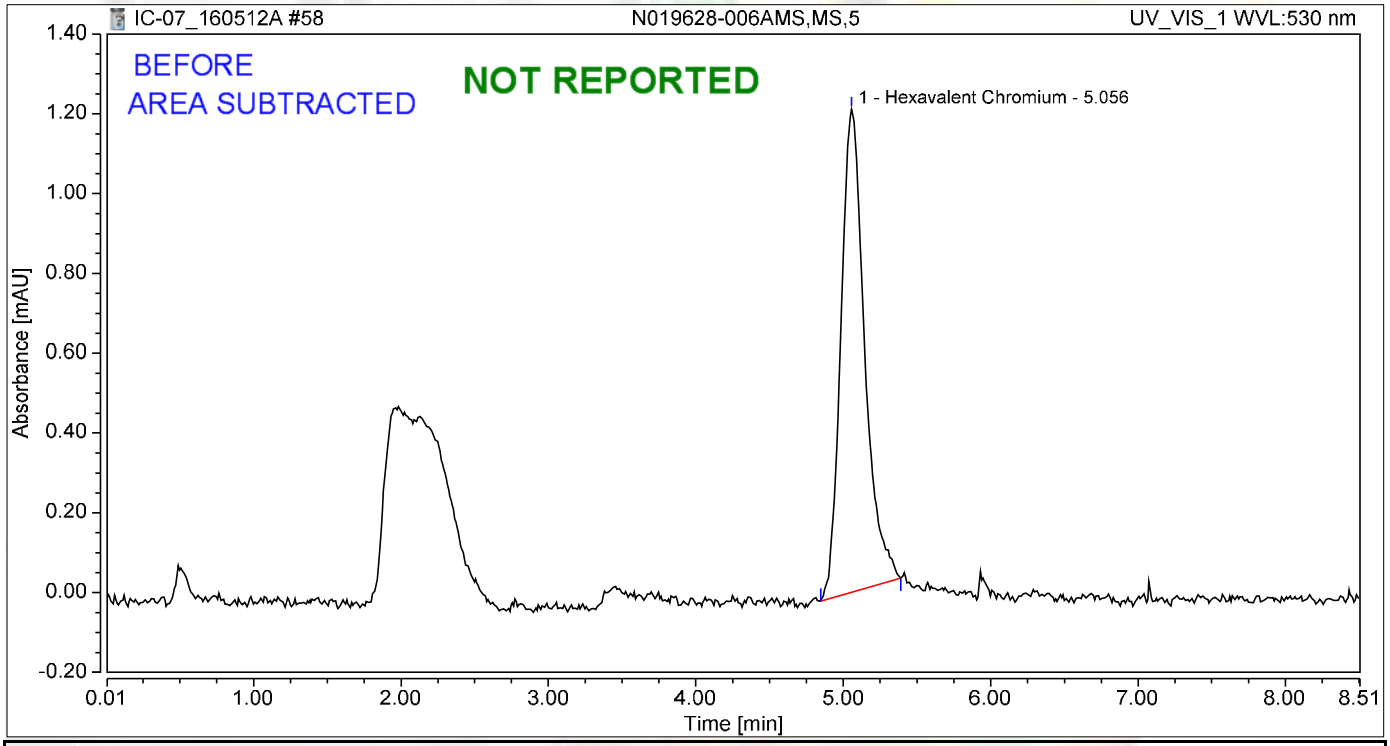
Chromatogram and Results

Injection Details

Injection Name:	**N019628-006AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.225	1.210	100.00	100.00	0.9577
Total:			**0.225**	**1.210**	**100.00**	**100.00**	

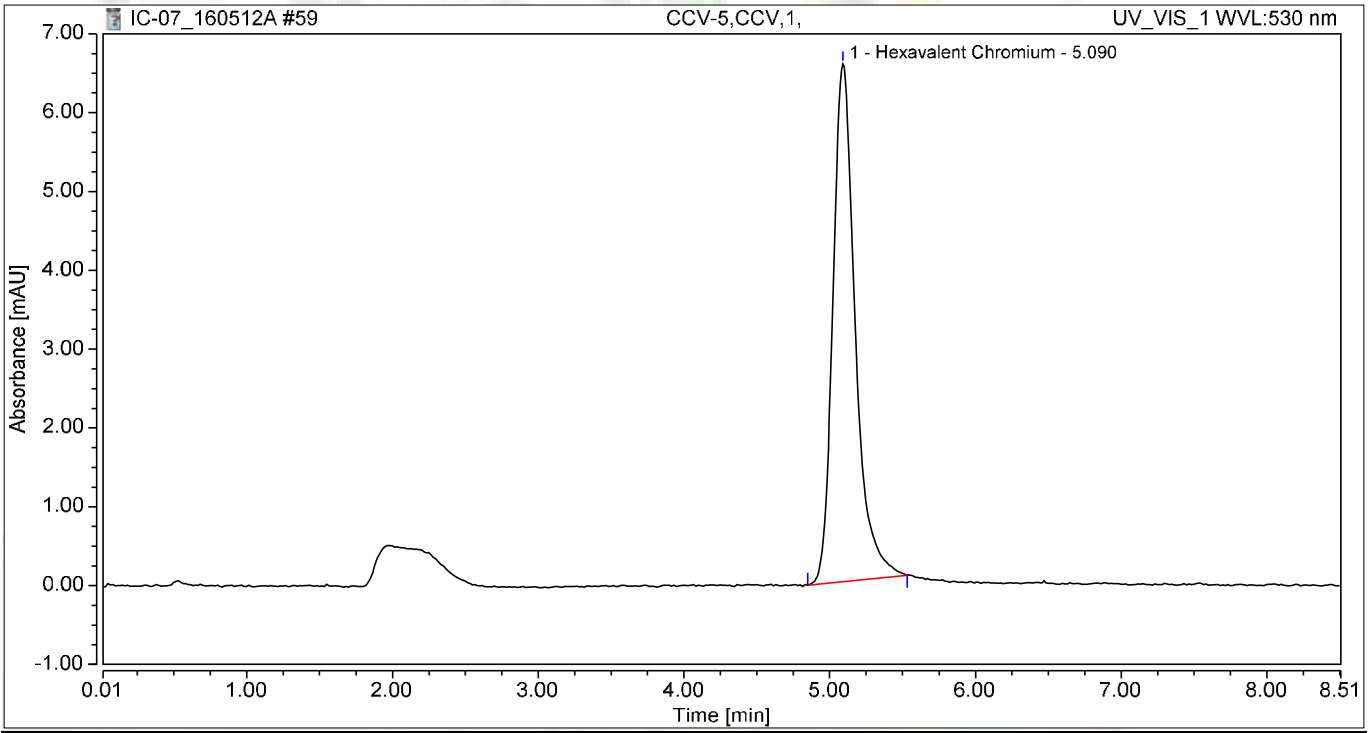
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

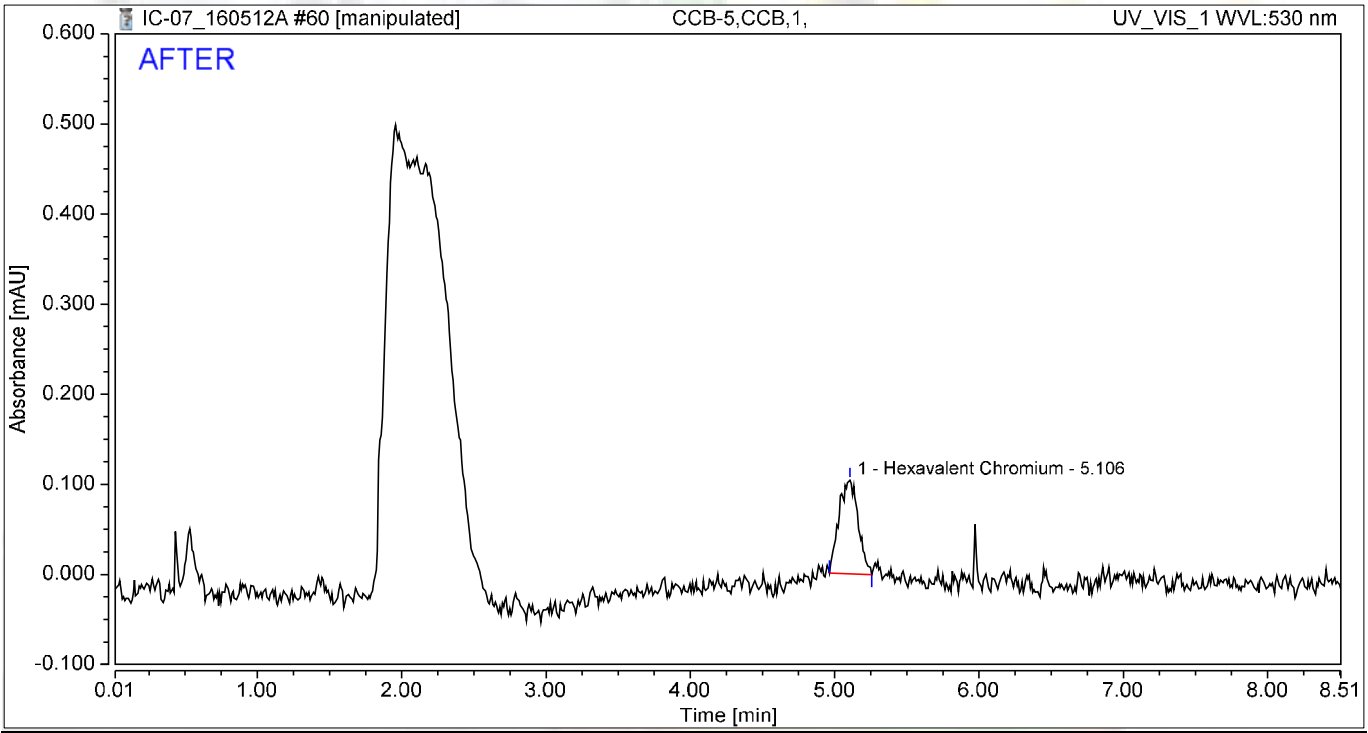
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.164	6.565	100.00	100.00	4.9455
Total:			**1.164**	**6.565**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.106	0.016	0.104	100.00	100.00	0.0681
Total:			**0.016**	**0.104**	**100.00**	**100.00**	

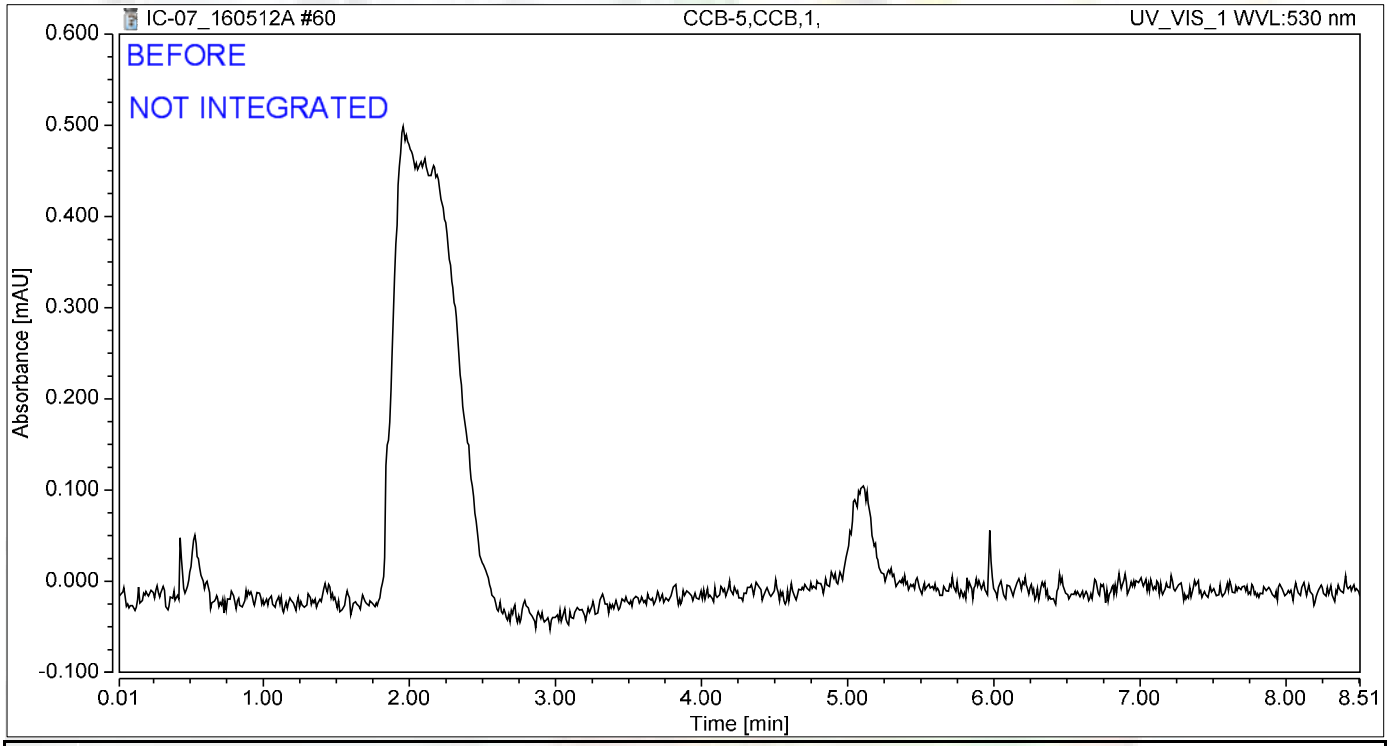
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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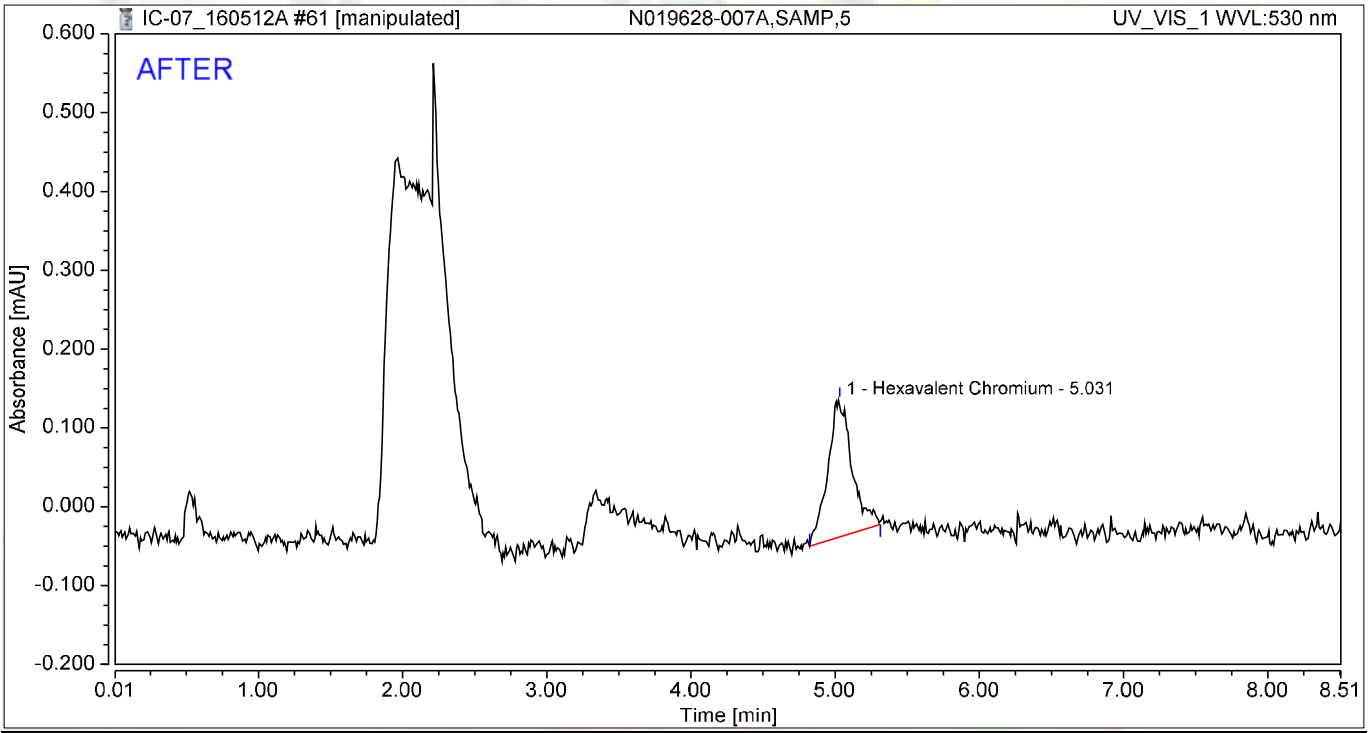
Chromatogram and Results

Injection Details

Injection Name:	**N019628-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.034	0.174	100.00	100.00	0.1442
Total:			**0.034**	**0.174**	**100.00**	**100.00**	

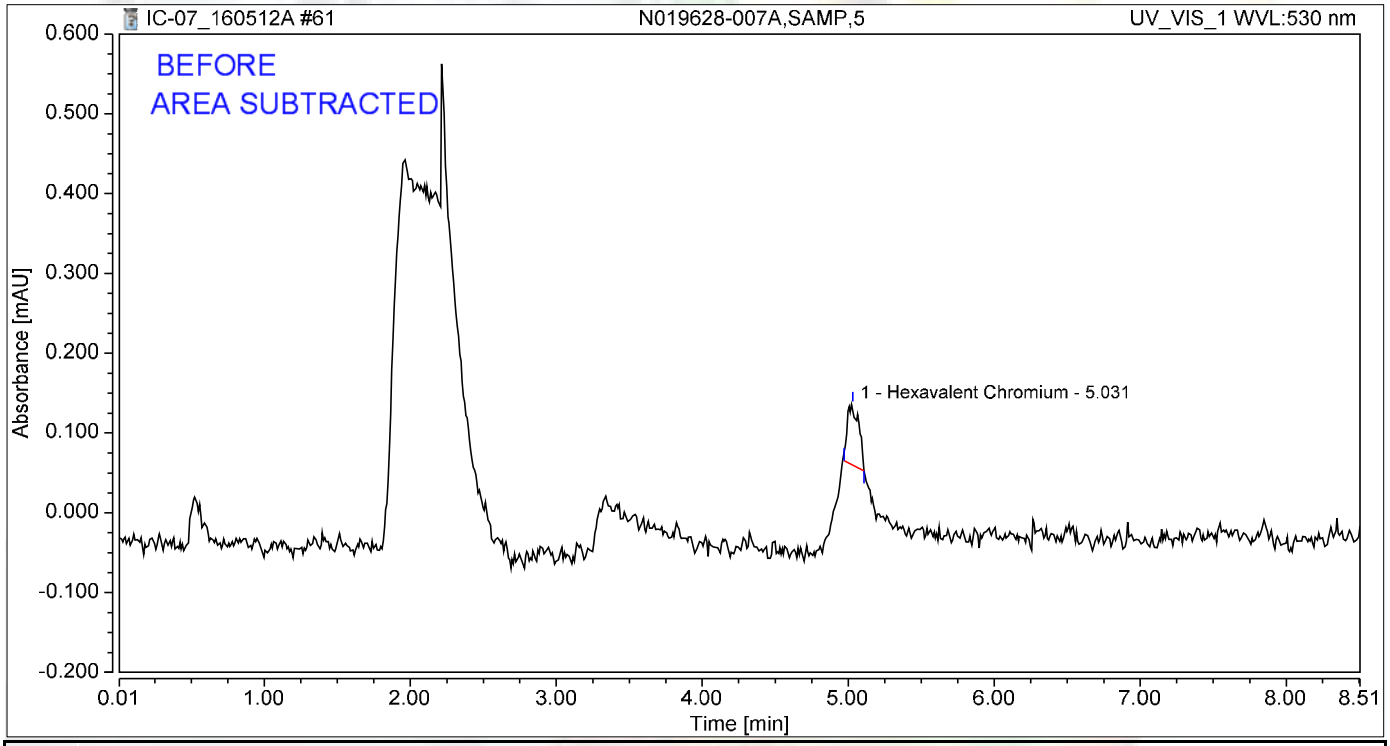
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.007	0.076	100.00	100.00	0.0289
Total:			**0.007**	**0.076**	**100.00**	**100.00**	

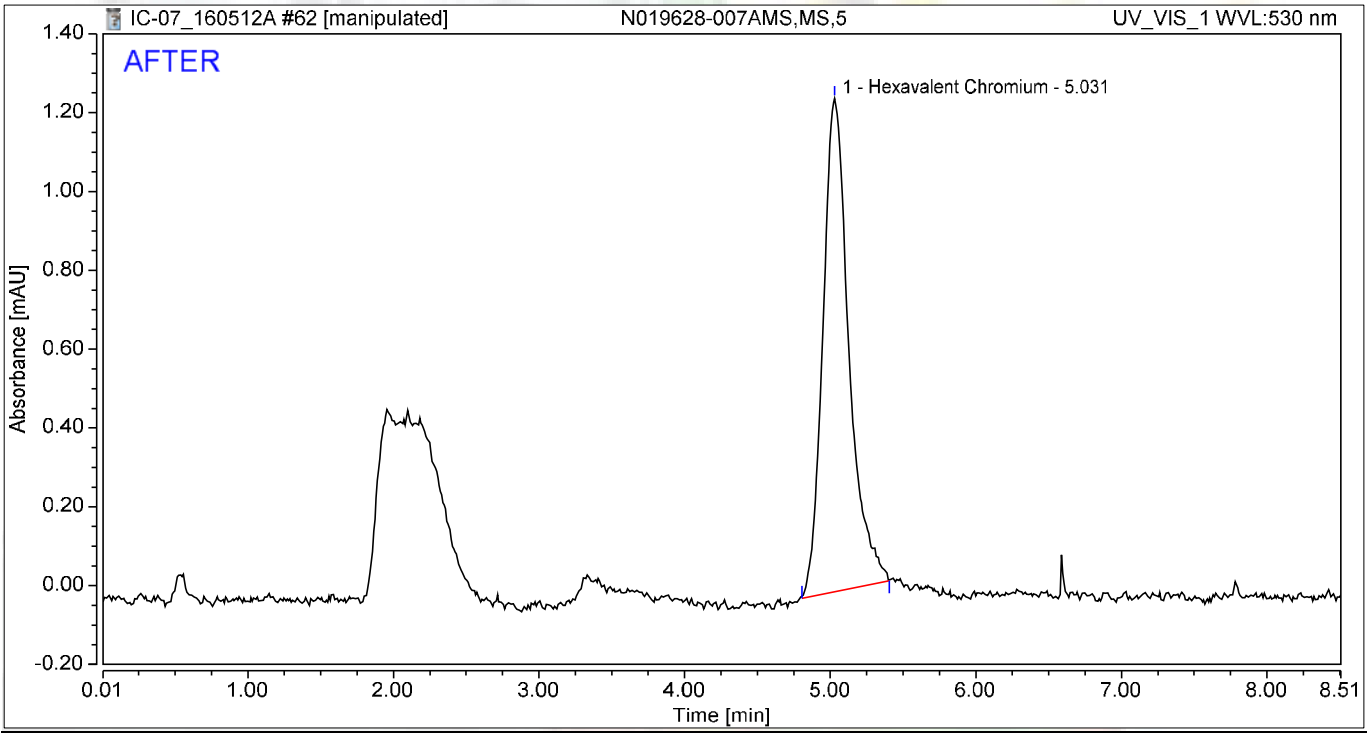
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.259	1.251	100.00	100.00	1.1007
Total:			**0.259**	**1.251**	**100.00**	**100.00**	

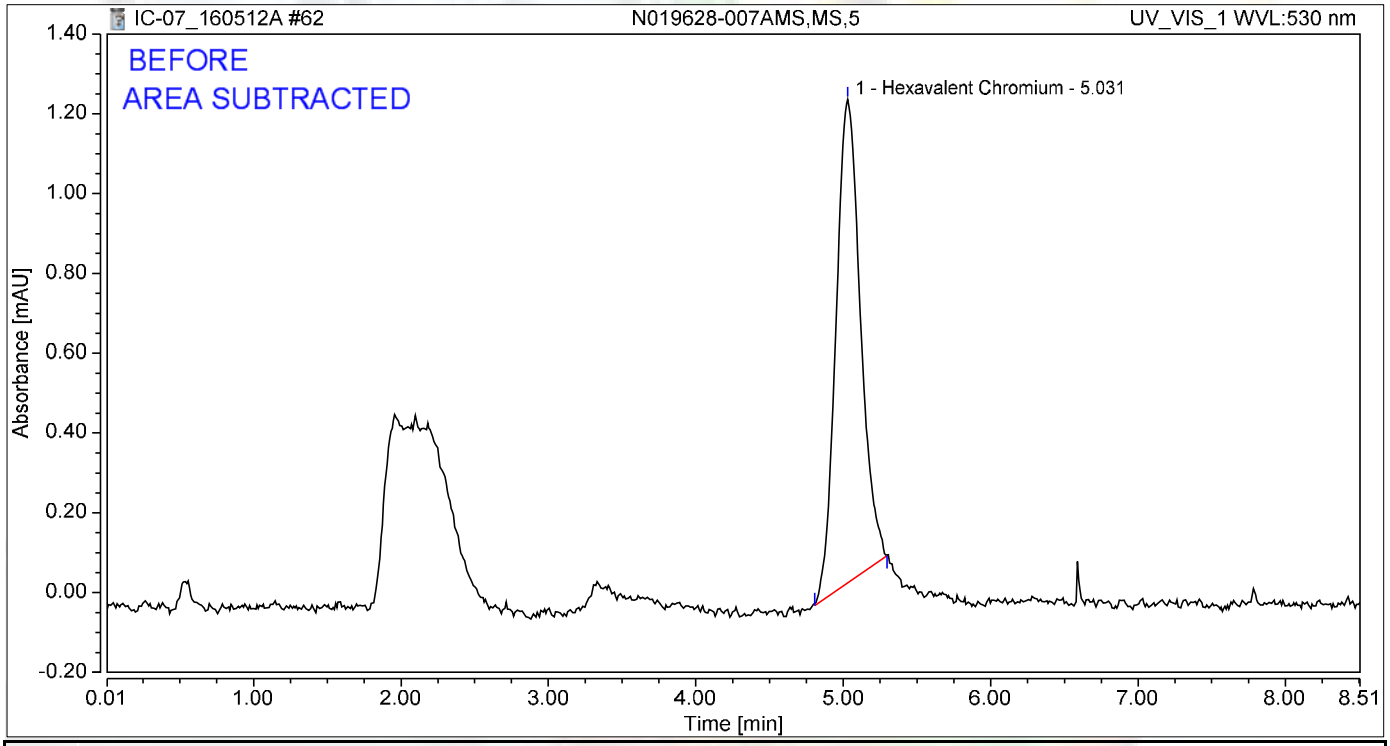
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.233	1.211	100.00	100.00	0.9876
Total:			**0.233**	**1.211**	**100.00**	**100.00**	

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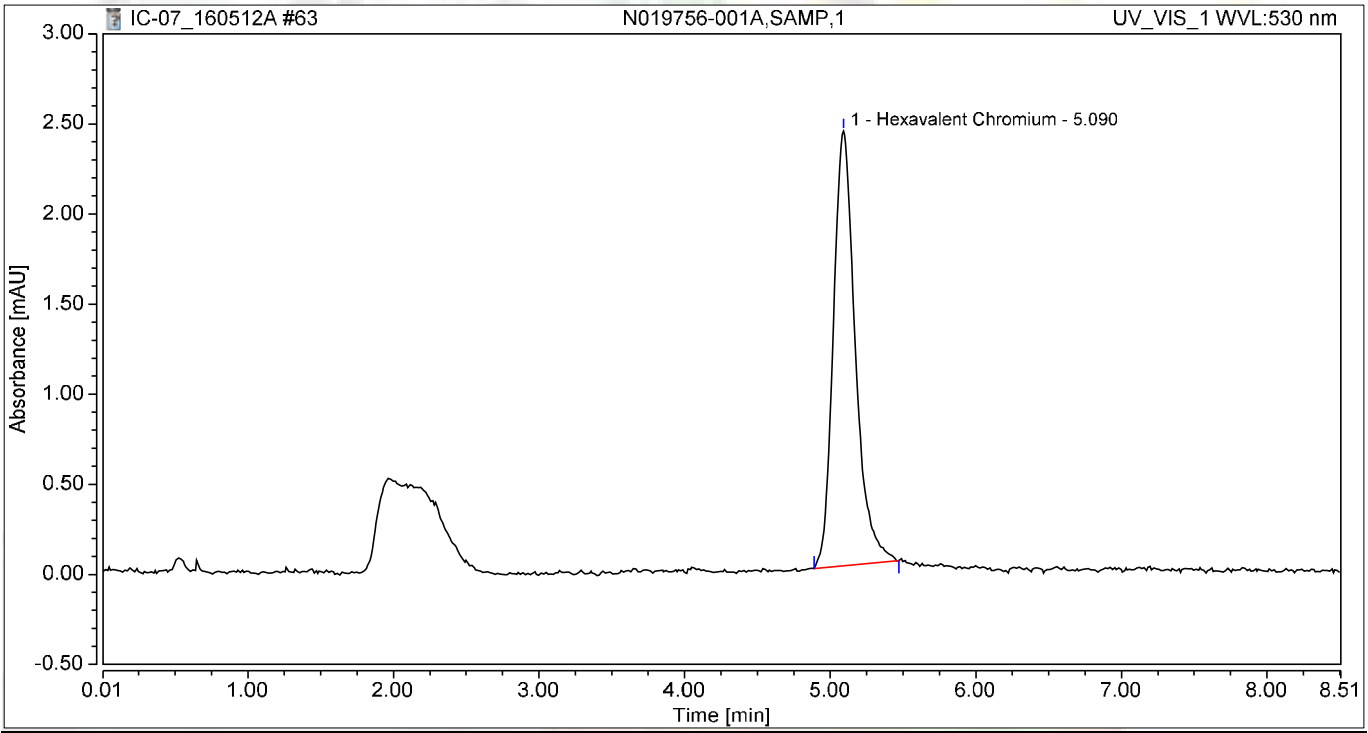
Chromatogram and Results

Injection Details

Injection Name:	**N019756-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

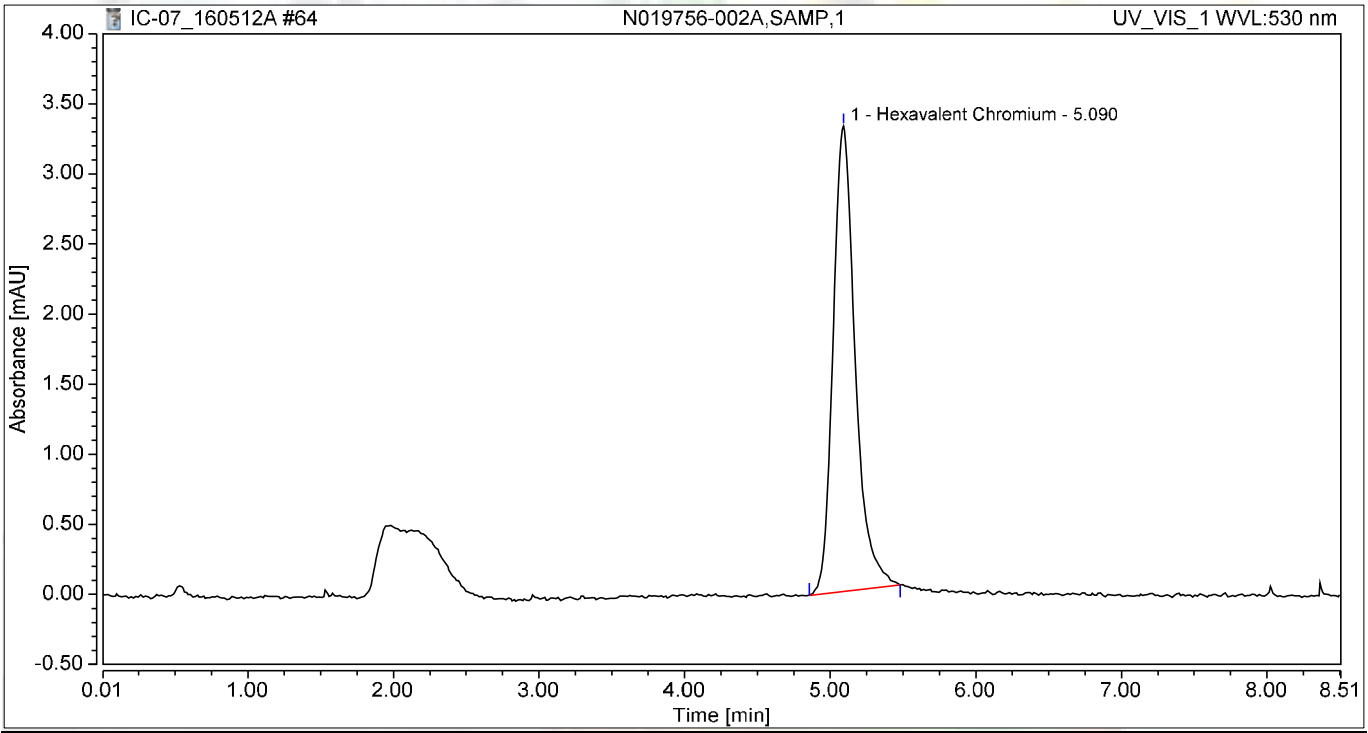
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.422	2.413	100.00	100.00	1.7929
Total:			**0.422**	**2.413**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019756-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

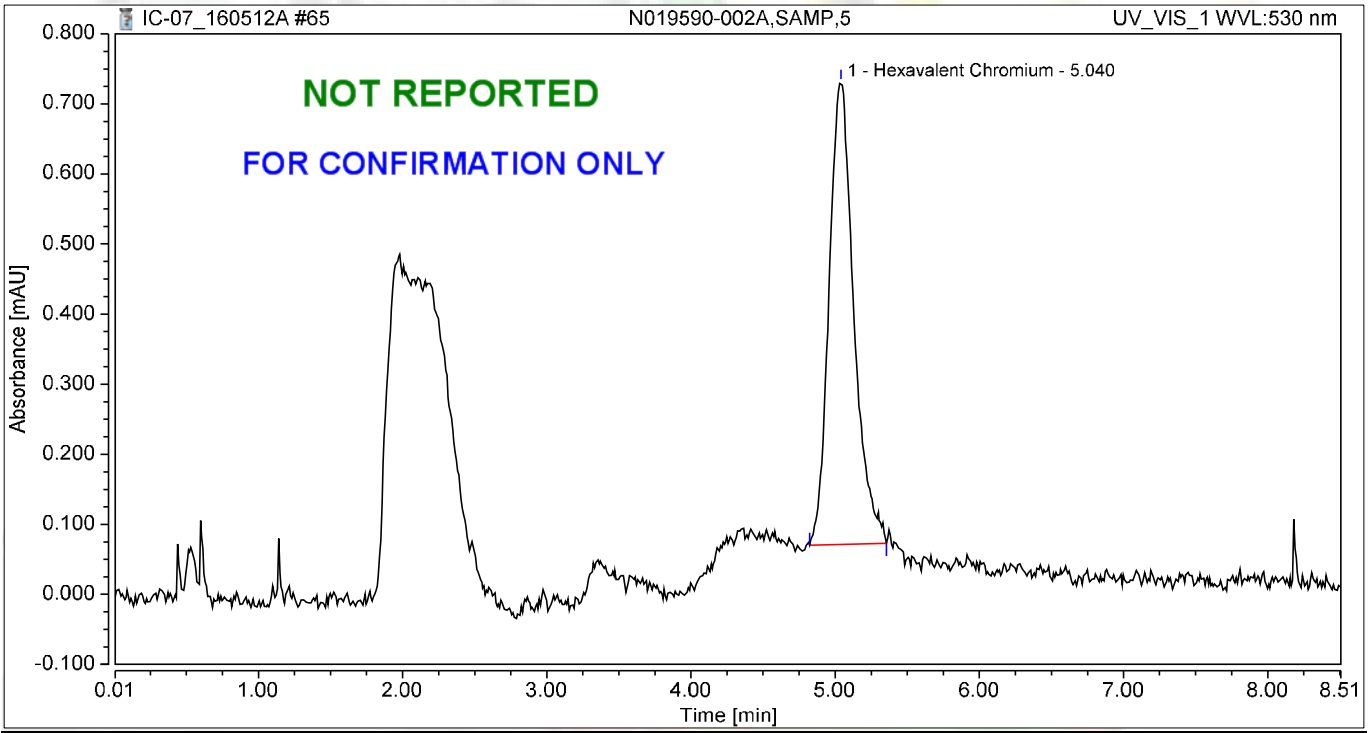
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.585	3.321	100.00	100.00	2.4850
Total:			**0.585**	**3.321**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019590-002A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

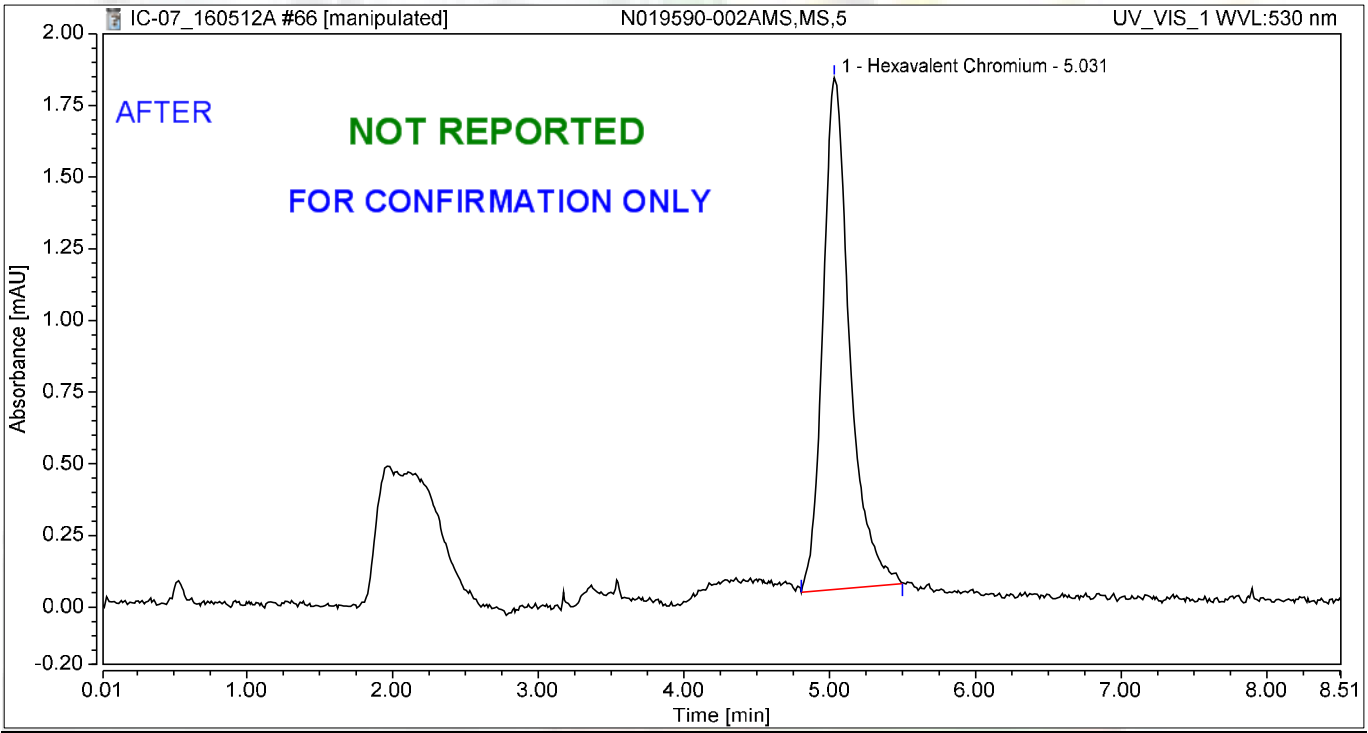
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	0.131	0.660	100.00	100.00	0.5573
Total:			**0.131**	**0.660**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019590-002AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.380	1.785	100.00	100.00	1.6152
Total:			**0.380**	**1.785**	**100.00**	**100.00**	

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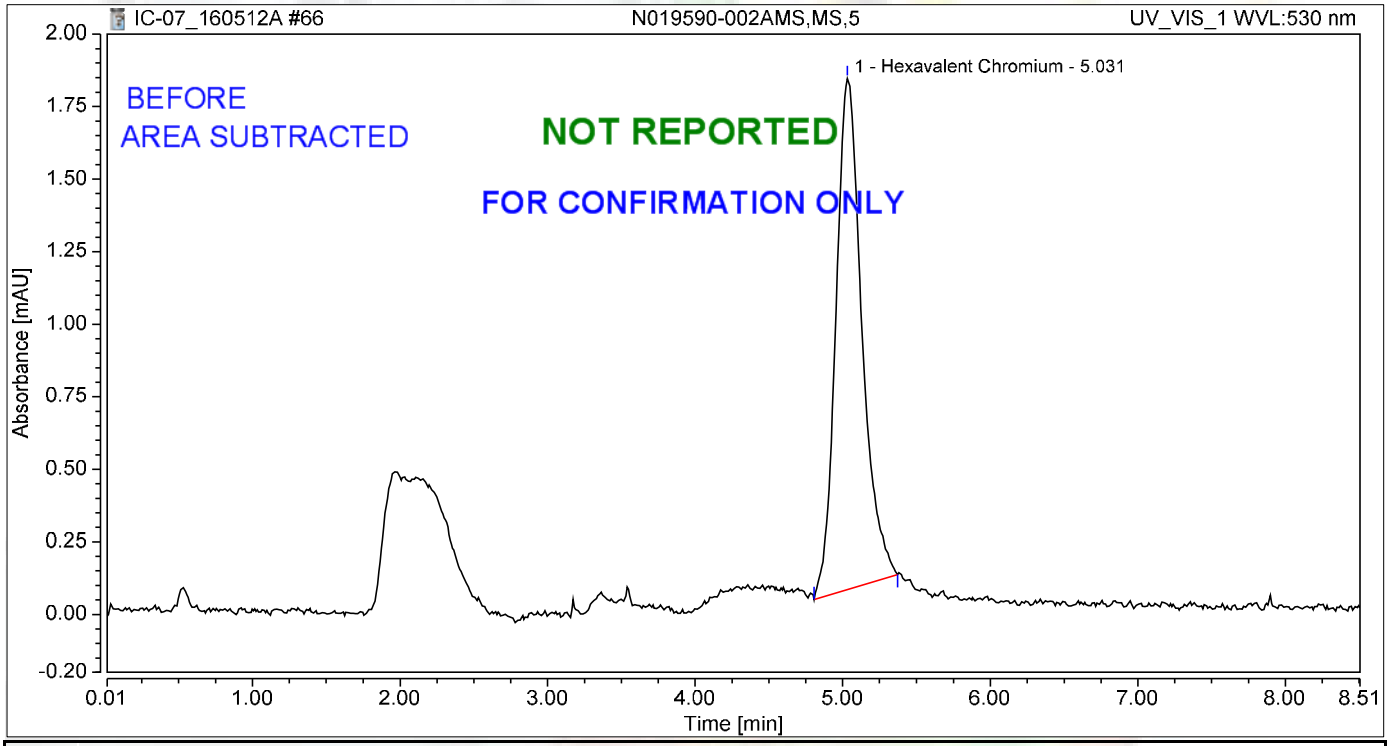
Chromatogram and Results

Injection Details

Injection Name:	**N019590-002AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.359	1.761	100.00	100.00	1.5232
Total:			**0.359**	**1.761**	**100.00**	**100.00**	

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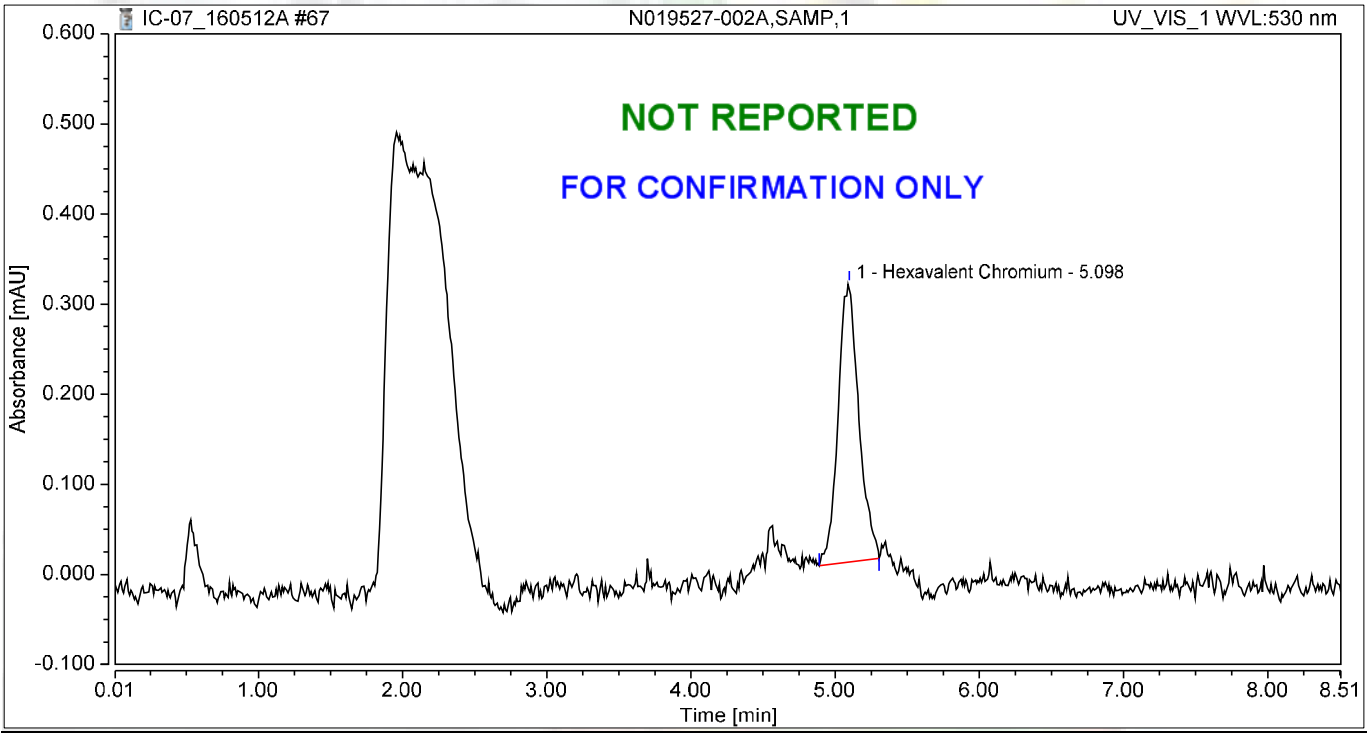
Chromatogram and Results

Injection Details

Injection Name:	**N019527-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

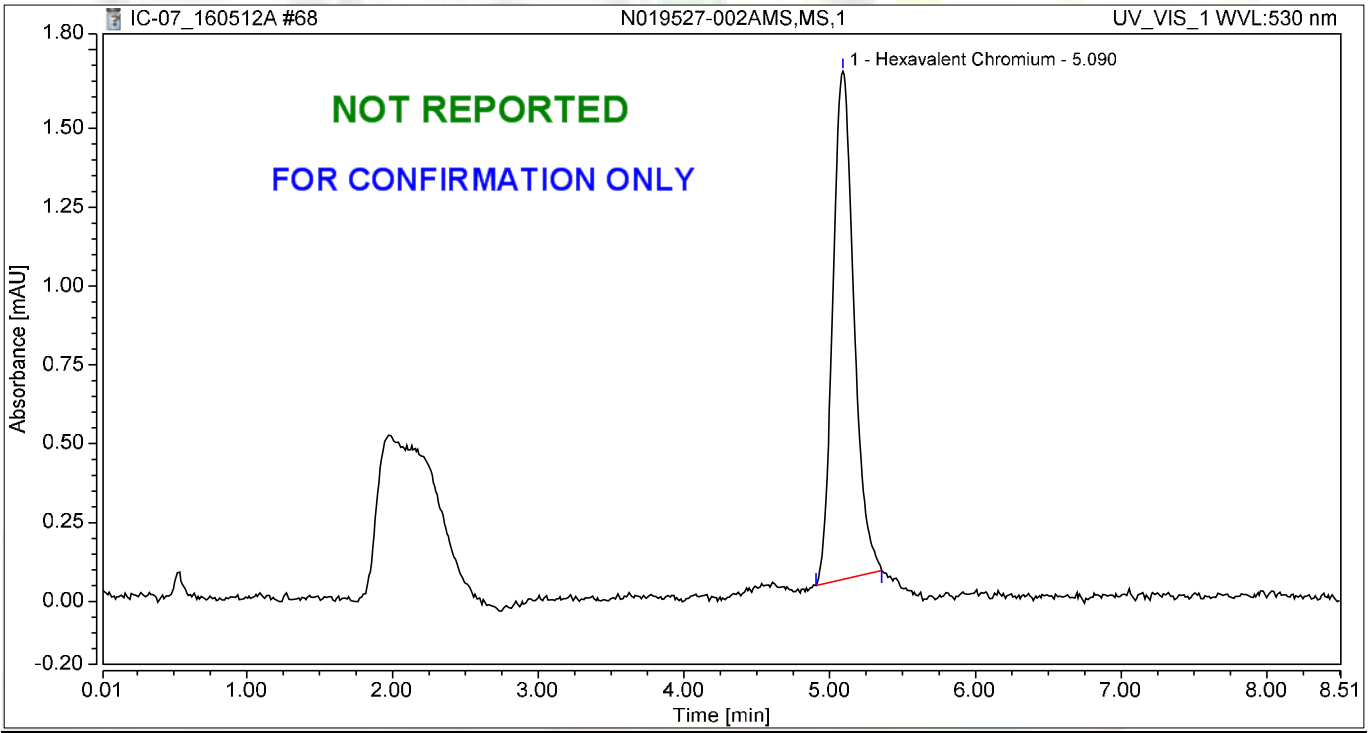
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.052	0.309	100.00	100.00	0.2191
Total:			**0.052**	**0.309**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019527-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

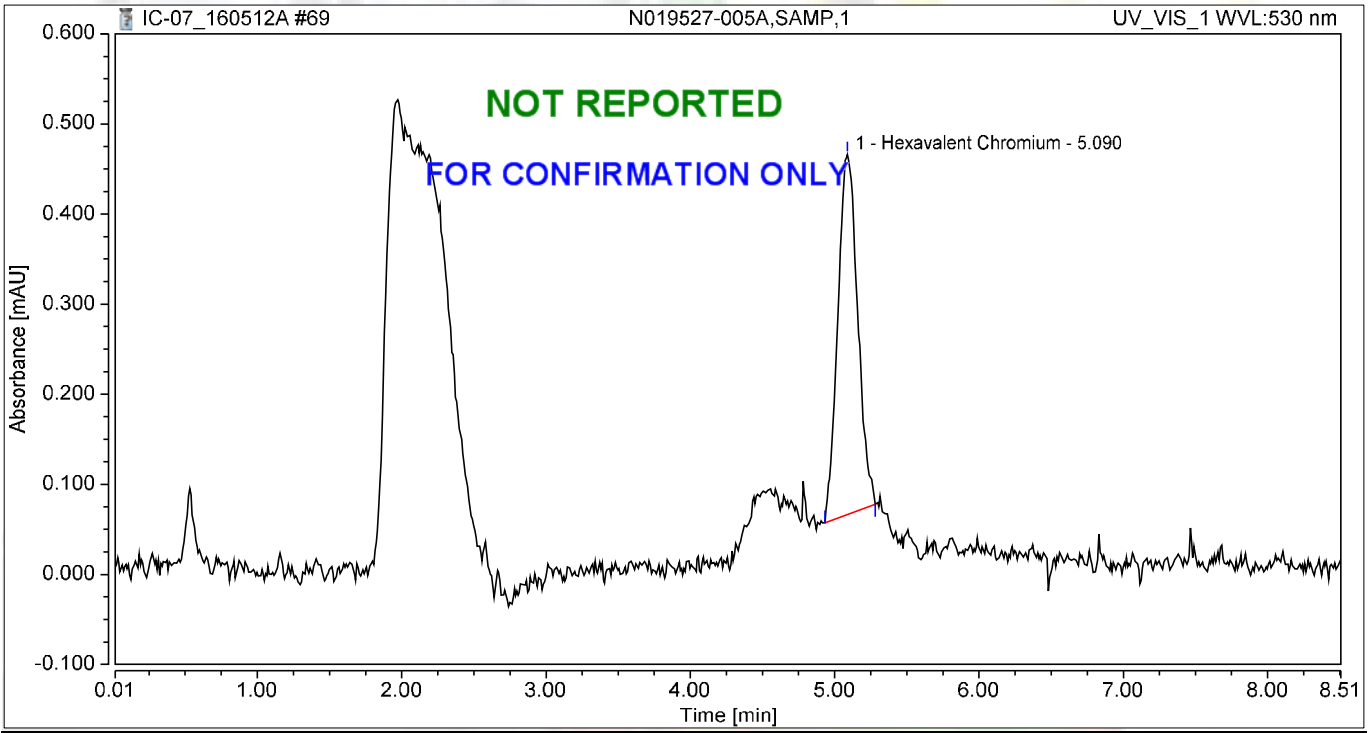
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.271	1.612	100.00	100.00	1.1512
Total:			**0.271**	**1.612**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019527-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

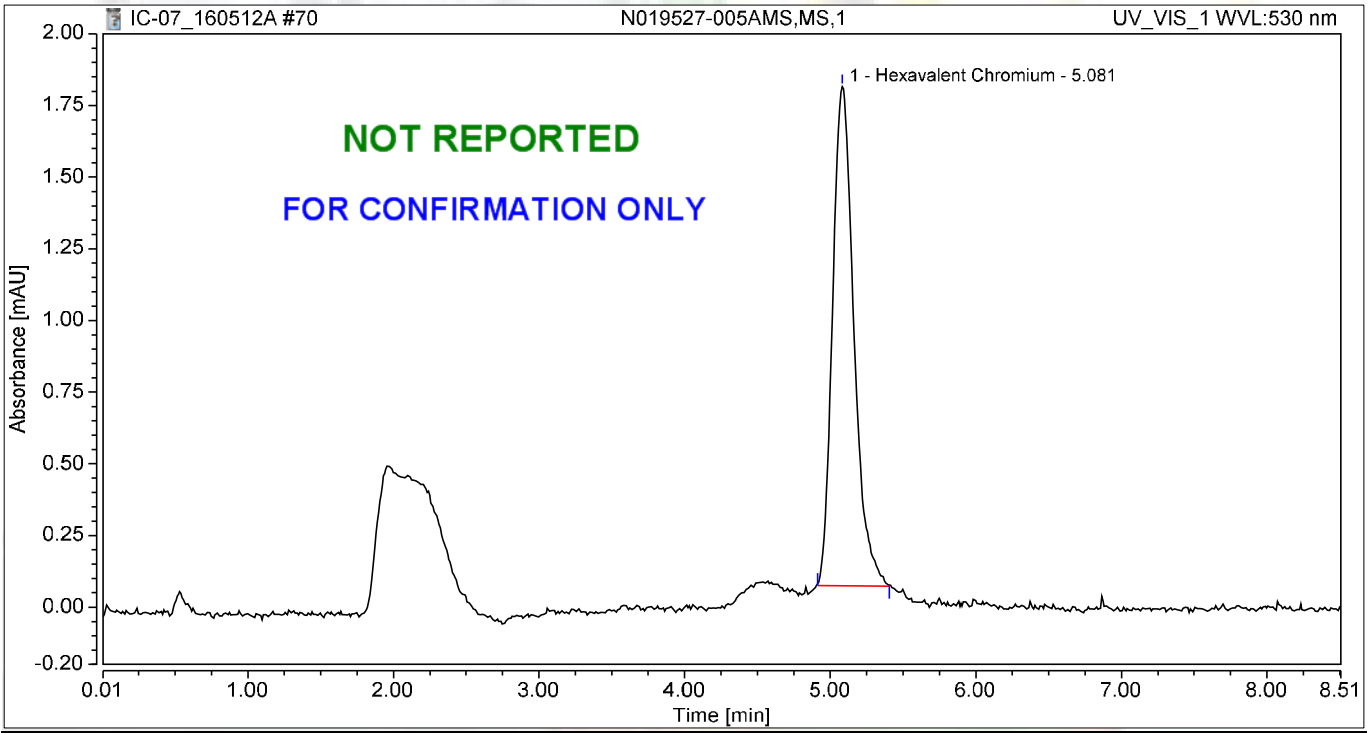
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.064	0.400	100.00	100.00	0.2711
Total:			**0.064**	**0.400**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019527-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

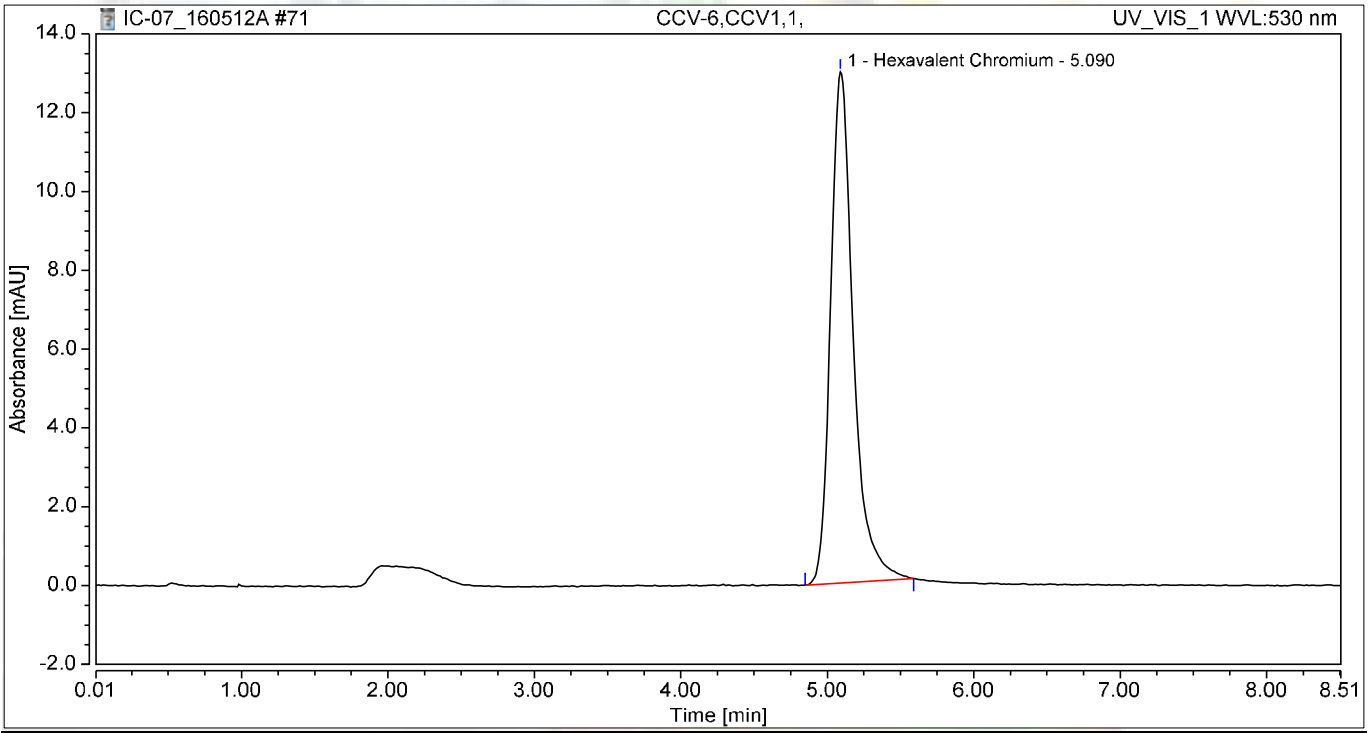
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.295	1.741	100.00	100.00	1.2535
Total:			**0.295**	**1.741**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 21:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

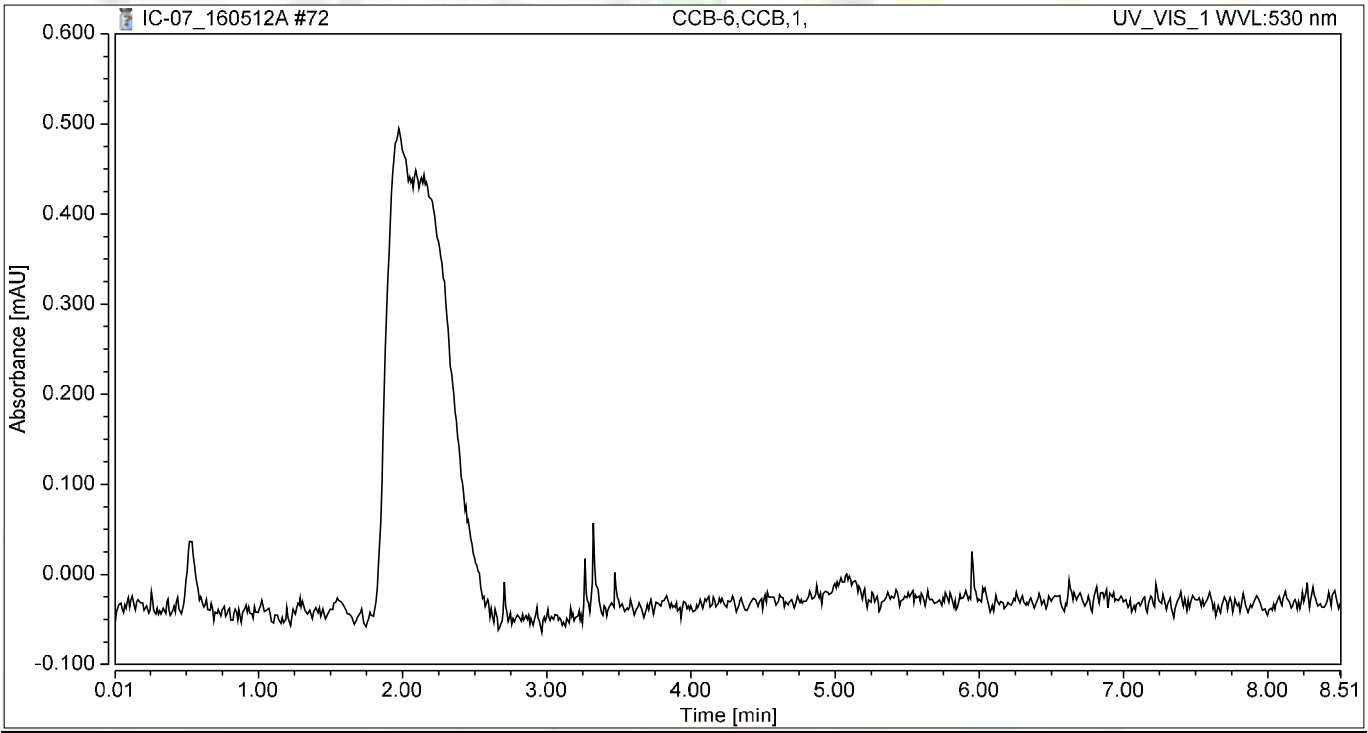
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.321	12.970	100.00	100.00	9.8597
Total:			**2.321**	**12.970**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 21:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

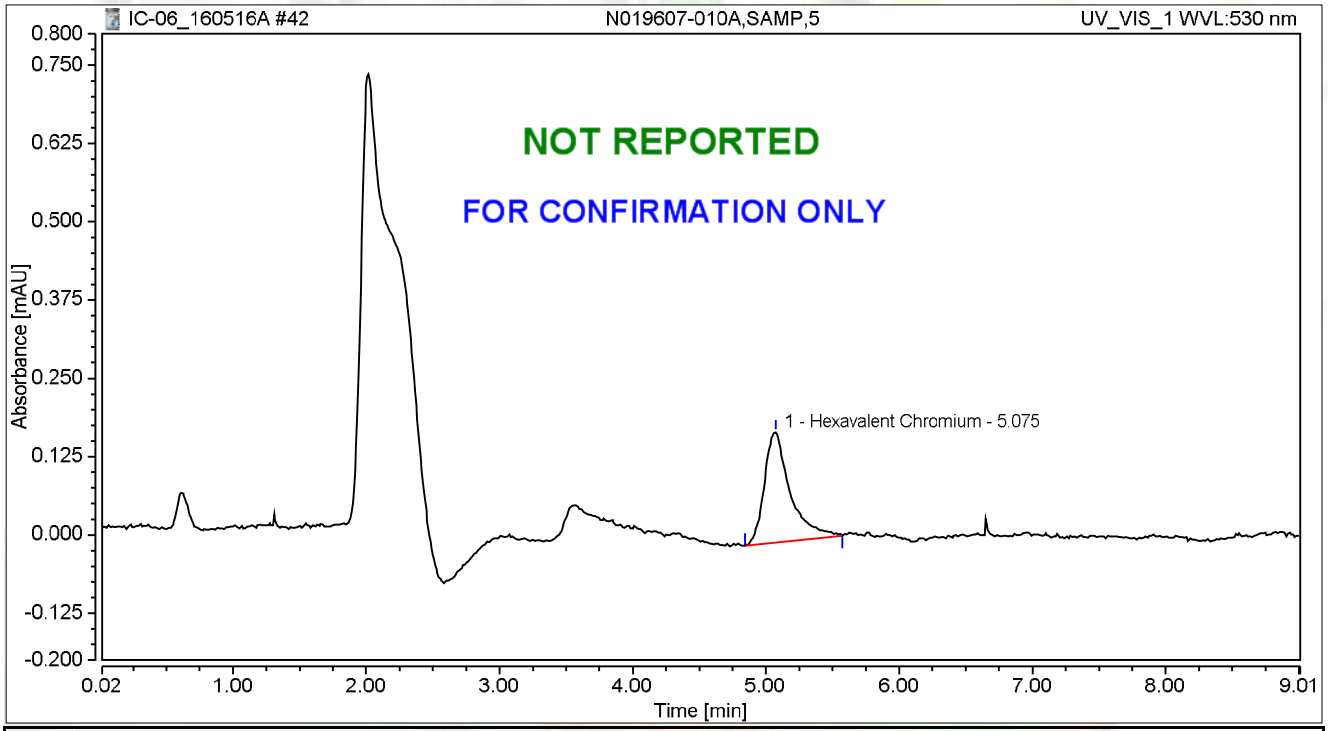
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

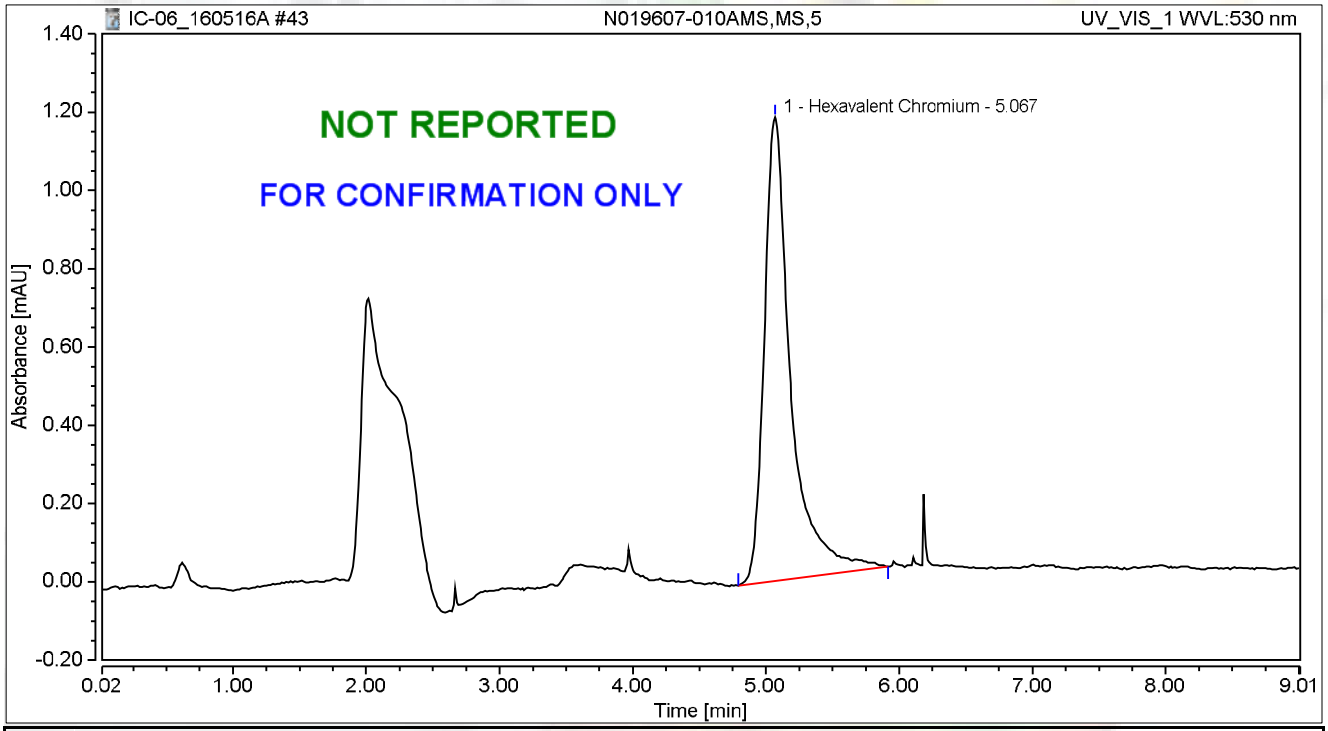
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.075	0.040	0.177	100.00	100.00	0.1532
Total:			**0.040**	**0.177**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

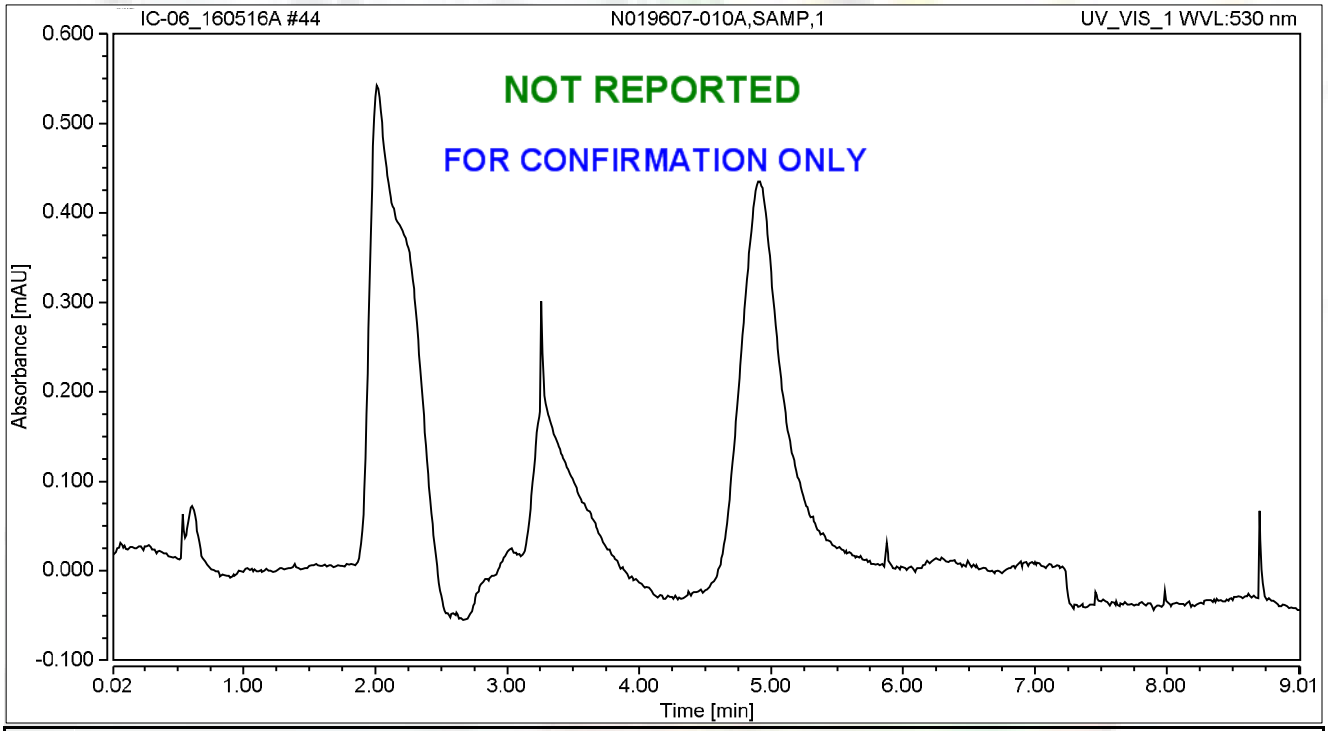
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.067	0.273	1.184	100.00	100.00	1.1504
Total:			**0.273**	**1.184**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

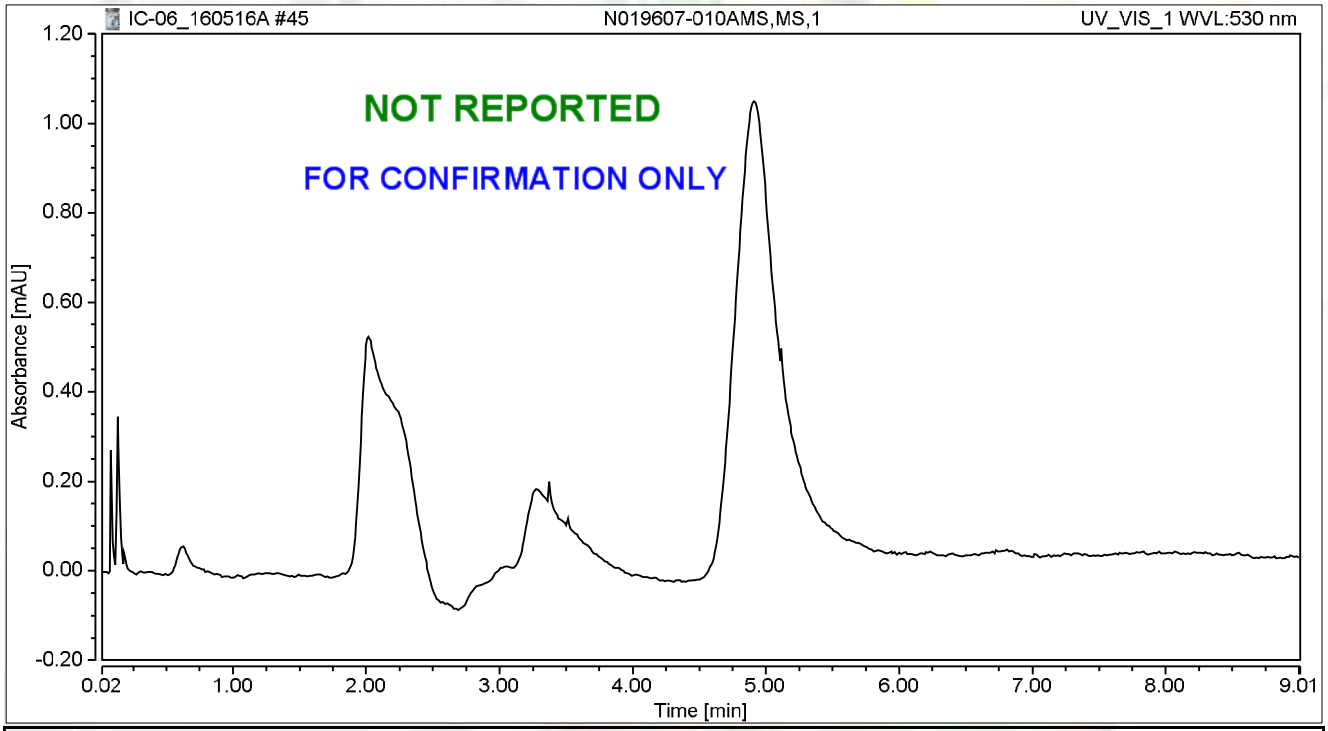
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/16 16:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108282 **Analyst:** QBM

ASSET #: N019544/N019606/N019607 **Date Analyzed:** 5/4/2016

Method: SM2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/13/2016

2nd Level Reviewer 5/18/2016 Date: _____

SAMPLE CALCULATION

Sample ID: **N019607-003D @ pH 7.56**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.875mL)

= **0.02105 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$, volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (5.85) (0.02105 N) (1) * 1000

=123.1425 **mg/L**

Reporting results in two significant figures,

= 120 **mg/L** as CaCO3

5/13/2016

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02105 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (6.20 mL) (0.02105) (1) * 1000

= 123.1425 **mg/L** as CaCO3

Where:

$P_{vol.}$ - volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 123.1425 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 120 **mg/L**

5/13/2016

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Alkalinity Preparation and Runlog

Book #5

Matrix: H_2O

Date Extracted: 5/11/16
Time Extracted: 5:15 PM
Extracted By: [illegible]

Date Analyzed: 5/11/16
Time Analyzed: 5:15 PM
Analyzed By: [illegible]

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-160125B
Hydrochloric Acid: —
Sulfuric Acid: H160308A
$NaHCO_3$: CINV-150601A

pH meter calibration: slope: 98.4%
pH 4 - 4.00 CINV-150825B
7 - 7.01 CINV-160309A
10 - 10.00 CINV-160111D

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.65	IWST160504A	5 mL	0.05 N	—	—	11.90	50/50	$N_{H_2SO_4} = \frac{(2.65\,g/L)(5\,mL)}{53\,(V_{titrant})}$	0.02105363 N
	#2	1	10.66	1	1	1	—	—	11.85	1		
1)	MBLK	50 mL	5.42	—	—	—	0.02105	0	0.05	50/50		
2)	LCS	1	8.32	IWST160504B	1mL	0.05 N	1	0	4.80	1		
3)	N0119544-001C	1	7.68	—	—	—	1	0	9.85	1		
4)	L 2C	1	7.45	—	—	—	1	0	7.10	1		
5)	N0119606-001D	1	7.54	—	—	—	1	0	6.20	1		
6)	L 2D	1	7.58	—	—	—	1	0	4.30	1		
7)	L 3D	1	7.53	—	—	—	1	0	4.30	1		
8)	N0119607-001D	1	7.56	—	—	—	1	0	5.65	1		
9)	N0119613-001A	1	7.64	—	—	—	1	0	9.80	1		
10)	L 2A	1	7.32	—	—	—	1	0	6.95	1		
11)	N0119606-002DMF	1	7.52	—	—	—	1	0	4.30	1		
12)	N0119606-001DMS	1	7.82	IWST160504B	1mL	0.05N	1	0	10.75	1		
13)	L MSD	1	7.84	1	1	1	1	0	10.80	1		
14)												
15)												
16)				P							$\frac{(V_{pH\,8.3})(N_{H_2SO_4})(50{,}000)}{V_{S\times}}$	
17)												
18)												
19)												
20)				T							$\frac{(V_{pH\,4.5})(N_{H_2SO_4})(50{,}000)}{V_{S\times}}$	
	MS											
	MSD											
	LCS											

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.42	50	0.00	0.05	MBLK
LCS-1	8.32	50	0.00	4.80	LCS
N019544-001C	7.68	50	0.00	9.85	SAMP
N019544-002C	7.45	50	0.00	7.10	SAMP
N019606-001D	7.54	50	0.00	6.20	SAMP
N019606-002D	7.58	50	0.00	4.30	SAMP
N019606-003D	7.53	50	0.00	4.30	SAMP
N019607-003D	7.56	50	0.00	5.85	SAMP
N019613-001A	7.64	50	0.00	9.80	SAMP
N019613-002A	7.32	50	0.00	6.95	SAMP
N019606-002DDUP	7.52	50	0.00	4.30	DUP
N019606-001DMS	7.82	50	0.00	10.75	MS
N019606-001DMSD	7.84	50	0.00	10.80	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.875**	ml
N H2SO4	**0.02105**	Normal
Date Analyzed:	**5/4/16**	
Time:	**4:50 PM**	
Analyzed By:	**QBM**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R160308A**	

Date Analyzed:	5/4/16		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	4:50 PM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**QBM**			Hydrochloric Acid:		0			Titrant used:	11.875	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R160308A							**P > 1/2 T**
									N H2SO4	0.02105	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.42				0.02105	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.32				0.02105	0.00	4.80	4.80	1	0.00	101.05	
N019544-001C	50	7.68				0.02105	0.00	9.85	9.85	1	0.00	207.37	
N019544-002C	50	7.45				0.02105	0.00	7.10	7.10	1	0.00	149.47	
N019606-001D	50	7.54				0.02105	0.00	6.20	6.20	1	0.00	130.53	
N019606-002D	50	7.58				0.02105	0.00	4.30	4.30	1	0.00	90.53	
N019606-003D	50	7.53				0.02105	0.00	4.30	4.30	1	0.00	90.53	
N019607-003D	50	7.56				0.02105	0.00	5.85	5.85	1	0.00	123.16	
N019613-001A	50	7.64				0.02105	0.00	9.80	9.80	1	0.00	206.32	
N019613-002A	50	7.32				0.02105	0.00	6.95	6.95	1	0.00	146.32	
N019606-002DDU	50	7.52				0.02105	0.00	4.30	4.30	1	0.00	90.53	
N019606-001DMS	50	7.82				0.02105	0.00	10.75	10.75	1	0.00	226.32	
N019606-001DMS	50	7.84				0.02105	0.00	10.80	10.80	1	0.00	227.37	

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	5/4/16
Time:	4:50 PM
Analyzed By:	QBM

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	0.00	101.05	101.05	101.05		P = 0
N019544-001C	0.00	0.00	207.37	207.37	207.37		P = 0
N019544-002C	0.00	0.00	149.47	149.47	149.47		P = 0
N019606-001D	0.00	0.00	130.53	130.53	130.53		P = 0
N019606-002D	0.00	0.00	90.53	90.53	90.53		P = 0
N019606-003D	0.00	0.00	90.53	90.53	90.53		P = 0
N019607-003D	0.00	0.00	123.16	123.16	123.16		P = 0
N019613-001A	0.00	0.00	206.32	206.32	206.32		P = 0
N019613-002A	0.00	0.00	146.32	146.32	146.32		P = 0
N019606-002DDUP	0.00	0.00	90.53	90.53	90.53		P = 0
N019606-001DMS	0.00	0.00	226.32	226.32	226.32		P = 0
N019606-001DMSD	0.00	0.00	227.37	227.37	227.37		P = 0

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108466
ASSET #: N019591 / N019592 / N019606 / N019607 / N019610

Instrument ID: IC2
Analyst: QBM
Date Analyzed: 5/9/2016

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/17/2016

2nd Level Reviewer Nancy 5/18/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N019607-003D** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 5.35 * 50

= 267.5

Reporting result in two significant values,

Sulfate, mg/L = 270

ANALYSIS RUN LOG

DIONEX SCHEDULE - C:\DX\SCHEDULE\160418.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160418.M	..\16041801.D01	1	1	1
2	,BLANK,	..\160418.M	..\16041801.D02	1	1	1
3	AUTOCAL1R	..\160418.M	..\16041801.D03	1	1	1
4	AUTOCAL2R	..\160418.M	..\16041801.D04	1	1	1
5	AUTOCAL3R	..\160418.M	..\16041801.D05	1	1	1
6	AUTOCAL4R	..\160418.M	..\16041801.D06	1	1	1
7	AUTOCAL5R	..\160418.M	..\16041801.D07	1	1	1
8	AUTOCAL6R	..\160418.M	..\16041801.D08	1	1	1
9	,ICV,ICV,1,	..\160418.M	..\16041801.D09	1	1	1
10	,ICB,ICB,1,	..\160418.M	..\16041801.D10	1	1	1
11	,MB-H2O,MBLK,1,	..\160418.M	..\16041801.D11	1	1	1
12	,LCS-H2O,LCS,1,	..\160418.M	..\16041801.D12	1	1	1
13	,N019419-020C,SAMP,	..\160418.M	..\16041801.D13	1	1	1
14	,N019431-006C,SAMP,	..\160418.M	..\16041801.D14	1	1	1
15	,N019431-006CDUP,DU	..\160418.M	..\16041801.D15	1	1	1
16	,N019431-015C,SAMP,	..\160418.M	..\16041801.D16	1	1	1
17	,N019431-015CMS,MS,	..\160418.M	..\16041801.D17	1	1	1
18	,N019431-015CMSD,MS	..\160418.M	..\16041801.D18	1	1	1
19	,N019432-002C,SAMP,	..\160418.M	..\16041801.D19	1	1	1
20	,N019432-003C,SAMP,	..\160418.M	..\16041801.D20	1	1	1
21	,CCV-1,CCV,1,	..\160418.M	..\16041801.D21	1	1	1
22	,CCB-1,CCB,1,	..\160418.M	..\16041801.D22	1	1	1
23	,N019419-020C,SAMP,	..\160418.M	..\16041801.D23	1	1	1
24	,N019432-004C,SAMP,	..\160418.M	..\16041801.D24	1	1	1
25	,N019432-004CMS,MS,	..\160418.M	..\16041801.D25	1	1	1
26	,N019432-005C,SAMP,	..\160418.M	..\16041801.D26	1	1	1
27	,N019432-006C,SAMP,	..\160418.M	..\16041801.D27	1	1	1
28	,N019432-007C,SAMP,	..\160418.M	..\16041801.D28	1	1	1
29	,N019432-008C,SAMP,	..\160418.M	..\16041801.D29	1	1	1
30	,N019432-009C,SAMP,	..\160418.M	..\16041801.D30	1	1	1
31	,N019432-015C,SAMP,	..\160418.M	..\16041801.D31	1	1	1
32	,N019433-001C,SAMP,	..\160418.M	..\16041801.D32	1	1	1
33	,CCV-2,CCV,1,	..\160418.M	..\16041801.D33	1	1	1
34	,CCB-2,CCB,1,	..\160418.M	..\16041801.D34	1	1	1
35	,N019433-007C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
36	,N019433-008C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
37	,N019433-009C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
38	,N019447-007D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
39	,N019447-008D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
40	,N019447-009D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
41	,CCV-3,CCV,1,	..\160418.M	..\16041801.D01	1	1	1
42	,CCB-3,CCB,1,	..\160418.M	..\16041801.D01	1	1	1
43	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

4/21/2016

DIONEX SCHEDULE - C:\DX\SCHEDULE\160509.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160418.M	..\16050901.D01	1	1	1
2	,CCV-1,CCV,1,	..\160418.M	..\16050901.D02	1	1	1
3	,CCB-1,CCB,1,	..\160418.M	..\16050901.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\160418.M	..\16050901.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\160418.M	..\16050901.D05	1	1	1
6	,N019591-001C,SAMP,	..\160418.M	..\16050901.D06	1	1	1
7	,N019591-002C,SAMP,	..\160418.M	..\16050901.D07	1	1	1
8	,N019591-009C,SAMP,	..\160418.M	..\16050901.D08	1	1	1
9	,N019591-010C,SAMP,	..\160418.M	..\16050901.D09	1	1	1
10	,N019591-011C,SAMP,	..\160418.M	..\16050901.D10	1	1	1
11	,N019591-012C,SAMP,	..\160418.M	..\16050901.D11	1	1	1
12	,N019591-002CMS,MS,	..\160418.M	..\16050901.D12	1	1	1
13	,N019591-002CMSD,MS	..\160418.M	..\16050901.D13	1	1	1
14	,CCV-2,CCV,1,	..\160418.M	..\16050901.D14	1	1	1
15	,CCB-2,CCB,1,	..\160418.M	..\16050901.D15	1	1	1
16	,N019606-001D,SAMP,	..\160418.M	..\16050901.D16	1	1	1
17	,N019606-001DDUP,DU	..\160418.M	..\16050901.D17	1	1	1
18	,N019606-002D,SAMP,	..\160418.M	..\16050901.D18	1	1	1
19	,N019606-003D,SAMP,	..\160418.M	..\16050901.D19	1	1	1
20	,N019607-003D,SAMP,	..\160418.M	..\16050901.D20	1	1	1
21	,N019607-003DMS,MS,	..\160418.M	..\16050901.D21	1	1	1
22	,N019607-003DMSD,MS	..\160418.M	..\16050901.D22	1	1	1
23	,N019606-001D,SAMP,	..\160418.M	..\16050901.D23	1	1	1
24	,N019606-002D,SAMP,	..\160418.M	..\16050901.D24	1	1	1
25	,N019606-003D,SAMP,	..\160418.M	..\16050901.D25	1	1	1
26	,CCV-3,CCV,1,	..\160418.M	..\16050901.D26	1	1	1
27	,CCB-3,CCB,1,	..\160418.M	..\16050901.D27	1	1	1
28	,N019607-003D,SAMP,	..\160418.M	..\16050901.D28	1	1	1
29	,N019610-009C,SAMP,	..\160418.M	..\16050901.D29	1	1	1
30	,N019610-009CDUP,DU	..\160418.M	..\16050901.D30	1	1	1
31	,N019610-010C,SAMP,	..\160418.M	..\16050901.D31	1	1	1
32	,N019591-013C,SAMP,	..\160418.M	..\16050901.D32	1	1	1
33	,N019591-014C,SAMP,	..\160418.M	..\16050901.D33	1	1	1
34	,N019591-015C,SAMP,	..\160418.M	..\16050901.D34	1	1	1
35	,N019592-001C,SAMP,	..\160418.M	..\16050901.D35	1	1	1
36	,N019592-004C,SAMP,	..\160418.M	..\16050901.D36	1	1	1
37	,N019592-005C,SAMP,	..\160418.M	..\16050901.D37	1	1	1
38	,CCV-4,CCV,1,	..\160418.M	..\16050901.D38	1	1	1
39	,CCB-4,CCB,1,	..\160418.M	..\16050901.D39	1	1	1
40	,N019592-006C,SAMP,	..\160418.M	..\16050901.D40	1	1	1
41	,N019592-006CMS,MS,	..\160418.M	..\16050901.D41	1	1	1
42	,N019592-007C,SAMP,	..\160418.M	..\16050901.D42	1	1	1
43	,N019606-001D,SAMP,	..\160418.M	..\16050901.D43	1	1	1
44	,N019606-001DMS,MS,	..\160418.M	..\16050901.D44	1	1	1
45	,N019606-001DMSD,MS	..\160418.M	..\16050901.D45	1	1	1
46	,N019606-002D,SAMP,	..\160418.M	..\16050901.D46	1	1	1
47	,N019606-003D,SAMP,	..\160418.M	..\16050901.D47	1	1	1
48	,N019607-003D,SAMP,	..\160418.M	..\16050901.D48	1	1	1
49	,CCV-5,CCV,1,	..\160418.M	..\16050901.D49	1	1	1
50	,CCB-5,CCB,1,	..\160418.M	..\16050901.D50	1	1	1
51	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

5/17/2016

INITIAL CALIBRATION DATA SUMMARY

DIONEX METHOD PARAMETERS - 160418.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS

Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\14120201.D02

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

4/21/2016

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

4/21/2016

Component Table -- Last Modified: 11:34 on Mon, 18 Apr 2016

Component # 1 Fluoride Retention Time 2.53
Reference Comp. Fluoride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 1.96604E-002
K1 = 2.75525E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	21804	2420
3	5.00000E-001	176562	18677
4	1.00000E+000	340825	37434
5	2.50000E+000	885332	103067
6	5.00000E+000	1817297	221045

Component # 2 Chloride Retention Time 3.77
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.72865E-002
K1 = 3.73331E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	123564	13717
3	1.00000E+000	255623	26807
4	2.50000E+000	629433	71108
5	5.00000E+000	1294953	149595
6	1.00000E+001	2677600	327188

Component # 3 Nitrite Retention Time 4.59
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.51829E-002
K1 = 2.03122E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	26388	2305
3	5.00000E-001	238401	20080
4	1.00000E+000	464414	39654
5	2.50000E+000	1223706	108966
6	5.00000E+000	2457690	228709

Component # 4 Bromide Retention Time 5.56
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -6.25288E-002
K1 = 8.99369E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	20924	1945
3	5.00000E-001	71851	4996
4	1.00000E+000	121564	9309
5	2.50000E+000	293667	24471
6	5.00000E+000	556648	49106

4/21/2016

Component # 5 Nitrate Retention Time 6.29
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.81800E-002
K1 = 1.49417E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	37518	2737
3	5.00000E-001	326026	23702
4	1.00000E+000	630623	48352
5	2.50000E+000	1641516	132850
6	5.00000E+000	3348176	278990

Component # 6 Phosphate Retention Time 8.30
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = -4.16125E-002
K1 = 4.34400E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	22593	1464
3	5.00000E-001	124124	6708
4	1.00000E+000	268719	13127
5	2.50000E+000	580416	34073
6	5.00000E+000	1156467	69715

Component # 7 Sulfate Retention Time 9.48
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.23779E-001
K1 = 5.14729E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	101897	5288
3	2.00000E+000	369925	20046
4	5.00000E+000	913040	51522
5	1.00000E+001	1859900	108154
6	2.00000E+001	3896340	233845

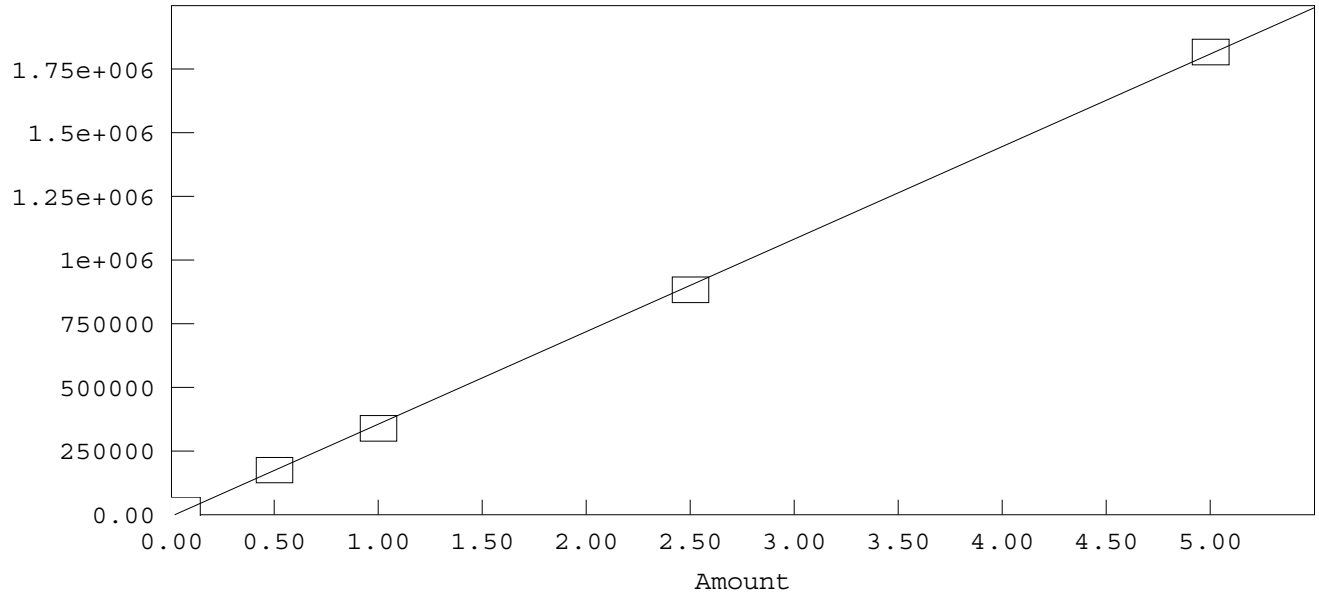
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

4/21/2016

Method: 160418.MET - Last Updated: 11:34 on Mon, 18 Apr 2016

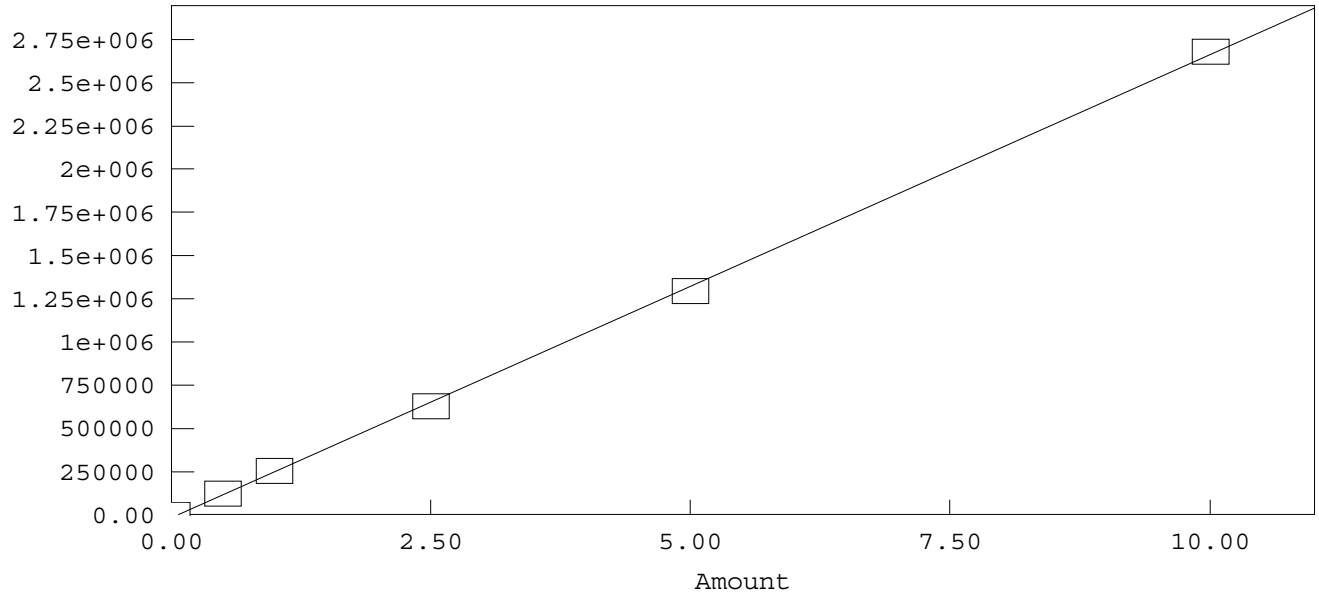
Component: Fluoride
Fit Type: Linear
r^2 = 0.999713
Amt = Resp * 2.755e-006 + 0.01966
Resp = Amt * 3.629e+005 + -7136
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

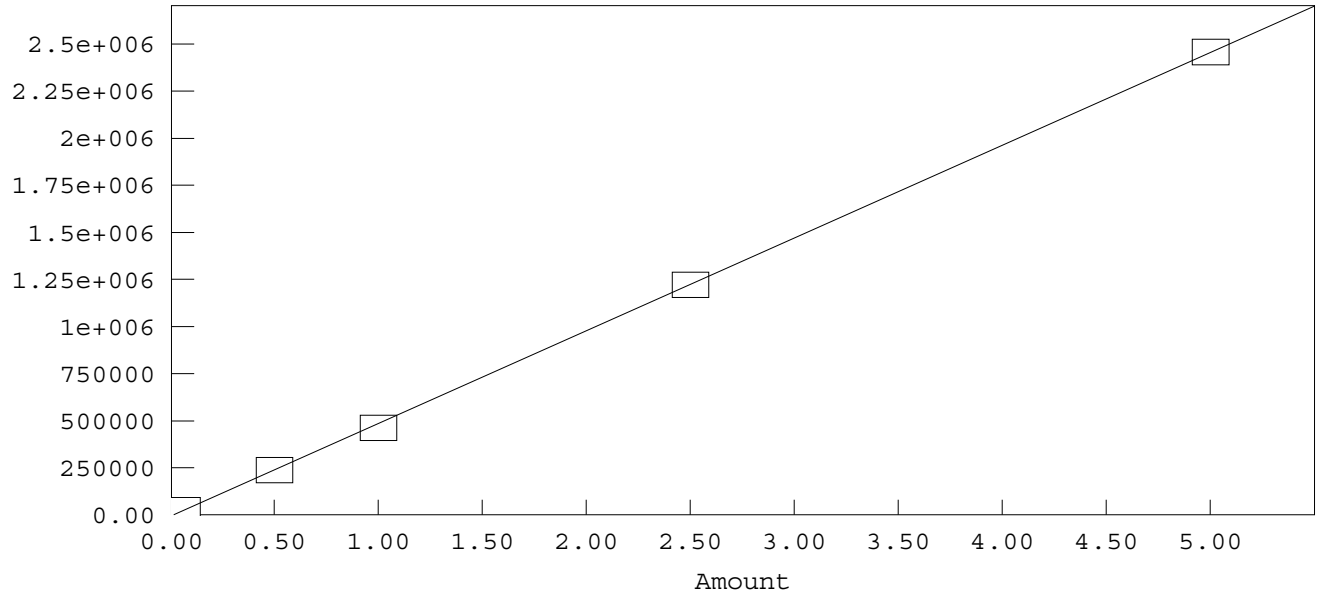
Component: Chloride
Fit Type: Linear
r^2 = 0.999635
Amt = Resp * 3.733e-006 + 0.06729
Resp = Amt * 2.679e+005 + -1.802e+004
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

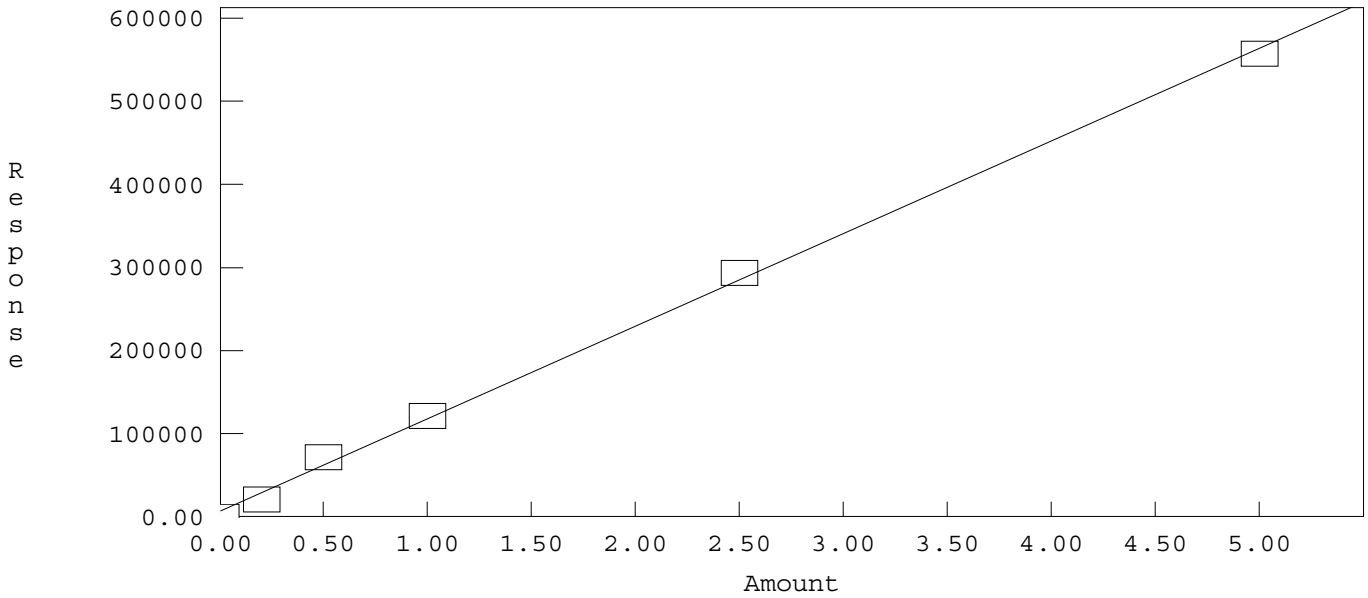
Component: Nitrite
Fit Type: Linear
r² = 0.999875
Amt = Resp * 2.031e-006 + 0.01518
Resp = Amt * 4.923e+005 + -7475
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

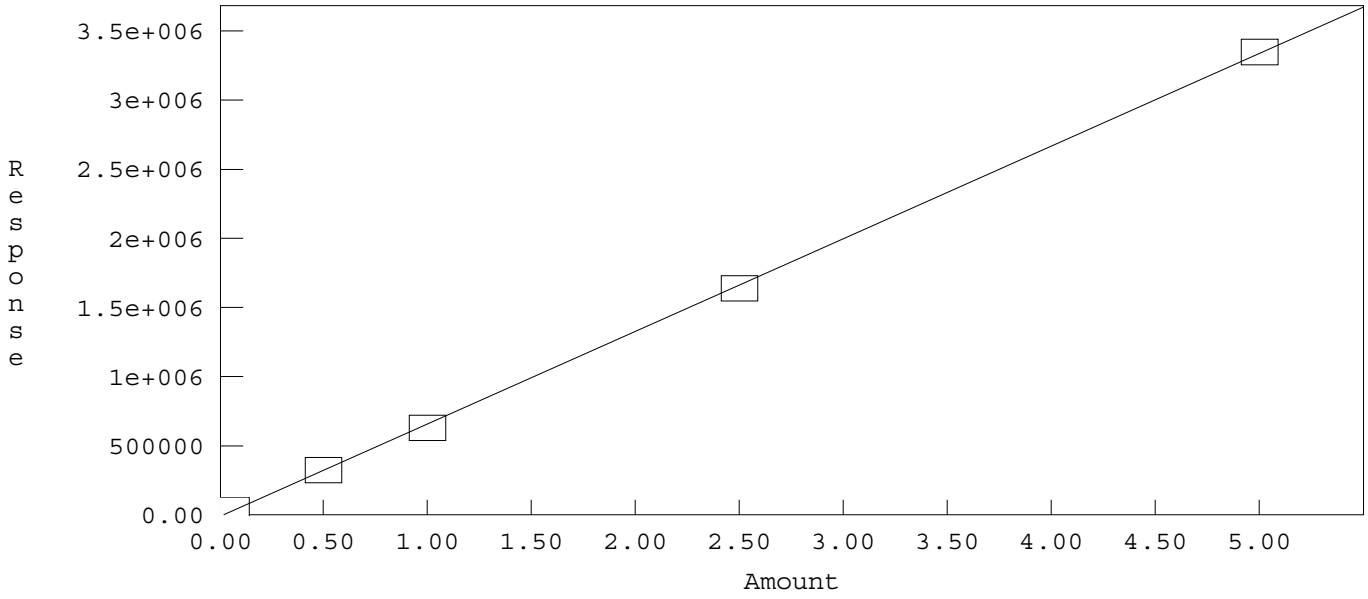
Component: Bromide
Fit Type: Linear
r² = 0.998550
Amt = Resp * 8.994e-006 + -0.06253
Resp = Amt * 1.112e+005 + 6953
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

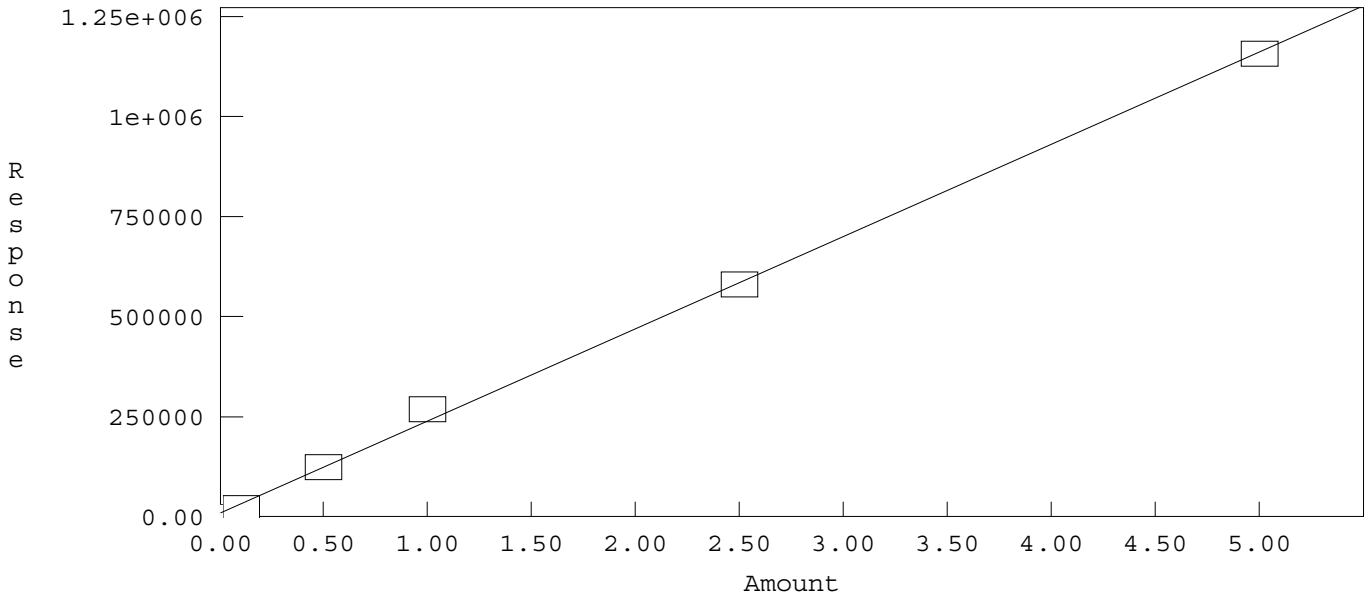
Component: Nitrate
Fit Type: Linear
r^2 = 0.999799
Amt = Resp * 1.494e-006 + 0.01818
Resp = Amt * 6.693e+005 + -1.217e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

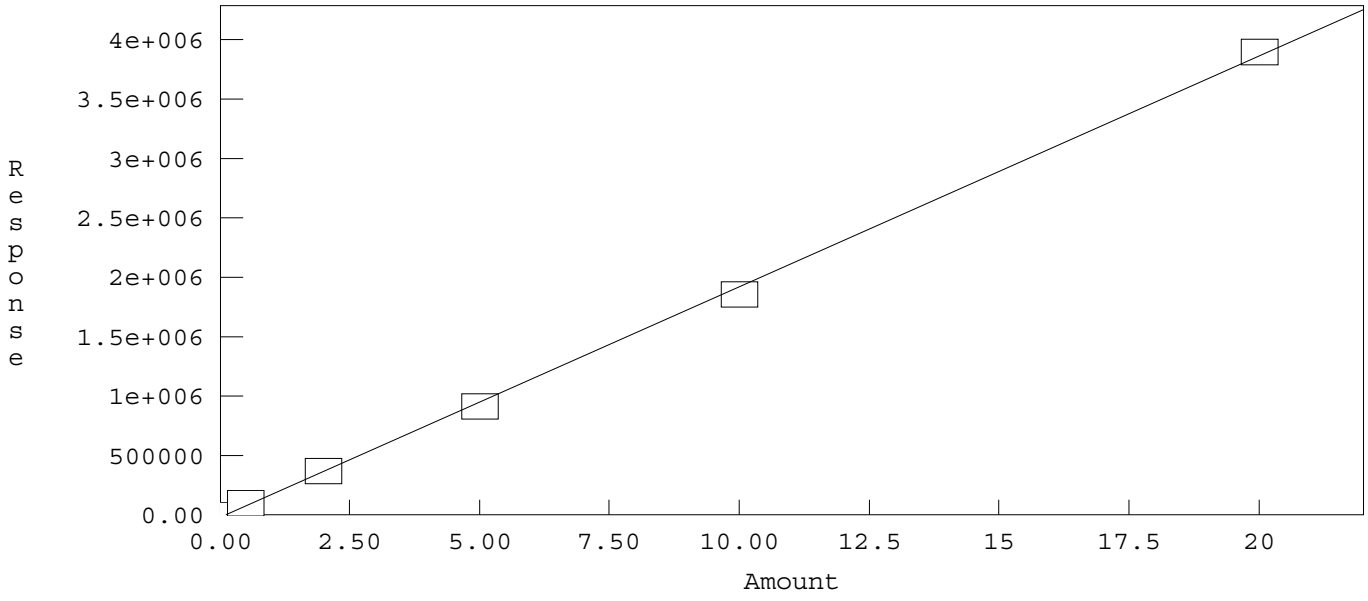
Component: Phosphate
Fit Type: Linear
r^2 = 0.998922
Amt = Resp * 4.344e-006 + -0.04161
Resp = Amt * 2.302e+005 + 9579
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999345
Amt = Resp * 5.147e-006 + 0.1238
Resp = Amt * 1.943e+005 + -2.405e+004
Standardization: External
Calibration: Area



4/21/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.328	0.50	2.500	0	93.1	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.609	0.50	2.500	0	104	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.445	0.50	2.500	0	97.8	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.336	0.50	2.500	0	93.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.650	0.50	2.500	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.306	0.50	2.500	0	92.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.437	0.50	2.500	0	97.5	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.516	0.50	2.500	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.467	0.50	2.500	0	98.7	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.400	0.50	2.500	0	96.0	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.485	0.50	2.500	0	99.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.380	0.50	2.500	0	95.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.815	0.50	5.000	0	96.3	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.039	0.50	5.000	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.900	0.50	5.000	0	98.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.803	0.50	5.000	0	96.1	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.791	0.50	5.000	0	95.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCV**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.783	0.50	5.000	0	95.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **ICB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2326770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/9/2016**	SeqNo: **2326780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108466**
Client ID: **CCB**	Batch ID: **R108466**	TestNo: **EPA 300.0**		Analysis Date: **5/10/2016**	SeqNo: **2326788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 5/9/2016

Sample Name		Retention Time	Evaluation
CCV-1	Bromide	5.69	
CCV-2	Bromide	5.69	
CCV-3	Bromide	5.68	
CCV-4	Bromide	5.59	
CCV-5	Bromide	5.56	
	Average	5.642	
	Lower Limit	5.442	
	Upper Limit	5.842	
MB-R108466_BR	Bromide	0	N.A
LCS-R108466_BR	Bromide	5.75	PASS
N019606-001DDUP	Bromide	5.7	PASS
N019607-003D	Bromide	5.73	PASS
N019607-003DMS	Bromide	5.63	PASS
N019607-003DMSD	Bromide	5.69	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 5/9/2016

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.83	
CCV-2	Chloride	3.83	
CCV-3	Chloride	3.83	
CCV-4	Chloride	3.77	
CCV-5	Chloride	3.75	
	Average	3.802	
	Lower Limit	3.602	
	Upper Limit	4.002	
MB-R108466_CL	Chloride	0	N.A
LCS-R108466_CL	Chloride	3.85	PASS
N019591-002CMS	Chloride	3.81	PASS
N019591-002CMSD	Chloride	3.79	PASS
N019592-006CMS	Chloride	3.75	PASS
N019610-009CDUP	Chloride	3.82	PASS
N019607-003D	Chloride	3.8	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 5/9/2016

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.45	
CCV-2	Sulfate	9.4	
CCV-3	Sulfate	9.4	
CCV-4	Sulfate	9.33	
CCV-5	Sulfate	9.38	
	Average	9.392	
	Lower Limit	9.192	
	Upper Limit	9.592	
MB-R108466_SO4	Sulfate	0	N.A
LCS-R108466_SO4	Sulfate	9.5	PASS
N019606-001DMS	Sulfate	9.31	PASS
N019606-001DMSD	Sulfate	9.33	PASS
N019607-003D	Sulfate	9.35	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108544, R108546 **Analyst:** REB

ASSET #: N019607 **Date Analyzed:** 5/16/2016, 5/17/2016

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Reb 05/18/2016 Date: —

2nd Level Reviewer Mmy 5/19/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N019607-001C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.1715*1

= 0.1715 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.17

Reb 05/18/2016

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

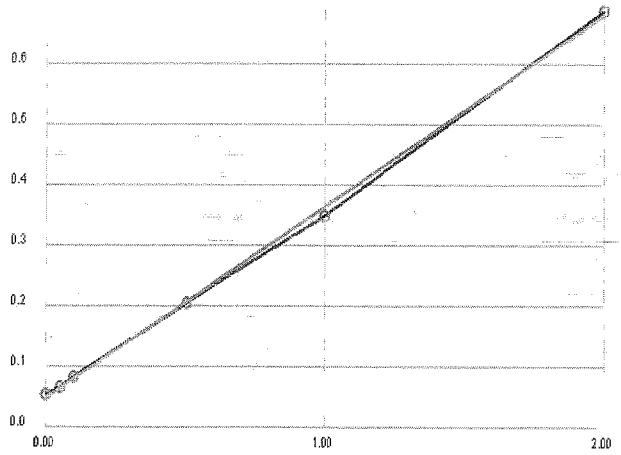
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3152x + 0.0488
Correlation	.99948

Calibrant	Energy	Set	Conc
1	0.0533	0.0000	0.0142
2	0.0665	0.0500	0.0560
3	0.0823	0.1000	0.1062
4	0.2056	0.5000	0.4974
5	0.3489	1.0000	0.9521
6	0.6868	2.0000	2.0242



Notes:

2% CuSO4 - R160507A
R1 Buffer- R160507B
R2 Coloring Rgt. - R160507C

1° std- ISST-160211J
2° std- ISST-150730E

Reb 05/18/2016

441

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

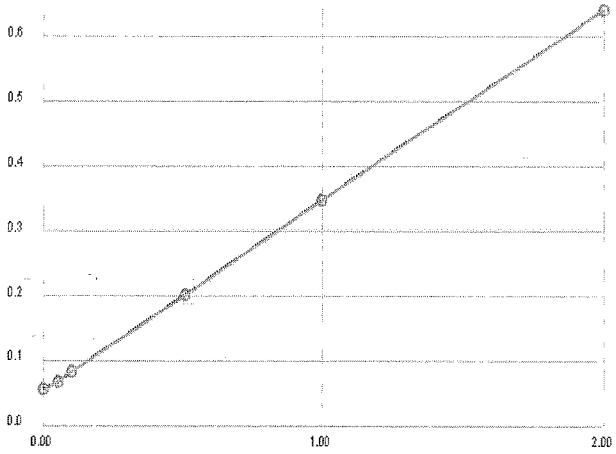
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2936x + 0.0545
Correlation	.999986

Calibrant	Energy	Set	Conc
1	0.0564	0.0000	0.0065
2	0.0673	0.0500	0.0436
3	0.0836	0.1000	0.0991
4	0.2016	0.5000	0.5011
5	0.3479	1.0000	0.9994
6	0.6417	2.0000	2.0002

Notes:

Reb 05/18/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108544**
Client ID: **ICV**	Batch ID: **R108544**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2016**	SeqNo: **2331302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108544**
Client ID: **CCV**	Batch ID: **R108544**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2016**	SeqNo: **2331314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.513	0.050	0.5000	0	103	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108544**
Client ID: **CCV**	Batch ID: **R108544**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2016**	SeqNo: **2331326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.483	0.050	0.5000	0	96.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **ICV**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.7	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **CCV**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.518	0.050	0.5000	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108544**
Client ID: **ICB**	Batch ID: **R108544**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2016**	SeqNo: **2331303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108544**
Client ID: **CCB**	Batch ID: **R108544**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2016**	SeqNo: **2331315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108544**
Client ID: **CCB**	Batch ID: **R108544**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2016**	SeqNo: **2331327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **ICB**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** 1	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108546**
Client ID: **CCB**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2331377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 5/19/2016
for

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-16-2016 16:56
Time end: 05-16-2016 19:47

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	19:07:32	0.0389		0.0611
2	<BLANK>	19:08:32	0.0205		0.0553
3	<CAL1>	19:09:26	0.0142	[0]	0.0533
4	<CAL2>	19:10:22	0.0560	[0.05]	0.0665
5	<CAL3>	19:11:23	0.1062	[0.1]	0.0823
6	<CAL4>	19:12:17	0.4974	[0.5]	0.2056
7	<CAL5>	19:13:13	0.9521	[1]	0.3489
8	<CAL6>	19:14:14	2.0242	[2]	0.6868
9	,BLANK,BLANK,1,	19:15:10	0.0310		0.0586
10	,ICV,ICV,1,	19:16:04	0.4993		0.2062
11	,ICB,ICB,1,	19:17:05	0.0164		0.0540
12	,MB-H2O,MBLK,1,	19:18:00	0.0113		0.0524
13	,LCS-H2O,LCS,1,	19:19:01	0.4974		0.2056
14	,N019607-001C,SAMP,1,	19:19:56	0.1715		0.1029
15	,N019607-001CDUP,DUP,1,	19:20:52	0.1820		0.1062
16	,N019607-001CMS,MS,1,	19:21:47	0.6855		0.2649
17	,N019607-001CMSD,MSD,1,	19:22:47	0.7296		0.2788
18	,N019607-002C,SAMP,20,	19:23:43	0.8984		0.3320
19	,N019607-003C,SAMP,20,	19:24:38	0.5412		0.2194
20	,N019607-005C,SAMP,1,	19:25:39	0.0440		0.0627
21	,BLANK,BLANK,1	19:26:34	0.0110		0.0523
22	,CCV-1,CCV,1,	19:27:35	0.5126		0.2104
23	,CCB-1,CCB,1,	19:28:31	0.0119		0.0526
24	,N019607-006C,SAMP,20,	19:29:31	0.0135		0.0531
25	,N019607-007C,SAMP,20,	19:30:26	0.5564		0.2242
26	,N019607-008C,SAMP,1,	19:31:22	0.0640		0.0690

NR

Reb 05/18/2016

				EPA 353.2 NO3 as N		
				ppm	Flags	OD
	27	,N019607-009C,SAMP,1,	19:32:10	0.0370		0.0605
NR	28	,N019607-010C,SAMP,50,	19:32:53	0.0395		0.0613
	29	,N019743-003B,SAMP,5,	19:33:43	0.1988		0.1115
	30	,N019743-006B,SAMP,50,	19:34:25	0.8093		0.3039
	31	,N019744-001C,SAMP,1,	19:35:08	0.1538		0.0973
	32	,N019744-003C,SAMP,5,	19:35:56	0.0395		0.0613
	33	,BLANK,BLANK,1	19:36:40	0.0024		0.0496
	34	,CCV-2,CCV,1,	19:37:28	0.4828		0.2010
	35	,CCB-2,CCB,1,	19:38:11	0.0059		0.0507
	36	,N019744-004C,SAMP,1,	19:38:53	0.1065		0.0824
	37	,N019744-005C,SAMP,1,	19:39:42	0.0697		0.0708
	38	,N019744-006C,SAMP,5,	19:40:25	0.0890		0.0769
	39	,N019755-007C,SAMP,5,	19:41:07	0.3007		0.1436
NR	40	,N019744-008C,SAMP,5,	19:41:57	0.8930		0.3303
	41	,N019748-001E,SAMP,5,	19:42:39	0.1239		0.0879
	42	,N019744-002B,SAMP,10,	19:43:22	0.0462		0.0634
	43	,BLANK,BLANK,1	19:44:10	-0.0080		0.0463
	44	,CCV-3,CCV,1,	19:44:53	0.4063		0.1769
	45	,CCB-3,CCB,1,	19:45:37	-0.0033		0.0478

Reb 05/18/2016

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-17-2016 15:09
Time end: 05-17-2016 17:36

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:02:56	0.0205		0.0605
2	<BLANK>	17:03:57	0.0143		0.0587
3	<CAL1>	17:04:51	0.0065	[0]	0.0564
4	<CAL2>	17:05:52	0.0436	[0.05]	0.0673
5	<CAL3>	17:06:48	0.0991	[0.1]	0.0836
6	<CAL4>	17:07:49	0.5011	[0.5]	0.2016
7	<CAL5>	17:08:43	0.9994	[1]	0.3479
8	<CAL6>	17:09:39	2.0002	[2]	0.6417
9	,BLANK,BLANK,1,	17:10:34	0.0269		0.0624
10	,ICV,ICV,1,	17:11:34	0.4837		0.1965
11	,ICB,ICB,1,	17:12:29	0.0102		0.0575
12	,MB-H2O,MBLK,1,	17:13:31	-0.0061		0.0527
13	,LCS-H2O,LCS,1,	17:14:26	0.4861		0.1972
14	,N019606-001C,SAMP,20,	17:15:20	0.5525		0.2167
15	,N019606-001CDUP,DUP,20,	17:16:22	0.5297		0.2100
16	,N019606-001CMS,MS,20,	17:17:17	1.0822		0.3722
17	,N019606-001CMSD,MSD,20,	17:18:17	1.0304		0.3570
18	,N019607-006C,SAMP,1,	17:19:13	0.0293		0.0631
19	,N019607-0010C,SAMP,5,	17:20:08	0.3131		0.1464
20	,N019743-003B,SAMP,1,	17:20:56	1.0498		0.3627
21	,BLANK,BLANK,1	17:21:40	0.0171		0.0595
22	,CCV-1,CCV,1,	17:22:29	0.5178		0.2065
23	,CCB-1,CCB,1,	17:23:11	0.0092		0.0572
24	,N019744-003C,SAMP,1,	17:23:54	0.0750		0.0765
25	,N019744-004C,SAMP,1,	17:24:42	0.0899		0.0809
26	,N019744-005C,SAMP,1,	17:25:26	0.0515		0.0696

NR

Reb 05/18/2016

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N019744-002B,SAMP,5,	17:26:14	0.0763		0.0769
28	,N019744-007C,SAMP,5,	17:26:57	0.3573		0.1594
29	,N019744-008C,SAMP,5,	17:27:40	1.1193		0.3831
30	,N019748-001E,SAMP,1,	17:28:28	0.6442		0.2436
31	,N019744-006C,SAMP,5,	17:29:12	0.1070		0.0859
32	,BLANK,BLANK,1	17:29:54	0.0096		0.0573
33	,BLANK,BLANK,1	17:30:43	-0.0051		0.0530
34	,CCV-2,CCV,1,	17:31:25	0.2977		0.1419
35	,CCV-2,CCV,1,	17:32:08	0.3039		0.1437
36	,CCV-2,CCV,1,	17:32:58	0.3175		0.1477
37	,CCB-2,CCB,1,	17:33:40	-0.0075		0.0523
38	,CCB-2,CCB,1,	17:34:23	-0.0129		0.0507

NR

Reb 05/18/2016

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/16/2016
Time Analyzed: 16:56 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R160507B
Color reagent: R160507C
2% Copper Sulfate: R160507A
Ammonium Hydroxide: CINV-160406F

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N019607-001C		7.93						
2)	N019607-002C		8.21						
3)	N019607-003C		8.07						
4)	N019607-005C		7.29						
5)	N019607-006C		8.55						
6)	N019607-007C		8.53						
7)	N019607-008C		8.31						
8)	N019607-009C		8.01						
9)	N019607-010C		8.63						
10)	N019743-003B		6.92						
11)	N019743-006B		7.46						
12)	N019744-001C		7.52						
13)	N019744-002B		7.47						
14)	N019744-003C		7.98						
15)	N019744-004C		7.21						
16)	N019744-005C		7.93						
17)	N019744-006C		8.66						
18)	N019744-007C		6.82						
19)	N019744-008C		6.48						
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

Reb 05/18/2016

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58387
ASSET #: N019607

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/14/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Mg in N019599-007C PS/MS/MSD & Ca in N019599-007C MSD failed. However LCS passed criteria

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/18/2016 Date: —

2nd Level Reviewer 5/19/2016 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58387
ASSET #: N019607

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/15/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only
%Rec of Na in N019606-001B PS/MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/18/2016 Date:

2nd Level Reviewer 5/19/2016 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in µg/L, in the original sample as follows:

Calcium ,µg/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate, mL / Amt. of Sample, mL

For Sample **N019607-003B** , the concentration in µg/L is calculated as follows:

Calcium ,µg/L = 104.285000000 * 1 * (25 / 25) * 1000

Calcium ,µg/L = 104285.000

Reporting results in two significant figures,

Calcium ,µg/L = 100000

% RSD SUMMARY

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.39	15	PASS
Standard1	ICAL	1	B	0.1	1.065	15	PASS
Standard3	ICAL	1	B	1	0.31	15	PASS
Standard4	ICAL	1	B	2.5	0.28	15	PASS
Standard5	ICAL	1	B	3.75	0.11	15	PASS
Standard6	ICAL	1	B	5	0.59	15	PASS
Standard7	ICAL	1	B	10	0.11	15	PASS
ICV	ICV	1	B	5.064	0.32	15	PASS
ICB	ICB	1	B	0.048	5.93	15	PASS
LLICV	CCV1	1	B	0.13	1.94	20	PASS
LLICV	CCV1	1	B	0.11	1.2	20	PASS
LLICV	CCV1	1	B	0.098	0.45	20	PASS
ICSA1	ICSA	1	B	0.053	1.35	15	PASS
ICSAB1	ICSAB	1	B	1.14	0.5	15	PASS
MB-58387	MBLK	1	B	0.0078	9.39	15	PASS
LCS1-58387	LCS	1	B	4.8	0.18	15	PASS
N019559-007C	SAMP	1	B	0.2	1.24	15	PASS
N019559-007C	SAMP	5	B	0.048	3.014	15	PASS
N019559-007C-PS	PS	1	B	5.27	0.39	15	PASS
N019559-007C-MS1	MS	1	B	5.27	0.65	15	PASS
N019559-007C-MSD1	MSD	1	B	5.29	0.64	15	PASS
N019606-001B	SAMP	1	B	0.82	1.27	15	PASS
N019606-002B	SAMP	1	B	0.51	0.91	15	PASS
N019606-003B	SAMP	1	B	0.51	0.21	15	PASS
CCV1	CCV	1	B	4.97	0.64	15	PASS
CCB1	CCB	1	B	0.044	0.84	15	PASS
N019607-003B	SAMP	1	B	1.075	0.84	15	PASS
CCV2	CCV	1	B	5.056	0.62	15	PASS
CCB2	CCB	1	B	0.065	5.38	15	PASS
CCV3	CCV	1	B	5.027	0.53	15	PASS
CCB3	CCB	1	B	0.048	5.36	15	PASS
CCV4	CCV	1	B	5.015	0.22	15	PASS
CCB4	CCB	1	B	0.049	6.0074	15	PASS
CCV5	CCV	1	B	4.96	1.04	15	PASS
CCB5	CCB	1	B	0.043	6.36	15	PASS
LLCCV1	CCV2	1	B	0.11	1.28	20	PASS
ICSA2	ICSA	1	B	0.065	2.89	15	PASS
ICSAB2	ICSAB	1	B	1.15	0.91	15	PASS
CCV6	CCV	1	B	4.95	0.82	15	PASS
CCB6	CCB	1	B	0.043	7.33	15	PASS
CCV7	CCV	1	B	5.022	0.16	15	PASS
CCB7	CCB	1	B	0.046	6.019	15	PASS

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLCCV2	CCV2	1	B	0.11	2.29	20	PASS
ICSA3	ICSA	1	B	0.071	2.75	15	PASS
ICSAB3	ICSAB	1	B	1.16	1.39	15	PASS
CalBlk	IBLK	1	Ca	0	10.36	15	PASS
Standard1	ICAL	1	Ca	0.2	14.28	15	PASS
Standard2	ICAL	1	Ca	1	0.93	15	PASS
Standard3	ICAL	1	Ca	2	0.18	15	PASS
Standard4	ICAL	1	Ca	5	0.3	15	PASS
Standard5	ICAL	1	Ca	7.5	0.11	15	PASS
Standard6	ICAL	1	Ca	10	0.83	15	PASS
Standard7	ICAL	1	Ca	20	0.55	15	PASS
ICV	ICV	1	Ca	9.87	0.53	15	PASS
ICB	ICB	1	Ca	0.011	65.13	15	<PQL
LLICV	CCV1	1	Ca	0.21	23.93	20	<PQL
LLICV	CCV1	1	Ca	0.19	24.2	20	<PQL
LLICV	CCV1	1	Ca	0.17	11.35	20	PASS
ICSA1	ICSA	1	Ca	441.53	0.44	15	PASS
ICSAB1	ICSAB	1	Ca	541.43	0.4	15	PASS
MB-58387	MBLK	1	Ca	-0.0069	48.69	15	<PQL
LCS1-58387	LCS	1	Ca	8.9	0.69	15	PASS
N019559-007C	SAMP	1	Ca	72.054	0.38	15	PASS
N019559-007C	SAMP	5	Ca	15.21	0.55	15	PASS
N019559-007C-PS	PS	1	Ca	80.56	0.4	15	PASS
N019559-007C-MS1	MS	1	Ca	80.58	0.46	15	PASS
N019559-007C-MSD1	MSD	1	Ca	85.75	0.49	15	PASS
N019606-001B	SAMP	1	Ca	113.19	0.87	15	PASS
N019606-002B	SAMP	1	Ca	116.27	0.25	15	PASS
N019606-003B	SAMP	1	Ca	121.22	0.27	15	PASS
CCV1	CCV	1	Ca	9.49	0.076	15	PASS
CCB1	CCB	1	Ca	-0.062	32.86	15	<PQL
N019607-003B	SAMP	1	Ca	104.28	1.14	15	PASS
CCV2	CCV	1	Ca	9.29	0.31	15	PASS
CCB2	CCB	1	Ca	0.0014	350.18	15	<PQL
CCV3	CCV	1	Ca	9.2	0.27	15	PASS
CCB3	CCB	1	Ca	-0.015	174.34	15	<PQL
CCV4	CCV	1	Ca	9.21	0.25	15	PASS
CCB4	CCB	1	Ca	0.016	184.67	15	<PQL
CCV5	CCV	1	Ca	9.093	0.66	15	PASS
CCB5	CCB	1	Ca	0.024	117.64	15	<PQL
LLCCV1	CCV2	1	Ca	0.14	14.69	20	PASS
ICSA2	ICSA	1	Ca	418.95	0.73	15	PASS
ICSAB2	ICSAB	1	Ca	512.06	0.62	15	PASS

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV6	CCV	1	Ca	9.034	0.43	15	PASS
CCB6	CCB	1	Ca	-0.0015	393.44	15	<PQL
CCV7	CCV	1	Ca	9.13	0.42	15	PASS
CCB7	CCB	1	Ca	-0.032	32.023	15	<PQL
LLCCV2	CCV2	1	Ca	0.13	20.49	20	<PQL
ICSA3	ICSA	1	Ca	415.75	0.37	15	PASS
ICSAB3	ICSAB	1	Ca	512.39	0.84	15	PASS
CalBlk	IBLK	1	Fe	0	1.41	15	PASS
Standard1	ICAL	1	Fe	0.02	2.75	15	PASS
Standard2	ICAL	1	Fe	0.05	0.96	15	PASS
Standard3	ICAL	1	Fe	2	0.39	15	PASS
Standard4	ICAL	1	Fe	5	0.081	15	PASS
Standard5	ICAL	1	Fe	7.5	0.22	15	PASS
Standard6	ICAL	1	Fe	10	0.55	15	PASS
Standard7	ICAL	1	Fe	20	0.16	15	PASS
ICV	ICV	1	Fe	10.18	0.37	15	PASS
ICB	ICB	1	Fe	0.00015	188.11	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.55	20	PASS
LLICV	CCV1	1	Fe	0.021	4.87	20	PASS
LLICV	CCV1	1	Fe	0.018	3.79	20	PASS
ICSA1	ICSA	1	Fe	165.23	0.046	15	PASS
ICSAB1	ICSAB	1	Fe	185.58	0.086	15	PASS
MB-58387	MBLK	1	Fe	0.0045	18.09	15	<PQL
LCS1-58387	LCS	1	Fe	0.098	0.94	15	PASS
N019559-007C	SAMP	1	Fe	0.042	1.28	15	PASS
N019559-007C	SAMP	5	Fe	0.01	2.96	15	PASS
N019559-007C-PS	PS	1	Fe	0.15	0.63	15	PASS
N019559-007C-MS1	MS	1	Fe	0.15	0.35	15	PASS
N019559-007C-MSD1	MSD	1	Fe	0.15	0.7	15	PASS
N019606-001B	SAMP	1	Fe	0.017	0.9	15	PASS
N019606-002B	SAMP	1	Fe	0.015	4.085	15	PASS
N019606-003B	SAMP	1	Fe	0.014	2.24	15	PASS
CCV1	CCV	1	Fe	9.86	0.58	15	PASS
CCB1	CCB	1	Fe	-0.0021	6.24	15	PASS
N019607-003B	SAMP	1	Fe	0.021	1.32	15	PASS
CCV2	CCV	1	Fe	9.94	0.34	15	PASS
CCB2	CCB	1	Fe	0.0005	50.028	15	<PQL
CCV3	CCV	1	Fe	9.9	0.49	15	PASS
CCB3	CCB	1	Fe	0.00054	42.48	15	<PQL
CCV4	CCV	1	Fe	9.85	0.22	15	PASS
CCB4	CCB	1	Fe	0.00052	122.27	15	<PQL
CCV5	CCV	1	Fe	9.72	0.61	15	PASS

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB5	CCB	1	Fe	0.00016	187.057	15	<PQL
LLCCV1	CCV2	1	Fe	0.018	1.055	20	PASS
ICSA2	ICSA	1	Fe	160.96	0.099	15	PASS
ICSAB2	ICSAB	1	Fe	181.16	0.11	15	PASS
CCV6	CCV	1	Fe	9.66	0.76	15	PASS
CCB6	CCB	1	Fe	0.00029	74.59	15	<PQL
CCV7	CCV	1	Fe	9.77	0.31	15	PASS
CCB7	CCB	1	Fe	0.00054	37.91	15	<PQL
LLCCV2	CCV2	1	Fe	0.018	2.41	20	PASS
ICSA3	ICSA	1	Fe	160.3	0.12	15	PASS
ICSAB3	ICSAB	1	Fe	180.08	0.12	15	PASS
CalBlk	IBLK	1	Mg	0	11.15	15	PASS
Standard1	ICAL	1	Mg	0.1	0.98	15	PASS
Standard2	ICAL	1	Mg	1	0.81	15	PASS
Standard3	ICAL	1	Mg	2	0.55	15	PASS
Standard4	ICAL	1	Mg	5	0.17	15	PASS
Standard5	ICAL	1	Mg	7.5	0.25	15	PASS
Standard6	ICAL	1	Mg	10	0.38	15	PASS
Standard7	ICAL	1	Mg	20	0.47	15	PASS
ICV	ICV	1	Mg	10	0.38	15	PASS
ICB	ICB	1	Mg	-0.0013	32.2	15	<PQL
LLICV	CCV1	1	Mg	0.11	0.55	20	PASS
LLICV	CCV1	1	Mg	0.1	1.37	20	PASS
LLICV	CCV1	1	Mg	0.091	2.034	20	PASS
ICSA1	ICSA	1	Mg	426.51	0.2	15	PASS
ICSAB1	ICSAB	1	Mg	492.82	0.14	15	PASS
MB-58387	MBLK	1	Mg	0.0039	41.82	15	<PQL
LCS1-58387	LCS	1	Mg	9.64	0.3	15	PASS
N019559-007C	SAMP	1	Mg	23.28	0.36	15	PASS
N019559-007C	SAMP	5	Mg	4.82	0.055	15	PASS
N019559-007C-PS	PS	1	Mg	30.82	0.15	15	PASS
N019559-007C-MS1	MS	1	Mg	30.65	0.28	15	PASS
N019559-007C-MSD1	MSD	1	Mg	30.73	0.22	15	PASS
N019606-001B	SAMP	1	Mg	27.13	0.97	15	PASS
N019606-002B	SAMP	1	Mg	17.91	0.63	15	PASS
N019606-003B	SAMP	1	Mg	18.59	0.42	15	PASS
CCV1	CCV	1	Mg	9.014	0.53	15	PASS
CCB1	CCB	1	Mg	-0.0014	3.43	15	PASS
N019607-003B	SAMP	1	Mg	15.96	1.16	15	PASS
CCV2	CCV	1	Mg	9.066	0.18	15	PASS
CCB2	CCB	1	Mg	-0.00092	110.4	15	<PQL
CCV3	CCV	1	Mg	9.035	0.23	15	PASS

RSD SUMMARY: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB3	CCB	1	Mg	-0.0008	67.44	15	<PQL
CCV4	CCV	1	Mg	9.19	0.43	15	PASS
CCB4	CCB	1	Mg	-0.00065	135.026	15	<PQL
CCV5	CCV	1	Mg	9.038	0.65	15	PASS
CCB5	CCB	1	Mg	-0.00012	321.92	15	<PQL
LLCCV1	CCV2	1	Mg	0.087	0.22	20	PASS
ICSA2	ICSA	1	Mg	408.81	0.16	15	PASS
ICSAB2	ICSAB	1	Mg	476.19	0.078	15	PASS
CCV6	CCV	1	Mg	8.91	0.61	15	PASS
CCB6	CCB	1	Mg	0.00077	11.61	15	PASS
CCV7	CCV	1	Mg	9.079	0.68	15	PASS
CCB7	CCB	1	Mg	0.001	90.56	15	<PQL
LLCCV2	CCV2	1	Mg	0.087	0.96	20	PASS
ICSA3	ICSA	1	Mg	408.4	0.18	15	PASS
ICSAB3	ICSAB	1	Mg	475.99	0.12	15	PASS

RSD SUMMARY: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	26.94	15	<PQL
Standard1	ICAL	1	Na	0.1	4.64	15	PASS
Standard2	ICAL	1	Na	1	0.8	15	PASS
Standard3	ICAL	1	Na	5	0.18	15	PASS
Standard4	ICAL	1	Na	10	0.15	15	PASS
Standard5	ICAL	1	Na	20	0.12	15	PASS
Standard6	ICAL	1	Na	40	0.11	15	PASS
ICV	ICV	1	Na	10.1	0.047	15	PASS
ICB	ICB	1	Na	0.018	28.26	15	<PQL
ICSA1	ICSA	1	Na	0.0065	59.65	15	<PQL
ICSAB1	ICSAB	1	Na	10.045	0.062	15	PASS
MB-58387	MBLK	1	Na	0.066	7.083	15	PASS
LCS2-58387	LCS	1	Na	20.67	0.11	15	PASS
N019606-001B	SAMP	5	Na	94.94	0.61	15	PASS
N019606-002B	SAMP	5	Na	61.74	0.062	15	PASS
CCV1	CCV	1	Na	10.045	0.3	15	PASS
CCB1	CCB	1	Na	0.036	9.14	15	PASS
N019606-003B	SAMP	5	Na	64.53	0.16	15	PASS
N019607-003B	SAMP	5	Na	91.75	0.97	15	PASS
CCV2	CCV	1	Na	9.77	0.078	15	PASS
CCB2	CCB	1	Na	0.023	22.15	15	<PQL
CCV3	CCV	1	Na	9.83	0.15	15	PASS
CCB3	CCB	1	Na	0.048	10.88	15	PASS
CCV4	CCV	1	Na	11.3	1.044	15	PASS
CCB4	CCB	1	Na	1.33	1.48	15	PASS
CCV4	CCV	1	Na	10.61	0.21	15	PASS
CCB4	CCB	1	Na	0.66	0.46	15	PASS
CCB4	CCB	1	Na	0.54	0.85	15	PASS
CCB4	CCB	1	Na	0.45	1.055	15	PASS
CCV5	CCV	1	Na	22.54	94.68	15	NR!
CCV5	CCV	1	Na	10.3	0.24	15	PASS
CCB5	CCB	1	Na	0.38	2.38	15	PASS
ICSA2	ICSA	1	Na	0.41	1.029	15	PASS
ICSAB2	ICSAB	1	Na	10.35	0.21	15	PASS
CCV6	CCV	1	Na	10.21	0.12	15	PASS
CCB6	CCB	1	Na	0.29	1.37	15	PASS
N019606-001B	SAMP	25	Na	19.27	0.13	15	PASS
N019606-001B	SAMP	125	Na	4.16	0.28	15	PASS
N019606-001B-PS	PS	25	Na	19.63	0.094	15	PASS
N019606-001B-MS2	MS	25	Na	19.34	0.15	15	PASS
N019606-001B-MSD2	MSD	25	Na	19.47	0.23	15	PASS
N019606-002B	SAMP	25	Na	12.39	0.14	15	PASS

RSD SUMMARY: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N019606-003B	SAMP	25	Na	13.091	0.15	15	PASS
N019607-003B	SAMP	25	Na	18.8	0.27	15	PASS
CCV7	CCV	1	Na	10.19	0.35	15	PASS
CCB7	CCB	1	Na	0.26	0.3	15	PASS
CCV8	CCV	1	Na	10.16	0.095	15	PASS
CCB8	CCB	1	Na	0.23	2.48	15	PASS
CCV9	CCV	1	Na	10.053	0.36	15	PASS
CCB9	CCB	1	Na	0.22	1.27	15	PASS
CCV10	CCV	1	Na	10.085	0.18	15	PASS
CCB10	CCB	1	Na	0.18	1.51	15	PASS
ICSA3	ICSA	1	Na	0.18	1.72	15	PASS
ICSAB3	ICSAB	1	Na	10	0.2	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160514A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/14/2016	01:19:37 PM
2	Standard1	ICAL	1	05/14/2016	01:24:29 PM
3	Standard2	ICAL	1	05/14/2016	01:29:48 PM
4	Standard3	ICAL	1	05/14/2016	01:35:07 PM
5	Standard4	ICAL	1	05/14/2016	01:40:30 PM
6	Standard5	ICAL	1	05/14/2016	01:46:53 PM
7	Standard6	ICAL	1	05/14/2016	01:53:14 PM
8	Standard7	ICAL	1	05/14/2016	01:59:35 PM
9	ICV	ICV	1	05/14/2016	02:03:51 PM
1	ICB	ICB	1	05/14/2016	02:17:44 PM
2	LLICV	CCV1	1	05/14/2016	02:23:23 PM
2	LLICV	CCV1	1	05/14/2016	02:31:45 PM
2	LLICV	CCV1	1	05/14/2016	02:36:09 PM
4	ICSA1	ICSA	1	05/14/2016	02:41:48 PM
5	ICSAB1	ICSAB	1	05/14/2016	02:48:35 PM
38	MB-58387	MBLK	1	05/14/2016	02:55:23 PM
39	LCS1-58387	LCS	1	05/14/2016	03:00:32 PM
40	N019559-007C	SAMP	1	05/14/2016	03:07:13 PM
41	N019559-007C	SAMP	5	05/14/2016	03:12:54 PM
42	N019559-007C-PS	PS	1	05/14/2016	03:18:34 PM
43	N019559-007C-MS1	MS	1	05/14/2016	03:25:05 PM
44	N019559-007C-MSD1	MSD	1	05/14/2016	03:31:46 PM
45	N019606-001B	SAMP	1	05/14/2016	03:38:26 PM
46	N019606-002B	SAMP	1	05/14/2016	03:45:08 PM
47	N019606-003B	SAMP	1	05/14/2016	03:51:49 PM
7	CCV1	CCV	1	05/14/2016	03:58:31 PM
1	CCB1	CCB	1	05/14/2016	04:05:11 PM
48	N019607-003B	SAMP	1	05/14/2016	04:10:20 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
49	MB-57298	MBLK	1	05/14/2016	04:17:02 PM
50	LCS1-57298	LCS	1	05/14/2016	04:22:44 PM
51	N019614-002C	SAMP	1	05/14/2016	04:29:26 PM
52	N019593-001B	SAMP	1	05/14/2016	04:36:07 PM
53	N019593-001B	SAMP	5	05/14/2016	04:41:48 PM
54	N019593-001B-PS	PS	1	05/14/2016	04:47:13 PM
55	N019593-001B-MS1	MS	1	05/14/2016	04:53:55 PM
56	N019593-001B-MSD1	MSD	1	05/14/2016	05:00:36 PM
57	MB-58401	MBLK	1	05/14/2016	05:07:19 PM
7	CCV2	CCV	1	05/14/2016	05:12:58 PM
1	CCB2	CCB	1	05/14/2016	05:19:39 PM
58	LCS1-58401	LCS	1	05/14/2016	05:25:18 PM
59	N019731-001B	SAMP	1	05/14/2016	05:32:00 PM
60	N019731-001B	SAMP	5	05/14/2016	05:37:42 PM
61	N019731-001B-PS	PS	1	05/14/2016	05:43:24 PM
62	N019731-001B-MS	MS	1	05/14/2016	05:50:09 PM
63	N019731-001B-MSD	MSD	1	05/14/2016	05:56:52 PM
64	N019748-001D	SAMP	1	05/14/2016	06:03:34 PM
65	N019748-002A	SAMP	1	05/14/2016	06:09:16 PM
66	N019748-003A	SAMP	1	05/14/2016	06:14:57 PM
67	MB-58328	MBLK	1	05/14/2016	06:20:38 PM
7	CCV3	CCV	1	05/14/2016	06:25:49 PM
1	CCB3	CCB	1	05/14/2016	06:32:30 PM
68	LCS1-58328	LCS	1	05/14/2016	06:38:09 PM
69	N019637-001C	SAMP	1	05/14/2016	06:44:51 PM
70	N019637-001C	SAMP	5	05/14/2016	06:50:32 PM
71	N019637-001C-PS	PS	1	05/14/2016	06:56:14 PM
72	N019637-001C-MS1	MS	1	05/14/2016	07:02:56 PM
73	N019637-001C-MSD1	MSD	1	05/14/2016	07:09:39 PM
74	N019637-002C	SAMP	1	05/14/2016	07:16:21 PM
75	N019637-003C	SAMP	1	05/14/2016	07:22:02 PM
76	N019637-004C	SAMP	1	05/14/2016	07:28:44 PM
77	N019637-005C	SAMP	1	05/14/2016	07:35:26 PM
7	CCV4	CCV	1	05/14/2016	07:42:08 PM
1	CCB4	CCB	1	05/14/2016	07:48:49 PM
78	N019639-001B	SAMP	1	05/14/2016	07:54:27 PM
79	N019639-002B	SAMP	1	05/14/2016	08:00:08 PM
80	N019639-005B	SAMP	1	05/14/2016	08:06:50 PM
81	N019639-007B	SAMP	1	05/14/2016	08:13:31 PM
82	N019639-008B	SAMP	1	05/14/2016	08:19:11 PM
83	N019639-008B-MS1	MS	1	05/14/2016	08:24:51 PM
84	N019639-009B	SAMP	1	05/14/2016	08:31:34 PM
85	N019639-010B	SAMP	1	05/14/2016	08:37:15 PM
86	N019639-011B	SAMP	1	05/14/2016	08:42:57 PM
87	N019639-012B	SAMP	1	05/14/2016	08:49:39 PM
7	CCV5	CCV	1	05/14/2016	08:56:21 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CCB5	CCB	1	05/14/2016	09:03:03 PM
2	LLCCV1	CCV2	1	05/14/2016	09:08:43 PM
4	ICSA2	ICSA	1	05/14/2016	09:14:22 PM
5	ICSAB2	ICSAB	1	05/14/2016	09:21:10 PM
88	N019639-013B	SAMP	1	05/14/2016	09:27:58 PM
89	N019639-014B	SAMP	1	05/14/2016	09:34:39 PM
90	N019639-015B	SAMP	1	05/14/2016	09:41:21 PM
91	N019639-015B	SAMP	1	05/14/2016	09:47:03 PM
92	N019639-016B	SAMP	1	05/14/2016	09:52:45 PM
93	N019639-017B	SAMP	1	05/14/2016	09:58:26 PM
94	N019639-018B	SAMP	1	05/14/2016	10:04:07 PM
98	MB-58406	MBLK	1	05/14/2016	10:10:47 PM
99	LCS1-58406	LCS	1	05/14/2016	10:15:59 PM
100	N019639-019B	SAMP	1	05/14/2016	10:22:42 PM
7	CCV6	CCV	1	05/14/2016	10:29:24 PM
1	CCB6	CCB	1	05/14/2016	10:36:05 PM
101	N019639-019B	SAMP	5	05/14/2016	10:41:43 PM
102	N019639-019B-PS	PS	1	05/14/2016	10:47:25 PM
103	N019639-019B-MS1	MS	1	05/14/2016	10:54:08 PM
104	N019639-019B-MSD1	MSD	1	05/14/2016	11:00:51 PM
105	N019654-001B	SAMP	1	05/14/2016	11:07:35 PM
106	N019654-002B	SAMP	1	05/14/2016	11:14:17 PM
107	N019654-003B	SAMP	1	05/14/2016	11:19:58 PM
108	N019654-005B	SAMP	1	05/14/2016	11:25:40 PM
109	N019654-006B	SAMP	1	05/14/2016	11:31:22 PM
110	N019654-007B	SAMP	1	05/14/2016	11:37:04 PM
7	CCV7	CCV	1	05/14/2016	11:42:45 PM
1	CCB7	CCB	1	05/14/2016	11:49:26 PM
2	LLCCV2	CCV2	1	05/14/2016	11:55:04 PM
4	ICSA3	ICSA	1	05/15/2016	12:00:43 AM
5	ICSAB3	ICSAB	1	05/15/2016	12:07:29 AM

INJECTION LOG: 160515A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207G,0.025<50mL
Standard2	MWST-151207G,0.25<50mL
Standard3	MWST-151207G,1.25<50mL
Standard4	MWST-151207G,2.5<50mL
Standard5	MWST-151207G,5<50mL
Standard6	MWST-151207G,10<50mL
ICV	MSST-140120B/-111006A/-150717A
CCV	MWST-151207G,2.5<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207H
Int. Std. (Sc):	MSST-150923A
PS Spike	MSST-140120B/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/15/2016	03:23:53 PM
2	Standard1	ICAL	1	05/15/2016	03:27:24 PM
3	Standard2	ICAL	1	05/15/2016	03:30:44 PM
4	Standard3	ICAL	1	05/15/2016	03:34:03 PM
5	Standard4	ICAL	1	05/15/2016	03:37:54 PM
6	Standard5	ICAL	1	05/15/2016	03:41:49 PM
7	Standard6	ICAL	1	05/15/2016	03:45:40 PM
8	ICV	ICV	1	05/15/2016	03:49:53 PM
1	ICB	ICB	1	05/15/2016	03:53:45 PM
3	ICSA1	ICSA	1	05/15/2016	03:57:03 PM
4	ICSAB1	ICSAB	1	05/15/2016	04:00:21 PM
38	MB-58401	MBLK	1	05/15/2016	04:06:29 PM
39	LCS2-58401	LCS	1	05/15/2016	04:09:48 PM
40	N019748-001D	SAMP	1	05/15/2016	04:13:43 PM
41	N019748-002A	SAMP	1	05/15/2016	04:17:35 PM
42	N019748-003A	SAMP	1	05/15/2016	04:21:26 PM
43	MB-58387	MBLK	1	05/15/2016	04:26:16 PM
44	LCS2-58387	LCS	1	05/15/2016	04:29:34 PM
45	N019606-001B	SAMP	5	05/15/2016	04:32:54 PM
46	N019606-002B	SAMP	5	05/15/2016	04:36:44 PM
5	CCV1	CCV	1	05/15/2016	04:40:04 PM
1	CCB1	CCB	1	05/15/2016	04:43:57 PM
47	N019606-003B	SAMP	5	05/15/2016	04:47:15 PM
48	N019607-003B	SAMP	5	05/15/2016	04:51:06 PM
49	MB-58328	MBLK	1	05/15/2016	04:54:57 PM
50	LCS2-58328	LCS	1	05/15/2016	05:00:40 PM
51	N019637-001C	SAMP	5	05/15/2016	05:04:34 PM
52	N019637-002C	SAMP	5	05/15/2016	05:07:55 PM
53	N019637-003C	SAMP	5	05/15/2016	05:11:14 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N019637-004C	SAMP	5	05/15/2016	05:14:33 PM
55	N019637-005C	SAMP	5	05/15/2016	05:17:53 PM
56	MB-58406	MBLK	1	05/15/2016	05:21:12 PM
5	CCV2	CCV	1	05/15/2016	05:24:32 PM
1	CCB2	CCB	1	05/15/2016	05:28:25 PM
57	LCS2-58406	LCS	1	05/15/2016	05:31:41 PM
58	N019730-001B	SAMP	5	05/15/2016	05:35:02 PM
59	N019730-002B	SAMP	5	05/15/2016	05:38:02 PM
60	N019730-003B	SAMP	5	05/15/2016	05:42:53 PM
61	MB-58410	MBLK	1	05/15/2016	05:47:46 PM
62	LCS2-58410	LCS	1	05/15/2016	05:51:07 PM
63	N019742-001C	SAMP	5	05/15/2016	05:54:28 PM
64	N019742-002C	SAMP	5	05/15/2016	05:57:47 PM
65	N019743-001A	SAMP	5	05/15/2016	06:01:07 PM
66	N019743-002A	SAMP	5	05/15/2016	06:04:27 PM
5	CCV3	CCV	1	05/15/2016	06:07:46 PM
1	CCB3	CCB	1	05/15/2016	06:11:41 PM
67	N019743-003C	SAMP	5	05/15/2016	06:14:57 PM
68	N019743-004A	SAMP	5	05/15/2016	06:18:17 PM
69	N019743-005A	SAMP	5	05/15/2016	06:21:36 PM
70	N019743-006C	SAMP	5	05/15/2016	06:24:55 PM
71	N019744-001D	SAMP	5	05/15/2016	06:29:46 PM
72	N019744-002C	SAMP	5	05/15/2016	06:35:24 PM
73	N019744-003D	SAMP	5	05/15/2016	06:40:17 PM
74	N019744-004D	SAMP	5	05/15/2016	06:45:45 PM
75	N019744-005D	SAMP	5	05/15/2016	06:51:23 PM
76	N019744-006D	SAMP	5	05/15/2016	06:56:22 PM
5	CCV4	CCV	1	05/15/2016	07:01:51 PM
1	CCB4	CCB	1	05/15/2016	07:05:45 PM
5	CCV4	CCV	1	05/15/2016	07:12:13 PM
1	CCB4	CCB	1	05/15/2016	07:23:28 PM
1	CCB4	CCB	1	05/15/2016	07:33:18 PM
1	CCB4	CCB	1	05/15/2016	07:40:55 PM
77	N019744-007D	SAMP	100	05/15/2016	07:46:53 PM
78	N019744-008D	SAMP	100	05/15/2016	07:50:13 PM
79	MB-58396	MBLK	1	05/15/2016	07:53:34 PM
80	LCS2-58396	LCS	1	05/15/2016	07:56:54 PM
81	N019651-001C	SAMP	1	05/15/2016	08:00:51 PM
82	N019651-002C	SAMP	1	05/15/2016	08:04:10 PM
83	N019651-003B	SAMP	1	05/15/2016	08:07:30 PM
84	N019651-004B	SAMP	1	05/15/2016	08:10:50 PM
85	N019651-005A	SAMP	1	05/15/2016	08:14:10 PM
86	N019651-006A	SAMP	1	05/15/2016	08:17:31 PM
5	CCV5	CCV	1	05/15/2016	08:20:52 PM
5	CCV5	CCV	1	05/15/2016	08:24:10 PM
1	CCB5	CCB	1	05/15/2016	08:28:04 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
3	ICSA2	ICSA	1	05/15/2016	08:31:21 PM
4	ICSAB2	ICSAB	1	05/15/2016	08:34:38 PM
87	N019651-007A	SAMP	1	05/15/2016	08:38:32 PM
88	N019748-001D	SAMP	5	05/15/2016	08:41:52 PM
89	N019748-001D	SAMP	25	05/15/2016	08:45:12 PM
90	N019748-001D-PS	PS	1	05/15/2016	08:48:31 PM
91	N019748-001D-PS	PS	5	05/15/2016	08:53:22 PM
92	N019748-001D-MS2	MS	1	05/15/2016	08:56:42 PM
93	N019748-001D-MS2	MS	5	05/15/2016	09:01:34 PM
94	N019748-001D-MSD2	MSD	1	05/15/2016	09:04:54 PM
95	N019748-001D-MSD2	MSD	5	05/15/2016	09:09:47 PM
96	N019748-002A	SAMP	5	05/15/2016	09:13:07 PM
5	CCV6	CCV	1	05/15/2016	09:16:28 PM
1	CCB6	CCB	1	05/15/2016	09:20:22 PM
97	N019748-003A	SAMP	5	05/15/2016	09:23:40 PM
98	N019606-001B	SAMP	25	05/15/2016	09:27:02 PM
99	N019606-001B	SAMP	125	05/15/2016	09:30:23 PM
100	N019606-001B-PS	PS	25	05/15/2016	09:33:44 PM
101	N019606-001B-MS2	MS	25	05/15/2016	09:37:05 PM
102	N019606-001B-MSD2	MSD	25	05/15/2016	09:40:27 PM
103	N019606-002B	SAMP	25	05/15/2016	09:43:47 PM
104	N019606-003B	SAMP	25	05/15/2016	09:47:08 PM
105	N019607-003B	SAMP	25	05/15/2016	09:50:30 PM
106	N019637-004C	SAMP	25	05/15/2016	09:53:51 PM
5	CCV7	CCV	1	05/15/2016	09:57:12 PM
1	CCB7	CCB	1	05/15/2016	10:01:05 PM
107	N019637-004C-PS	PS	5	05/15/2016	10:04:22 PM
108	N019637-004C-MS2	MS	5	05/15/2016	10:08:14 PM
109	N019637-004C-MSD2	MSD	5	05/15/2016	10:12:08 PM
110	N019730-001B	SAMP	25	05/15/2016	10:16:02 PM
111	N019730-001B	SAMP	125	05/15/2016	10:19:23 PM
112	N019730-001B-PS	PS	25	05/15/2016	10:22:43 PM
113	N019730-001B-MS2	MS	25	05/15/2016	10:26:05 PM
114	N019730-001B-MSD2	MSD	25	05/15/2016	10:29:26 PM
115	N019730-002B	SAMP	50	05/15/2016	10:32:47 PM
116	N019730-003B	SAMP	50	05/15/2016	10:36:09 PM
5	CCV8	CCV	1	05/15/2016	10:39:31 PM
1	CCB8	CCB	1	05/15/2016	10:43:25 PM
117	N019743-006C	SAMP	50	05/15/2016	10:46:42 PM
118	N019743-006C	SAMP	250	05/15/2016	10:50:02 PM
119	N019743-006C-PS	PS	50	05/15/2016	10:53:24 PM
120	N019743-006C-MS2	MS	50	05/15/2016	10:56:44 PM
121	N019743-006C-MSD2	MSD	50	05/15/2016	11:00:04 PM
122	N019744-001D	SAMP	500	05/15/2016	11:03:24 PM
123	N019744-002C	SAMP	100	05/15/2016	11:06:46 PM
124	N019744-003D	SAMP	500	05/15/2016	11:10:07 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
125	N019744-004D	SAMP	500	05/15/2016	11:13:28 PM
126	N019744-005D	SAMP	500	05/15/2016	11:16:49 PM
5	CCV9	CCV	1	05/15/2016	11:20:09 PM
1	CCB9	CCB	1	05/15/2016	11:24:03 PM
127	N019744-006D	SAMP	500	05/15/2016	11:27:22 PM
128	N019744-007D	SAMP	500	05/15/2016	11:32:13 PM
129	N019744-008D	SAMP	200	05/15/2016	11:35:34 PM
130	MB-58396	MBLK	1	05/15/2016	11:38:55 PM
131	LCS2-58396	LCS	1	05/15/2016	11:42:16 PM
132	N019651-007A	SAMP	5	05/15/2016	11:45:40 PM
133	N019651-007A-PS	PS	5	05/15/2016	11:49:01 PM
134	N019651-007A-MS	MS	5	05/15/2016	11:52:54 PM
135	N019651-007A-MSD	MSD	5	05/15/2016	11:56:48 PM
38	MB-58355	MBLK	1	05/16/2016	12:00:41 AM
5	CCV10	CCV	1	05/16/2016	12:03:59 AM
1	CCB10	CCB	1	05/16/2016	12:07:54 AM
3	ICSA3	ICSA	1	05/16/2016	12:11:10 AM
4	ICSAB3	ICSAB	1	05/16/2016	12:14:27 AM
39	LCS2-58355	LCS	1	05/16/2016	12:18:21 AM
40	N019619-001A	SAMP	10	05/16/2016	12:21:41 AM
41	N019620-001A	SAMP	10	05/16/2016	12:25:00 AM
42	N019621-001A	SAMP	10	05/16/2016	12:28:19 AM
43	N019622-001A	SAMP	10	05/16/2016	12:31:38 AM
44	N019623-001A	SAMP	10	05/16/2016	12:34:57 AM
45	N019640-001A	SAMP	10	05/16/2016	12:38:16 AM
46	N019641-001A	SAMP	1	05/16/2016	12:41:35 AM
47	N019642-001A	SAMP	10	05/16/2016	12:44:55 AM
48	N019667-001A	SAMP	10	05/16/2016	12:48:16 AM
5	CCV11	CCV	1	05/16/2016	12:51:36 AM
1	CCB11	CCB	1	05/16/2016	12:55:30 AM
49	N019668-001A	SAMP	10	05/16/2016	12:58:47 AM
50	N019669-001A	SAMP	10	05/16/2016	01:02:07 AM
51	N019670-001A	SAMP	10	05/16/2016	01:05:26 AM
52	N019671-001A	SAMP	10	05/16/2016	01:08:45 AM
53	N019687-001A	SAMP	10	05/16/2016	01:12:05 AM
54	N019688-001A	SAMP	10	05/16/2016	01:15:24 AM
55	N019689-001A	SAMP	10	05/16/2016	01:18:43 AM
56	N019690-001A	SAMP	10	05/16/2016	01:22:02 AM
57	N019691-001A	SAMP	10	05/16/2016	01:25:22 AM
58	N019692-001A	SAMP	1	05/16/2016	01:28:41 AM
5	CCV12	CCV	1	05/16/2016	01:32:01 AM
1	CCB12	CCB	1	05/16/2016	01:35:55 AM
59	N019693-001A	SAMP	10	05/16/2016	01:39:12 AM
60	N019668-001A	SAMP	50	05/16/2016	01:42:33 AM
61	N019668-001A-PS	PS	10	05/16/2016	01:45:53 AM
62	N019668-001A-MS2	MS	10	05/16/2016	01:49:14 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
63	N019668-001A-MSD2	MSD	10	05/16/2016	01:52:35 AM
5	CCV13	CCV	1	05/16/2016	01:55:55 AM
1	CCB13	CCB	1	05/16/2016	01:59:49 AM
3	ICSA4	ICSA	1	05/16/2016	02:03:07 AM
4	ICSAB4	ICSAB	1	05/16/2016	02:06:26 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2016 8:46:45**
Prep End Date: **5/11/2016 2:10:00**

Initials/ Date: 5/18/2016

Prep Factor Units
mL / mL

Prep Batch **58387** Prep Code: **3010_W** Technician **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-58387	Aqueous		25	☐	0	0	25	1.000		
LCS2-58387	Aqueous		25	☐	0	0	25	1.000		
MB-58387	Aqueous		25	☐	0	0	25	1.000		
N019559-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-007C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-007C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N019559-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8408	HYDROCHLORIC ACID
8445	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2016 8:46:45**
Prep End Date: **5/11/2016 2:10:00**

Initials/ Date: 5/18/2016

Prep Factor Units
mL / mL

Prep Batch **58387** Prep Code: **3010_W** Technician **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019606-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019606-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8408	HYDROCHLORIC ACID
8445	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160514A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	05/14/2016	01:19:37 PM	B	249.677	4579	0.00	mg/L	
Standard1	05/14/2016	01:24:29 PM	B	249.677	3036	0.1000	mg/L	
Standard3	05/14/2016	01:35:07 PM	B	249.677	31056	1.000	mg/L	
Standard4	05/14/2016	01:40:30 PM	B	249.677	81185	2.500	mg/L	
Standard5	05/14/2016	01:46:53 PM	B	249.677	119018	3.750	mg/L	
Standard6	05/14/2016	01:53:14 PM	B	249.677	161129	5.000	mg/L	
Standard7	05/14/2016	01:59:35 PM	B	249.677	319206	10.000	mg/L	1.0000
Magnesium								
CalBlk	05/14/2016	01:19:37 PM	Mg	279.079	13	0.00	mg/L	
Standard1	05/14/2016	01:24:29 PM	Mg	279.079	1265	0.1000	mg/L	
Standard2	05/14/2016	01:29:48 PM	Mg	279.079	10925	1.000	mg/L	
Standard3	05/14/2016	01:35:07 PM	Mg	279.079	21931	2.000	mg/L	
Standard4	05/14/2016	01:40:30 PM	Mg	279.079	55029	5.000	mg/L	
Standard5	05/14/2016	01:46:53 PM	Mg	279.079	79795	7.500	mg/L	
Standard6	05/14/2016	01:53:14 PM	Mg	279.079	105736	10.000	mg/L	
Standard7	05/14/2016	01:59:35 PM	Mg	279.079	203338	20.000	mg/L	0.9997
Calcium								
CalBlk	05/14/2016	01:19:37 PM	Ca	227.546	-57	0.00	mg/L	
Standard1	05/14/2016	01:24:29 PM	Ca	227.546	47	0.2000	mg/L	
Standard2	05/14/2016	01:29:48 PM	Ca	227.546	216	1.000	mg/L	
Standard3	05/14/2016	01:35:07 PM	Ca	227.546	455	2.000	mg/L	
Standard4	05/14/2016	01:40:30 PM	Ca	227.546	1137	5.000	mg/L	
Standard5	05/14/2016	01:46:53 PM	Ca	227.546	1659	7.500	mg/L	
Standard6	05/14/2016	01:53:14 PM	Ca	227.546	2192	10.000	mg/L	
Standard7	05/14/2016	01:59:35 PM	Ca	227.546	4421	20.000	mg/L	1.0000
Iron								
CalBlk	05/14/2016	01:19:37 PM	Fe	273.953	-136	0.00	mg/L	
Standard1	05/14/2016	01:24:29 PM	Fe	273.953	559	0.0200	mg/L	
Standard2	05/14/2016	01:29:48 PM	Fe	273.953	1390	0.050	mg/L	
Standard3	05/14/2016	01:35:07 PM	Fe	273.953	52934	2.000	mg/L	
Standard4	05/14/2016	01:40:30 PM	Fe	273.953	134015	5.000	mg/L	
Standard5	05/14/2016	01:46:53 PM	Fe	273.953	195365	7.500	mg/L	
Standard6	05/14/2016	01:53:14 PM	Fe	273.953	261022	10.000	mg/L	
Standard7	05/14/2016	01:59:35 PM	Fe	273.953	501171	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 160515A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	05/15/2016	03:23:53 PM	Na	589.594	39	0.00	mg/L	
Standard1	05/15/2016	03:27:24 PM	Na	589.594	376	0.1000	mg/L	
Standard2	05/15/2016	03:30:44 PM	Na	589.594	3663	1.000	mg/L	
Standard3	05/15/2016	03:34:03 PM	Na	589.594	18344	5.000	mg/L	
Standard4	05/15/2016	03:37:54 PM	Na	589.594	36307	10.000	mg/L	
Standard5	05/15/2016	03:41:49 PM	Na	589.594	71839	20.000	mg/L	
Standard6	05/15/2016	03:45:40 PM	Na	589.594	143432	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **ICV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5064.462	100	5000	0	101	90	110				
Calcium	9866.652	500	10000	0	98.7	90	110				
Iron	10175.838	20	10000	0	102	90	110				
Magnesium	9999.441	100	10000	0	100	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **ZZZZZZ** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	98.387	100	100.0	0	98.4	80	120				
Calcium	169.720	500	200.0	0	84.9	80	120				
Iron	18.083	20	20.00	0	90.4	80	120				
Magnesium	90.530	100	100.0	0	90.5	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4972.423	100	5000	0	99.4	90	110				
Calcium	9487.723	500	10000	0	94.9	90	110				
Iron	9863.020	20	10000	0	98.6	90	110				
Magnesium	9014.225	100	10000	0	90.1	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5055.729	100	5000	0	101	90	110				
Calcium	9284.990	500	10000	0	92.8	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9944.729	20	10000	0	99.4	90	110				
Magnesium	9066.068	100	10000	0	90.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5027.372	100	5000	0	101	90	110				
Calcium	9203.693	500	10000	0	92.0	90	110				
Iron	9903.755	20	10000	0	99.0	90	110				
Magnesium	9035.424	100	10000	0	90.4	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5015.283	100	5000	0	100	90	110				
Calcium	9210.427	500	10000	0	92.1	90	110				
Iron	9849.884	20	10000	0	98.5	90	110				
Magnesium	9188.530	100	10000	0	91.9	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4963.776	100	5000	0	99.3	90	110				
Calcium	9093.282	500	10000	0	90.9	90	110				
Iron	9720.432	20	10000	0	97.2	90	110				
Magnesium	9037.629	100	10000	0	90.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **ZZZZZZ** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	107.695	100	100.0	0	108	70	130				
Calcium	143.233	500	200.0	0	71.6	70	130				
Iron	17.781	20	20.00	0	88.9	70	130				
Magnesium	86.583	100	100.0	0	86.6	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4950.759	100	5000	0	99.0	90	110				
Calcium	9033.843	500	10000	0	90.3	90	110				
Iron	9657.344	20	10000	0	96.6	90	110				
Magnesium	8914.942	100	10000	0	89.1	90	110				S

Sample ID **CCV7** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **CCV** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5021.804	100	5000	0	100	90	110				
Calcium	9130.623	500	10000	0	91.3	90	110				
Iron	9770.109	20	10000	0	97.7	90	110				
Magnesium	9079.406	100	10000	0	90.8	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **108477**
Client ID: **ZZZZZZ** Batch ID: **R108477** TestNo: **EPA 6010B** Analysis Date: **5/14/2016** SeqNo: **2327515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	113.307	100	100.0	0	113	70	130				
Calcium	131.333	500	200.0	0	65.7	70	130				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Mg on CCV6 and Ca on LLCCV2 are outside criteria, however, samples N019607 were closed by CCV5/CCB5/LLCCV1/ICSA3/ICSAB3.

5/19/2016

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **ZZZZZZ**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	17.626	20	20.00	0	88.1	70	130				
Magnesium	87.053	100	100.0	0	87.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **ICV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10099.875	500	10000	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10044.932	500	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9766.248	500	10000	0	97.7	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9826.980	500	10000	0	98.3	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10610.002	500	10000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10302.550	500	10000	0	103	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10208.664	500	10000	0	102	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10190.094	500	10000	0	102	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10164.984	500	10000	0	102	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10052.831	500	10000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/16/2016**	SeqNo: **2328009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10085.363	500	10000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **ICB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	48.252	100									
Calcium	11.302	500									
Iron	0.155	20									
Magnesium	-1.343195	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	44.489	100									
Calcium	-61.751523	500									
Iron	-2.070867	20									
Magnesium	-1.411112	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	65.010	100									
Calcium	1.413	500									
Iron	0.496	20									
Magnesium	-0.920406	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	48.269	100									
Calcium	-14.902209	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.537	20									
Magnesium	-0.802027	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	48.573	100									
Calcium	15.982	500									
Iron	0.518	20									
Magnesium	-0.647086	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	42.989	100									
Calcium	23.828	500									
Iron	0.161	20									
Magnesium	-0.118994	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **CCB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	43.439	100									
Calcium	-1.472796	500									
Iron	0.289	20									
Magnesium	0.767	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB7	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	CCB	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327514

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	46.255	100									
Calcium	-31.743263	500									
Iron	0.544	20									
Magnesium	1.037	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **ICB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	17.569	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	35.521	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.292	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	47.640	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	448.003	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	383.953	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	290.661	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	260.955	500									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	227.403	500									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	221.344	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/16/2016**	SeqNo: **2328010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	176.441	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **ICSA**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	441420.487	50	500000	0	88.3	80	120				
Boron	53.136	100									
Calcium	441525.620	500	500000	0	88.3	80	120				
Iron	165234.196	20	200000	0	82.6	80	120				
Magnesium	426513.433	100	500000	0	85.3	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **ICSAB**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541501.779	50	500000	0	108	80	120				
Boron	1135.920	100	1000	0	114	80	120				
Calcium	541426.036	500	500000	0	108	80	120				
Iron	185583.385	20	200000	0	92.8	80	120				
Magnesium	492818.115	100	500000	0	98.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108477**
Client ID: **ICSA**	Batch ID: **R108477**	TestNo: **EPA 6010B**		Analysis Date: **5/14/2016**	SeqNo: **2327489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	439973.788	50	500000	0	88.0	80	120				
Boron	65.101	100									
Calcium	418953.363	500	500000	0	83.8	80	120				
Iron	160958.684	20	200000	0	80.5	80	120				
Magnesium	408813.626	100	500000	0	81.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ICSAB	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/14/2016	SeqNo:	2327490

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	540147.629	50	500000	0	108	80	120				
Boron	1150.755	100	1000	0	115	80	120				
Calcium	512060.827	500	500000	0	102	80	120				
Iron	181159.757	20	200000	0	90.6	80	120				
Magnesium	476192.562	100	500000	0	95.2	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ICSA	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	440459.683	50	500000	0	88.1	80	120				
Boron	70.564	100									
Calcium	415745.372	500	500000	0	83.1	80	120				
Iron	160300.585	20	200000	0	80.2	80	120				
Magnesium	408397.695	100	500000	0	81.7	80	120				

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ICSAB	Batch ID:	R108477	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	539711.586	50	500000	0	108	80	120				
Boron	1162.219	100	1000	0	116	80	120				
Calcium	512388.024	500	500000	0	102	80	120				
Iron	180084.213	20	200000	0	90.0	80	120				
Magnesium	475993.818	100	500000	0	95.2	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSA	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	6.535	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSAB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10045.063	500	10000	0	100	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSA	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	414.189	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSAB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327950

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10345.215	500	10000	0	103	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSA	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/16/2016	SeqNo:	2328011

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	181.054	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **ICSAB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/16/2016**	SeqNo: **2328012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9999.211	500	10000	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.98	65-125	PASS
Standard2	ICAL	1	1.1	110.26	65-125	PASS
Standard3	ICAL	1	1.13	112.7	65-125	PASS
Standard4	ICAL	1	1.022	102.21	65-125	PASS
Standard5	ICAL	1	1.057	105.71	65-125	PASS
Standard6	ICAL	1	0.98	98.49	65-125	PASS
Standard7	ICAL	1	0.97	97.24	65-125	PASS
ICV	ICV	1	0.99	98.94	65-125	PASS
ICB	ICB	1	1.01	101.02	65-125	PASS
LLICV	CCV1	1	1.011	101.1	65-125	PASS
LLICV	CCV1	1	1.0084	100.84	65-125	PASS
LLICV	CCV1	1	1.0082	100.82	65-125	PASS
ICSA1	ICSA	1	1.082	108.24	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.28	65-125	PASS
MB-58387	MBLK	1	1.0087	100.87	65-125	PASS
LCS1-58387	LCS	1	1.071	107.08	65-125	PASS
N019559-007C	SAMP	1	1.034	103.38	65-125	PASS
N019559-007C	SAMP	5	1.067	106.68	65-125	PASS
N019559-007C-PS	PS	1	0.95	95.22	65-125	PASS
N019559-007C-MS1	MS	1	0.95	95.053	65-125	PASS
N019559-007C-MSD1	MSD	1	0.96	95.57	65-125	PASS
N019606-001B	SAMP	1	0.97	97.24	65-125	PASS
N019606-002B	SAMP	1	0.98	98.19	65-125	PASS
N019606-003B	SAMP	1	1.0023	100.23	65-125	PASS
CCV1	CCV	1	1.016	101.58	65-125	PASS
CCB1	CCB	1	0.96	95.8	65-125	PASS
N019607-003B	SAMP	1	0.93	93.18	65-125	PASS
CCV2	CCV	1	0.99	99.18	65-125	PASS
CCB2	CCB	1	1.0069	100.69	65-125	PASS
CCV3	CCV	1	0.98	98.31	65-125	PASS
CCB3	CCB	1	1.0029	100.29	65-125	PASS
CCV4	CCV	1	0.98	98.023	65-125	PASS
CCB4	CCB	1	1.0046	100.46	65-125	PASS
CCV5	CCV	1	0.99	99.12	65-125	PASS
CCB5	CCB	1	1.0073	100.73	65-125	PASS
LLCCV1	CCV2	1	1.0079	100.79	65-125	PASS
ICSA2	ICSA	1	1.084	108.39	65-125	PASS
ICSAB2	ICSAB	1	0.86	85.63	65-125	PASS
CCV6	CCV	1	1	99.75	65-125	PASS
CCB6	CCB	1	1.0093	100.93	65-125	PASS

INTERNAL STANDARD: 160514A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV7	CCV	1	0.99	99.31	65-125	PASS
CCB7	CCB	1	1.0062	100.62	65-125	PASS
LLCCV2	CCV2	1	1.0075	100.75	65-125	PASS
ICSA3	ICSA	1	1.082	108.18	65-125	PASS
ICSAB3	ICSAB	1	0.85	85.46	65-125	PASS

INTERNAL STANDARD: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.029	102.88	65-125	PASS
Standard2	ICAL	1	1.032	103.21	65-125	PASS
Standard3	ICAL	1	1.033	103.33	65-125	PASS
Standard4	ICAL	1	1.024	102.42	65-125	PASS
Standard5	ICAL	1	1.023	102.31	65-125	PASS
Standard6	ICAL	1	1.011	101.07	65-125	PASS
ICV	ICV	1	1.02	102.02	65-125	PASS
ICB	ICB	1	1.015	101.5	65-125	PASS
ICSA1	ICSA	1	1.012	101.22	65-125	PASS
ICSAB1	ICSAB	1	1.012	101.15	65-125	PASS
MB-58387	MBLK	1	1.021	102.12	65-125	PASS
LCS2-58387	LCS	1	1.032	103.18	65-125	PASS
N019606-001B	SAMP	5	1.0049	100.49	65-125	PASS
N019606-002B	SAMP	5	1.0071	100.71	65-125	PASS
CCV1	CCV	1	1.03	102.98	65-125	PASS
CCB1	CCB	1	1.032	103.15	65-125	PASS
N019606-003B	SAMP	5	1.018	101.81	65-125	PASS
N019607-003B	SAMP	5	1.01	101.02	65-125	PASS
CCV2	CCV	1	1.029	102.86	65-125	PASS
CCB2	CCB	1	1.027	102.69	65-125	PASS
CCV3	CCV	1	1.058	105.85	65-125	PASS
CCB3	CCB	1	1.056	105.58	65-125	PASS
CCV4	CCV	1	1.027	102.69	65-125	PASS
CCB4	CCB	1	1.0049	100.49	65-125	PASS
CCV4	CCV	1	1.05	105	65-125	PASS
CCB4	CCB	1	1.046	104.59	65-125	PASS
CCB4	CCB	1	1.044	104.38	65-125	PASS
CCB4	CCB	1	1.17	116.76	65-125	PASS
CCV5	CCV	1	0.71	71.19	65-125	PASS
CCV5	CCV	1	1.048	104.75	65-125	PASS
CCB5	CCB	1	1.11	110.91	65-125	PASS
ICSA2	ICSA	1	1.044	104.43	65-125	PASS
ICSAB2	ICSAB	1	1.05	104.97	65-125	PASS
CCV6	CCV	1	1.064	106.37	65-125	PASS
CCB6	CCB	1	1.14	114.21	65-125	PASS
N019606-001B	SAMP	25	1.051	105.13	65-125	PASS
N019606-001B	SAMP	125	1.044	104.39	65-125	PASS
N019606-001B-PS	PS	25	1.044	104.36	65-125	PASS
N019606-001B-MS2	MS	25	1.039	103.91	65-125	PASS
N019606-001B-MSD2	MSD	25	1.044	104.43	65-125	PASS

INTERNAL STANDARD: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N019606-002B	SAMP	25	1.04	103.96	65-125	PASS
N019606-003B	SAMP	25	1.022	102.22	65-125	PASS
N019607-003B	SAMP	25	1.013	101.27	65-125	PASS
CCV7	CCV	1	1.022	102.18	65-125	PASS
CCB7	CCB	1	1.11	110.67	65-125	PASS
CCV8	CCV	1	1.045	104.47	65-125	PASS
CCB8	CCB	1	1.12	112.27	65-125	PASS
CCV9	CCV	1	1.033	103.26	65-125	PASS
CCB9	CCB	1	1.046	104.58	65-125	PASS
CCV10	CCV	1	1.042	104.17	65-125	PASS
CCB10	CCB	1	1.037	103.72	65-125	PASS
ICSA3	ICSA	1	1.021	102.08	65-125	PASS
ICSAB3	ICSAB	1	1.045	104.5	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019607
Test Method: EPA 6010B
Analysis Date: 05/14/16

Matrix: Groundwater
Batch No.: 58387

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019559-007C DT 5X	Boron	ug/L	242.3701	NA	199.4623	21.51%	10
N019559-007C DT 5X	Calcium	ug/L	76038.74	PASS	72053.68	5.53%	10
N019559-007C DT 5X	Iron	ug/L	49.85686	NA	42.35882	17.70%	10
N019559-007C DT 5X	Magnesium	ug/L	24081.24	PASS	23282.93	3.43%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019607
Test Method: EPA 6010B
Analysis Date: 05/15/16

Matrix: Groundwater
Batch No.: 58387

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Na. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019606-001B DT 125X	Sodium	ug/L	519549.5	NA	481632.1	7.87%	10

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N019606-001B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/15/2016	SeqNo:	2327966

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	490733.923	12000	20000	481600	45.5	80	120				S

Sample ID	N019559-007C-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108477
Client ID:	ZZZZZZ	Batch ID:	58387	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2328322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5266.642	100	5000	199.5	101	80	120				
Calcium	80562.357	500	10000	72050	85.1	80	120				
Iron	147.892	20	100.0	42.36	106	80	120				
Magnesium	30819.194	100	10000	23280	75.4	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58340
ASSET #: N019607

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/13/2016

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X				
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Dilution was necessary for Se in N019607-005B, 006B, 008B & 009B due to failing %Rec of Ge [1] IS. Sample was reported at dilution which passed %Rec criteria of IS.

For Confirmation:

N019607-009B (6020) = 0.11 ug/L :confirmation: 0.0 ug/L ; N019607-009A (218.6) = 2.5 ug/L :confirmation: 0.061 ug/L

N019607-010B (6020) = 1.8 ug/L :confirmation: 1.602 ug/L ; N019607-010A (218.6) = 0.87 ug/L :confirmation: 0.534 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/19/2016 Date:

2nd Level Reviewer 5/19/2016 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N019607-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 84.3949 * 25 * (25/25)

Chromium , ug/L = 2109.872500

Reporting results in two significant figures,

Chromium , ug/L = 2100

% RSD SUMMARY

PERCENT RSD SUMMARY: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.098	2.63	15	PASS	0.085	17.62	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	2.11	15	PASS	0.48	6.16	15	PASS
Std3-5/50 ppb	ICAL	1	5.072	1.48	15	PASS	5.14	0.91	15	PASS
Std4-10/100 ppb	ICAL	1	10.22	0.36	15	PASS	10.21	0.82	15	PASS
Std5-20/200 ppb	ICAL	1	20.29	0.58	15	PASS	20.52	1.17	15	PASS
Std6-40/400 ppb	ICAL	1	40.6	0.95	15	PASS	40.52	0.32	15	PASS
Std7-100/1000 ppb	ICAL	1	101.31	2.25	15	PASS	101.66	1.94	15	PASS
Std8-200/2000 ppb	ICAL	1	199.18	1.89	15	PASS	199	1.029	15	PASS
ICV	ICV	1	9.21	0.94	15	PASS	97.38	0.93	15	PASS
ICB	ICB	1	0.029	26.92	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.92	3.81	20	PASS	0.48	2.4	20	PASS
ICSA1	ICSA	1	0.26	4.49	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.32	1.34	15	PASS	20.47	0.084	15	PASS
MB-58340	MBLK	1	0.023	63.24	15	<PQL	<0.000	N/A	15	<PQL
LCS-58340	LCS	1	9.41	0.49	15	PASS	93.26	0.49	15	PASS
N019636-001B	SAMP	1	1.61	3.71	15	PASS	<0.000	N/A	15	<PQL
N019636-001B	SAMP	5	0.39	6.52	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	19.85	1.79	15	PASS	20.049	2.74	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019636-001B-PS	PS	1	10.85	0.74	15	PASS	89.85	0.83	15	PASS
N019636-001B-MS	MS	1	10.89	1.25	15	PASS	89.79	1.33	15	PASS
N019636-001B-MSD	MSD	1	10.57	0.56	15	PASS	88.16	0.3	15	PASS
N019638-001B	SAMP	1	3.61	0.59	15	PASS	<0.000	N/A	15	<PQL
N019638-001B-MS	MS	1	12.33	1.53	15	PASS	84.62	0.69	15	PASS
N019607-001B	SAMP	1	<0.000	N/A	15	<PQL	196.24	0.83	15	PASS
N019607-001B	SAMP	5	<0.000	N/A	15	<PQL	41.74	1.17	15	PASS
N019607-002B	SAMP	1	2104.12	1.77	15	PASS	2.89	0.48	15	PASS
N019607-002B	SAMP	5	456.91	0.97	15	PASS	0.57	3.12	15	PASS
N019607-002B	SAMP	25	84.39	2.53	15	PASS	0.068	26.6	15	<PQL
CCV2	CCV	1	19.78	0.23	15	PASS	19.58	0.71	15	PASS
CCB2	CCB	1	0.05	32.78	15	<PQL	<0.000	N/A	15	<PQL
N019607-003B	SAMP	1	205.079	0.59	15	PASS	<0.000	N/A	15	<PQL
N019607-003B	SAMP	5	43.014	0.56	15	PASS	<0.000	N/A	15	<PQL
N019607-003B	SAMP	25	8.79	0.88	15	PASS	<0.000	N/A	15	<PQL
N019607-005B	SAMP	1	0.28	24.28	15	<PQL	2346.52	1.28	15	PASS
N019607-005B	SAMP	5	0.14	13.77	15	PASS	513.75	1.98	15	PASS
N019607-005B	SAMP	25	<0.000	N/A	15	<PQL	108.16	0.9	15	PASS
N019607-006B	SAMP	1	<0.000	N/A	15	<PQL	2538.1	1.33	15	PASS
N019607-006B	SAMP	5	<0.000	N/A	15	<PQL	569.38	1.22	15	PASS
N019607-006B	SAMP	25	<0.000	N/A	15	<PQL	120.36	0.7	15	PASS

PERCENT RSD SUMMARY: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019607-007B	SAMP	1	128.25	0.67	15	PASS	7.087	1.66	15	PASS
CCV3	CCV	1	19.77	0.9	15	PASS	19.64	1.4	15	PASS
CCB3	CCB	1	0.0079	113.082	15	<PQL	<0.000	N/A	15	<PQL
N019607-007B	SAMP	5	27.67	0.88	15	PASS	1.49	1.14	15	PASS
N019607-008B	SAMP	1	0.18	62.29	15	<PQL	910.53	1.16	15	PASS
N019607-008B	SAMP	5	<0.000	N/A	15	<PQL	210.26	0.46	15	PASS
N019607-008B	SAMP	25	<0.000	N/A	15	<PQL	44.49	0.81	15	PASS
N019607-009B	SAMP	1	0.11	30.29	15	<PQL	112.49	1.27	15	PASS
N019607-009B	SAMP	5	0.049	44.86	15	<PQL	25.098	0.7	15	PASS
N019607-009B	SAMP	25	0.048	38.83	15	<PQL	5.22	1.37	15	PASS
N019607-010B	SAMP	1	1.85	2.55	15	PASS	197.91	0.51	15	PASS
N019607-010B	SAMP	5	0.4	8.32	15	PASS	43.35	1.65	15	PASS
N019607-010B	SAMP	25	0.11	3.39	15	PASS	9.21	1.88	15	PASS
CCV4	CCV	1	19.71	0.8	15	PASS	19.46	1.093	15	PASS
CCB4	CCB	1	0.011	121.72	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.9	2.1	20	PASS	0.51	4.68	20	PASS
ICSA2	ICSA	1	0.15	22.23	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.45	0.8	15	PASS	20.61	1.96	15	PASS
N019611-008B	SAMP	1	174.11	1.025	15	PASS	6.64	1.55	15	PASS
N019611-008B	SAMP	5	37.38	0.39	15	PASS	1.39	3.41	15	PASS
N019611-010B	SAMP	1	35.32	0.83	15	PASS	131.93	0.038	15	PASS
N019611-010B	SAMP	5	7.39	0.54	15	PASS	28.061	1.61	15	PASS
N019611-011B	SAMP	1	37.67	0.3	15	PASS	141.34	0.58	15	PASS
N019611-011B	SAMP	5	8.0091	0.99	15	PASS	29.83	0.53	15	PASS
N019611-012B	SAMP	1	1.071	1.86	15	PASS	1407.35	0.4	15	PASS
N019611-012B	SAMP	5	0.22	9.51	15	PASS	309.97	0.33	15	PASS
N019611-013B	SAMP	1	21.9	1.3	15	PASS	38.51	1.41	15	PASS
N019611-013B	SAMP	5	4.75	1	15	PASS	8.4	3.6	15	PASS
CCV5	CCV	1	19.78	2.092	15	PASS	19.77	2.66	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019611-014B	SAMP	1	7.071	0.67	15	PASS	<0.000	N/A	15	<PQL
N019611-014B	SAMP	5	1.52	1.27	15	PASS	<0.000	N/A	15	<PQL
N019611-015B	SAMP	1	7.4	0.98	15	PASS	<0.000	N/A	15	<PQL
N019611-015B	SAMP	5	1.57	1.87	15	PASS	<0.000	N/A	15	<PQL
CCV6	CCV	1	19.59	1.029	15	PASS	19.85	0.96	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.96	1.5	20	PASS	0.52	8.55	20	PASS
ICSA3	ICSA	1	0.14	12.47	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.44	0.37	15	PASS	21.065	0.093	15	PASS

PERCENT RSD SUMMARY: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.098	9.27	15	PASS	0.069	6.6	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.47	7.079	15	PASS	0.46	34.38	15	<PQL
Std3-5/50 ppb	ICAL	1	4.98	2.1	15	PASS	4.78	2.64	15	PASS
Std4-10/100 ppb	ICAL	1	10.054	1.96	15	PASS	10.16	5.77	15	PASS
Std5-20/200 ppb	ICAL	1	20.31	0.44	15	PASS	20.6	1.084	15	PASS
Std6-40/400 ppb	ICAL	1	40.41	0.45	15	PASS	40.73	0.95	15	PASS
Std7-100/1000 ppb	ICAL	1	100.89	0.97	15	PASS	101.11	1.41	15	PASS
Std8-200/2000 ppb	ICAL	1	199.44	1.081	15	PASS	199.24	1.08	15	PASS
ICV	ICV	1	9.36	2.62	15	PASS	9.52	3.32	15	PASS
ICB	ICB	1	0.0091	132.75	15	<PQL	0.0098	99.95	15	<PQL
LLICV	CCV1	1	0.094	2.11	20	PASS	0.43	35.93	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.014	124.47	15	<PQL
ICSAB1	ICSAB	1	19.99	0.61	15	PASS	17.47	1.78	15	PASS
MB-58340	MBLK	1	0.0067	110.27	15	<PQL	0	N/A	15	<PQL
LCS-58340	LCS	1	9.39	1.87	15	PASS	9.063	2.75	15	PASS
N019636-001B	SAMP	1	0.82	1.3	15	PASS	0.31	13.68	15	PASS
N019636-001B	SAMP	5	0.23	3.67	15	PASS	0.082	14.16	15	PASS
CCV1	CCV	1	20.51	0.79	15	PASS	19.79	3.23	15	PASS
CCB1	CCB	1	0.003	308.53	15	<PQL	0.008	0.38	15	PASS
N019636-001B-PS	PS	1	10.21	2.38	15	PASS	8.55	6.4	15	PASS
N019636-001B-MS	MS	1	10.25	1.52	15	PASS	8.54	4.58	15	PASS
N019636-001B-MSD	MSD	1	10.26	2.44	15	PASS	8.44	3.34	15	PASS
N019638-001B	SAMP	1	0.56	5.077	15	PASS	0.65	8.77	15	PASS
N019638-001B-MS	MS	1	10.19	1.27	15	PASS	9.04	7.97	15	PASS
N019607-001B	SAMP	1	11.36	1.65	15	PASS	0.13	23.18	15	<PQL
N019607-001B	SAMP	5	2.43	4	15	PASS	0.045	29	15	<PQL
N019607-002B	SAMP	1	1.38	8.93	15	PASS	11.76	2.64	15	PASS
N019607-002B	SAMP	5	0.3	9.065	15	PASS	2.63	7.39	15	PASS
N019607-002B	SAMP	25	0.057	39.92	15	<PQL	0.55	9.14	15	PASS
CCV2	CCV	1	20.4	1.3	15	PASS	18.77	3.53	15	PASS
CCB2	CCB	1	0.0068	49.7	15	<PQL	0.0052	86.6	15	<PQL
N019607-003B	SAMP	1	2.64	2.2	15	PASS	4.77	4.87	15	PASS
N019607-003B	SAMP	5	0.55	9.45	15	PASS	1.16	4.87	15	PASS
N019607-003B	SAMP	25	0.12	7.083	15	PASS	0.22	23.94	15	<PQL
N019607-005B	SAMP	1	4.95	5.33	15	PASS	0.48	10.026	15	PASS
N019607-005B	SAMP	5	1.084	5.85	15	PASS	0.07	34.26	15	<PQL
N019607-005B	SAMP	25	0.21	13.0044	15	PASS	0.025	40.7	15	<PQL
N019607-006B	SAMP	1	5.48	2.96	15	PASS	0.41	24.072	15	<PQL
N019607-006B	SAMP	5	1.14	2.79	15	PASS	0.1	34.82	15	<PQL
N019607-006B	SAMP	25	0.27	4.94	15	PASS	0.01	173.21	15	<PQL

PERCENT RSD SUMMARY: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019607-007B	SAMP	1	0.54	6.59	15	PASS	6.48	3.13	15	PASS
CCV3	CCV	1	20.47	0.27	15	PASS	18.98	2.27	15	PASS
CCB3	CCB	1	0.0089	82.35	15	<PQL	0.0071	1.82	15	PASS
N019607-007B	SAMP	5	0.13	14.55	15	PASS	1.58	9.52	15	PASS
N019607-008B	SAMP	1	4.028	3.97	15	PASS	0.06	58.69	15	<PQL
N019607-008B	SAMP	5	0.94	7.59	15	PASS	0.0055	173.21	15	<PQL
N019607-008B	SAMP	25	0.2	12.84	15	PASS	0.0098	114.67	15	<PQL
N019607-009B	SAMP	1	5.31	1.61	15	PASS	0.12	30.64	15	<PQL
N019607-009B	SAMP	5	1.25	3.66	15	PASS	0.02	48.99	15	<PQL
N019607-009B	SAMP	25	0.23	12.11	15	PASS	0.011	115.57	15	<PQL
N019607-010B	SAMP	1	11.99	2.31	15	PASS	13.21	3.6	15	PASS
N019607-010B	SAMP	5	2.67	3.72	15	PASS	2.93	8.25	15	PASS
N019607-010B	SAMP	25	0.56	2.9	15	PASS	0.65	10.45	15	PASS
CCV4	CCV	1	20.26	0.95	15	PASS	18.11	3.58	15	PASS
CCB4	CCB	1	0.0082	50	15	<PQL	0.007	100.23	15	<PQL
LLCCV1	CCV2	1	0.11	4.24	20	PASS	0.47	18.53	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.033	52.58	15	<PQL
ICSAB2	ICSAB	1	19.92	2.3	15	PASS	16.57	4.68	15	PASS
N019611-008B	SAMP	1	2.55	2.44	15	PASS	0.53	9.36	15	PASS
N019611-008B	SAMP	5	0.55	2.97	15	PASS	0.13	38.56	15	<PQL
N019611-010B	SAMP	1	4.69	1.03	15	PASS	0.019	65.5	15	<PQL
N019611-010B	SAMP	5	1.034	11.74	15	PASS	0.0077	99.4	15	<PQL
N019611-011B	SAMP	1	5.029	1.46	15	PASS	0.046	10.19	15	PASS
N019611-011B	SAMP	5	1.11	9.092	15	PASS	0.011	113.5	15	<PQL
N019611-012B	SAMP	1	9.63	1.73	15	PASS	0.021	43.46	15	<PQL
N019611-012B	SAMP	5	2.044	4.85	15	PASS	0.013	91.3	15	<PQL
N019611-013B	SAMP	1	1.77	2.62	15	PASS	0.23	3.2	15	PASS
N019611-013B	SAMP	5	0.38	6.27	15	PASS	0.027	97.037	15	<PQL
CCV5	CCV	1	20.34	1.3	15	PASS	19.49	3.52	15	PASS
CCB5	CCB	1	0.012	27.97	15	<PQL	0.0077	100.44	15	<PQL
N019611-014B	SAMP	1	1.13	6.084	15	PASS	0.28	18.031	15	<PQL
N019611-014B	SAMP	5	0.25	3.19	15	PASS	0.05	49.43	15	<PQL
N019611-015B	SAMP	1	1.16	3.66	15	PASS	0.3	22.16	15	<PQL
N019611-015B	SAMP	5	0.27	4.26	15	PASS	0.047	53.24	15	<PQL
CCV6	CCV	1	20.31	0.38	15	PASS	19.27	0.33	15	PASS
CCB6	CCB	1	0.0036	77.41	15	<PQL	0	N/A	15	<PQL
LLCCV2	CCV2	1	0.11	13.46	20	PASS	0.4	18.81	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.018	64.97	15	<PQL
ICSAB3	ICSAB	1	20.15	0.96	15	PASS	16.83	4.26	15	PASS

PERCENT RSD SUMMARY: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.096	14.86	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	5.8	15	PASS
Std3-5/50 ppb	ICAL	1	4.96	1.16	15	PASS
Std4-10/100 ppb	ICAL	1	9.91	1.2	15	PASS
Std5-20/200 ppb	ICAL	1	19.64	0.42	15	PASS
Std6-40/400 ppb	ICAL	1	39.27	0.73	15	PASS
Std7-100/1000 ppb	ICAL	1	99.45	0.32	15	PASS
Std8-200/2000 ppb	ICAL	1	200.46	0.64	15	PASS
ICV	ICV	1	9.55	2.47	15	PASS
ICB	ICB	1	0.0044	106.61	15	<PQL
LLICV	CCV1	1	0.43	3.96	20	PASS
ICSA1	ICSA	1	0.026	22.85	15	<PQL
ICSAB1	ICSAB	1	23.16	1.32	15	PASS
MB-58340	MBLK	1	0.0064	21.78	15	<PQL
LCS-58340	LCS	1	9.38	0.78	15	PASS
N019636-001B	SAMP	1	2.22	0.74	15	PASS
N019636-001B	SAMP	5	0.48	2.52	15	PASS
CCV1	CCV	1	19.82	0.11	15	PASS
CCB1	CCB	1	0.022	14.81	15	PASS
N019636-001B-PS	PS	1	13.41	1.74	15	PASS
N019636-001B-MS	MS	1	13.26	0.59	15	PASS
N019636-001B-MSD	MSD	1	13.15	1.18	15	PASS
N019638-001B	SAMP	1	0.64	3.29	15	PASS
N019638-001B-MS	MS	1	12.091	1.18	15	PASS
N019607-001B	SAMP	1	40.65	0.39	15	PASS
N019607-001B	SAMP	5	7.78	2.19	15	PASS
N019607-002B	SAMP	1	15.46	0.7	15	PASS
N019607-002B	SAMP	5	3.02	1.26	15	PASS
N019607-002B	SAMP	25	0.46	6.36	15	PASS
CCV2	CCV	1	20.68	0.95	15	PASS
CCB2	CCB	1	0.025	22.58	15	<PQL
N019607-003B	SAMP	1	25.1	0.97	15	PASS
N019607-003B	SAMP	5	4.67	2.043	15	PASS
N019607-003B	SAMP	25	0.93	5.94	15	PASS
N019607-005B	SAMP	1	38.35	0.76	15	PASS
N019607-005B	SAMP	5	7.42	2.35	15	PASS
N019607-005B	SAMP	25	1.4	4.77	15	PASS
N019607-006B	SAMP	1	36.67	1.26	15	PASS
N019607-006B	SAMP	5	7.25	1.08	15	PASS
N019607-006B	SAMP	25	1.36	2.096	15	PASS

PERCENT RSD SUMMARY: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N019607-007B	SAMP	1	36.018	1.061	15	PASS
CCV3	CCV	1	20.37	0.32	15	PASS
CCB3	CCB	1	0.023	32.63	15	<PQL
N019607-007B	SAMP	5	6.92	0.81	15	PASS
N019607-008B	SAMP	1	42.39	0.52	15	PASS
N019607-008B	SAMP	5	8.61	1.4	15	PASS
N019607-008B	SAMP	25	1.67	1.42	15	PASS
N019607-009B	SAMP	1	65.28	1.72	15	PASS
N019607-009B	SAMP	5	12.81	1.56	15	PASS
N019607-009B	SAMP	25	2.53	0.75	15	PASS
N019607-010B	SAMP	1	98.45	0.52	15	PASS
N019607-010B	SAMP	5	19.38	1.45	15	PASS
N019607-010B	SAMP	25	3.71	1.18	15	PASS
CCV4	CCV	1	20.54	1.099	15	PASS
CCB4	CCB	1	0.02	22.053	15	<PQL
LLCCV1	CCV2	1	0.43	2.48	20	PASS
ICSA2	ICSA	1	0.034	34.068	15	<PQL
ICSAB2	ICSAB	1	23.45	0.9	15	PASS
N019611-008B	SAMP	1	3.44	2.0092	15	PASS
N019611-008B	SAMP	5	0.67	5.41	15	PASS
N019611-010B	SAMP	1	13.84	2.22	15	PASS
N019611-010B	SAMP	5	2.71	0.86	15	PASS
N019611-011B	SAMP	1	14.9	0.68	15	PASS
N019611-011B	SAMP	5	2.97	4.62	15	PASS
N019611-012B	SAMP	1	2.46	4.38	15	PASS
N019611-012B	SAMP	5	0.5	1.91	15	PASS
N019611-013B	SAMP	1	3.53	0.29	15	PASS
N019611-013B	SAMP	5	0.7	6.76	15	PASS
CCV5	CCV	1	20.59	1.12	15	PASS
CCB5	CCB	1	0.022	7.87	15	PASS
N019611-014B	SAMP	1	0.86	7.008	15	PASS
N019611-014B	SAMP	5	0.16	12.28	15	PASS
N019611-015B	SAMP	1	0.9	1.084	15	PASS
N019611-015B	SAMP	5	0.16	1.15	15	PASS
CCV6	CCV	1	20.46	1.39	15	PASS
CCB6	CCB	1	0.024	18.28	15	<PQL
LLCCV2	CCV2	1	0.48	2.85	20	PASS
ICSA3	ICSA	1	0.036	39.91	15	<PQL
ICSAB3	ICSAB	1	23.14	1.42	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160513B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0513001.D	RINSE	RINSE	1	05/13/16 11:50 PM
B0513002.D	Cal Blank	IBLK	1	05/13/16 11:56 PM
B0513003.D	Std1-0.1/1 ppb	ICAL	1	05/14/16 12:01 AM
B0513004.D	Std2-0.5/5 ppb	ICAL	1	05/14/16 12:07 AM
B0513005.D	Std3-5/50 ppb	ICAL	1	05/14/16 12:12 AM
B0513006.D	Std4-10/100 ppb	ICAL	1	05/14/16 12:18 AM
B0513007.D	Std5-20/200 ppb	ICAL	1	05/14/16 12:23 AM
B0513008.D	Std6-40/400 ppb	ICAL	1	05/14/16 12:29 AM
B0513009.D	Std7-100/1000 ppb	ICAL	1	05/14/16 12:34 AM
B0513010.D	Std8-200/2000 ppb	ICAL	1	05/14/16 12:40 AM
B0513011.D	ICV	ICV	1	05/14/16 12:45 AM
B0513012.D	ICB	ICB	1	05/14/16 12:50 AM
B0513013.D	LLICV	CCV1	1	05/14/16 12:56 AM
B0513014.D	ICSA1	ICSA	1	05/14/16 1:01 AM
B0513015.D	ICSAB1	ICSAB	1	05/14/16 1:08 AM
B0513016.D	N019606-005B	SAMP	25	05/14/16 1:13 AM
B0513017.D	N019606-006B	SAMP	5	05/14/16 1:19 AM
B0513018.D	N019606-007B	SAMP	25	05/14/16 1:24 AM
B0513019.D	N019606-008B	SAMP	25	05/14/16 1:30 AM
B0513020.D	N019606-009B	SAMP	25	05/14/16 1:35 AM
B0513021.D	N019606-013B	SAMP	25	05/14/16 1:41 AM
B0513022.D	MB-58340	MBLK	1	05/14/16 1:46 AM
B0513023.D	LCS-58340	LCS	1	05/14/16 1:52 AM
B0513024.D	N019636-001B	SAMP	1	05/14/16 1:57 AM
B0513025.D	N019636-001B	SAMP	5	05/14/16 2:03 AM
B0513026.D	CCV1	CCV	1	05/14/16 2:08 AM
B0513027.D	CCB1	CCB	1	05/14/16 2:14 AM
B0513028.D	N019636-001B-PS	PS	1	05/14/16 2:19 AM
B0513029.D	N019636-001B-MS	MS	1	05/14/16 2:25 AM
B0513030.D	N019636-001B-MSD	MSD	1	05/14/16 2:30 AM
B0513031.D	N019638-001B	SAMP	1	05/14/16 2:36 AM
B0513032.D	N019638-001B-MS	MS	1	05/14/16 2:41 AM
B0513033.D	N019607-001B	SAMP	1	05/14/16 2:47 AM
B0513034.D	N019607-001B	SAMP	5	05/14/16 2:53 AM
B0513035.D	N019607-002B	SAMP	1	05/14/16 2:58 AM
B0513036.D	N019607-002B	SAMP	5	05/14/16 3:04 AM
B0513037.D	N019607-002B	SAMP	25	05/14/16 3:09 AM
B0513038.D	CCV2	CCV	1	05/14/16 3:15 AM
B0513039.D	CCB2	CCB	1	05/14/16 3:21 AM
B0513040.D	N019607-003B	SAMP	1	05/14/16 3:26 AM
B0513041.D	N019607-003B	SAMP	5	05/14/16 3:32 AM
B0513042.D	N019607-003B	SAMP	25	05/14/16 3:37 AM

INJECTION LOG: 160513B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0513043.D	N019607-005B	SAMP	1	05/14/16 3:43 AM
B0513044.D	N019607-005B	SAMP	5	05/14/16 3:48 AM
B0513045.D	N019607-005B	SAMP	25	05/14/16 3:54 AM
B0513046.D	N019607-006B	SAMP	1	05/14/16 3:59 AM
B0513047.D	N019607-006B	SAMP	5	05/14/16 4:05 AM
B0513048.D	N019607-006B	SAMP	25	05/14/16 4:10 AM
B0513049.D	N019607-007B	SAMP	1	05/14/16 4:16 AM
B0513050.D	CCV3	CCV	1	05/14/16 4:22 AM
B0513051.D	CCB3	CCB	1	05/14/16 4:27 AM
B0513052.D	N019607-007B	SAMP	5	05/14/16 4:33 AM
B0513053.D	N019607-008B	SAMP	1	05/14/16 4:38 AM
B0513054.D	N019607-008B	SAMP	5	05/14/16 4:44 AM
B0513055.D	N019607-008B	SAMP	25	05/14/16 4:49 AM
B0513056.D	N019607-009B	SAMP	1	05/14/16 4:55 AM
B0513057.D	N019607-009B	SAMP	5	05/14/16 5:00 AM
B0513058.D	N019607-009B	SAMP	25	05/14/16 5:06 AM
B0513059.D	N019607-010B	SAMP	1	05/14/16 5:11 AM
B0513060.D	N019607-010B	SAMP	5	05/14/16 5:17 AM
B0513061.D	N019607-010B	SAMP	25	05/14/16 5:22 AM
B0513062.D	CCV4	CCV	1	05/14/16 5:28 AM
B0513063.D	CCB4	CCB	1	05/14/16 5:34 AM
B0513064.D	LLCCV1	CCV2	1	05/14/16 5:38 AM
B0513065.D	ICSA2	ICSA	1	05/14/16 5:45 AM
B0513066.D	ICSAB2	ICSAB	1	05/14/16 5:50 AM
B0513067.D	N019611-008B	SAMP	1	05/14/16 5:56 AM
B0513068.D	N019611-008B	SAMP	5	05/14/16 6:01 AM
B0513069.D	N019611-010B	SAMP	1	05/14/16 6:07 AM
B0513070.D	N019611-010B	SAMP	5	05/14/16 6:12 AM
B0513071.D	N019611-011B	SAMP	1	05/14/16 6:18 AM
B0513072.D	N019611-011B	SAMP	5	05/14/16 6:23 AM
B0513073.D	N019611-012B	SAMP	1	05/14/16 6:29 AM
B0513074.D	N019611-012B	SAMP	5	05/14/16 6:34 AM
B0513075.D	N019611-013B	SAMP	1	05/14/16 6:40 AM
B0513076.D	N019611-013B	SAMP	5	05/14/16 6:45 AM
B0513077.D	CCV5	CCV	1	05/14/16 6:51 AM
B0513078.D	CCB5	CCB	1	05/14/16 6:57 AM
B0513079.D	N019611-014B	SAMP	1	05/14/16 7:02 AM
B0513080.D	N019611-014B	SAMP	5	05/14/16 7:08 AM
B0513081.D	N019611-015B	SAMP	1	05/14/16 7:13 AM
B0513082.D	N019611-015B	SAMP	5	05/14/16 7:19 AM
B0513083.D	CCV6	CCV	1	05/14/16 7:24 AM
B0513084.D	CCB6	CCB	1	05/14/16 7:30 AM

INJECTION LOG: 160513B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0513085.D	LLCCV2	CCV2	1	05/14/16 7:35 AM
B0513086.D	ICSA3	ICSA	1	05/14/16 7:41 AM
B0513087.D	ICSAB3	ICSAB	1	05/14/16 7:46 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/9/2016 8:03:14 A**
Prep End Date: **5/9/2016 12:30:00 P**
Initials/ Date: 5/19/2016

Prep Batch **58340** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.6**	**02-18**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58340	Aqueous		25	☐	0	0	25	1.000		
MB-58340	Aqueous		25	☐	0	0	25	1.000		
N019607-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019607-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N019611-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019611-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N019611-011B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/9/2016 8:03:14 A**
Prep End Date: **5/9/2016 12:30:00 P**

Initials/ Date: 5/19/2016

Prep Batch **58340** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.6**	**02-18**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019611-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N019611-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N019611-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N019611-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N019636-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019636-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019636-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019638-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019638-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 May 2016 09:52:28 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	114369.00	0.00	
24 Mg	380105.00	0.00	
25 Mg	50408.00	0.00	
26 Mg	58874.90	0.00	
59 Co	544743.00	0.00	
115 In	1042260.00	0.00	
206 Pb	356095.00	0.00	
207 Pb	309230.00	0.00	
208 Pb	763882.00	0.00	

RSD (%)

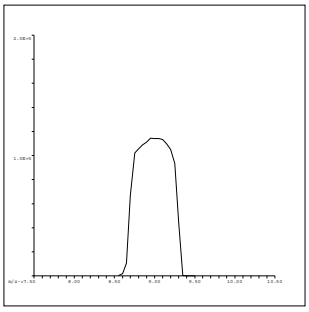
Element	Actual	Required	Flag
9 Be	0.64	5.00	
24 Mg	0.98	5.00	
25 Mg	1.85	5.00	
26 Mg	1.71	5.00	
59 Co	0.89	5.00	
115 In	0.74	5.00	
206 Pb	0.76	5.00	
207 Pb	1.23	5.00	
208 Pb	0.91	5.00	

Ion Ratio

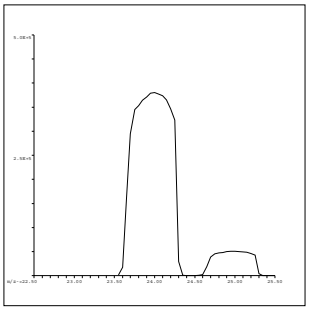
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

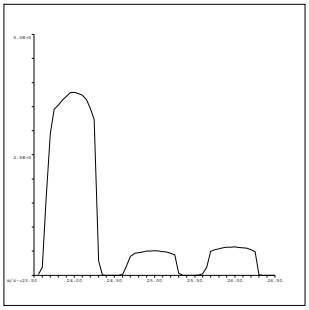
Element	Actual	Required	Flag



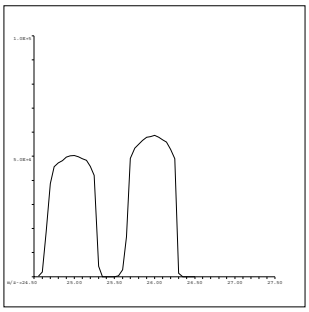
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



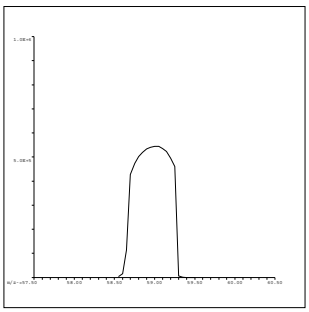
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



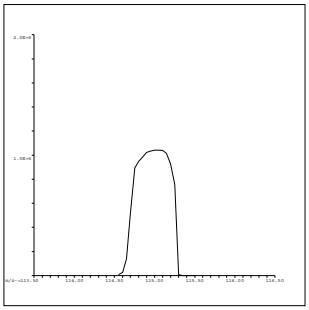
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



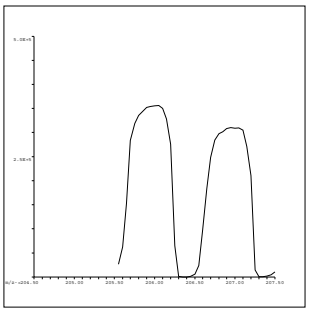
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



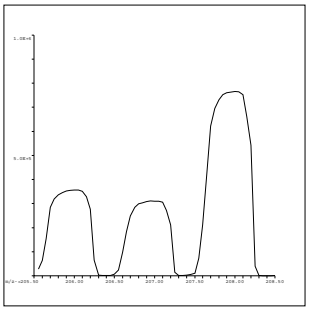
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



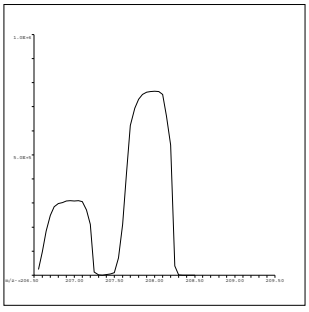
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160513B

Instrument ID: ICPMS-02

Analyte	Data File	B0513002.D	B0513003.D	B0513004.D	B0513005.D	B0513006.D	B0513007.D	B0513008.D	B0513009.D	B0513010.D	
	Acq. Date-Time	05/13/2016 11:56 PM	05/14/2016 12:01 AM	05/14/2016 12:07 AM	05/14/2016 12:12 AM	05/14/2016 12:18 AM	05/14/2016 12:23 AM	05/14/2016 12:29 AM	05/14/2016 12:34 AM	05/14/2016 12:40 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	114688		110337.9	102946.7	98551.6	97050.8	96079.5	93640.2	95760	
55 Mn [2]	CPS	331.4		2533.1	22234.1	42009	82864.2	161740.3	394976	790483.2	0.9999
52 Cr [2]	CPS	1210		5321	39987.5	76064.9	147709.3	291656	707585.6	1421823.5	1.0000
72 Ge (ISTD) [1]	CPS	87729.7		86778.6	82495.2	79125.8	77655	76818.8	74492.6	75201.8	
78 Se [1]	CPS	0		205.6	2011.3	4095.2	8151.3	15944	38376.3	76343.1	1.0000
72 Ge (ISTD) [2]	CPS	74947.7	77551	73034.8	69173.6	66283.1	64696.8	64261.7	62591.9	63595.6	
75 As [2]	CPS	9.3	95.6	395.6	3913.4	7558.3	14894.5	29430.9	71546.4	143685.3	1.0000
103 Rh (ISTD) [2]	CPS	2257002.8		2264191.1	2163179.1	2091152.7	2062663.1	2043626.1	1999894.8	2003015.1	
95 Mo [2]	CPS	25.6		2605.9	24835.7	47945.9	93691.9	185554.3	459811.5	928302.7	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.358	0.10	10.00	0	93.6	90	110				
Manganese	97.381	0.50	100.0	0	97.4	90	110				
Molybdenum	9.549	0.50	10.00	0	95.5	90	110				
Selenium	9.517	0.50	10.00	0	95.2	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ZZZZZZ**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.094	0.10	0.1000	0	93.8	80	120				
Manganese	0.476	0.50	0.5000	0	95.1	80	120				
Molybdenum	0.425	0.50	0.5000	0	85.1	80	120				
Selenium	0.431	0.50	0.5000	0	86.2	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.513	0.10	20.00	0	103	90	110				
Manganese	20.049	0.50	20.00	0	100	90	110				
Molybdenum	19.823	0.50	20.00	0	99.1	90	110				
Selenium	19.787	0.50	20.00	0	98.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.400	0.10	20.00	0	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.582	0.50	20.00	0	97.9	90	110				
Molybdenum	20.682	0.50	20.00	0	103	90	110				
Selenium	18.767	0.50	20.00	0	93.8	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.468	0.10	20.00	0	102	90	110				
Manganese	19.637	0.50	20.00	0	98.2	90	110				
Molybdenum	20.366	0.50	20.00	0	102	90	110				
Selenium	18.984	0.50	20.00	0	94.9	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.263	0.10	20.00	0	101	90	110				
Manganese	19.460	0.50	20.00	0	97.3	90	110				
Molybdenum	20.541	0.50	20.00	0	103	90	110				
Selenium	18.109	0.50	20.00	0	90.5	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ZZZZZZ**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.109	0.10	0.1000	0	109	70	130				
Manganese	0.506	0.50	0.5000	0	101	70	130				
Molybdenum	0.435	0.50	0.5000	0	86.9	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ZZZZZZ**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.473	0.50	0.5000	0	94.7	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.338	0.10	20.00	0	102	90	110				
Manganese	19.768	0.50	20.00	0	98.8	90	110				
Molybdenum	20.585	0.50	20.00	0	103	90	110				
Selenium	19.489	0.50	20.00	0	97.4	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCV**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.305	0.10	20.00	0	102	90	110				
Manganese	19.845	0.50	20.00	0	99.2	90	110				
Molybdenum	20.463	0.50	20.00	0	102	90	110				
Selenium	19.272	0.50	20.00	0	96.4	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ZZZZZZ**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	70	130				
Manganese	0.520	0.50	0.5000	0	104	70	130				
Molybdenum	0.477	0.50	0.5000	0	95.3	70	130				
Selenium	0.401	0.50	0.5000	0	80.2	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **ICV**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.215	1.0	10.00	0	92.1	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **ZZZZZZ**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.921	1.0	1.000	0	92.1	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCV**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.848	1.0	20.00	0	99.2	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCV**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.777	1.0	20.00	0	98.9	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCV**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.771	1.0	20.00	0	98.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCV**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.712	1.0	20.00	0	98.6	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **ZZZZZZ**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.897	1.0	1.000	0	89.7	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCV**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.785	1.0	20.00	0	98.9	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCV**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.587	1.0	20.00	0	97.9	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **ZZZZZZ**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.958	1.0	1.000	0	95.8	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **CCB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **ICB**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.029	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCB**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCB**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.050	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCB**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCB**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCB**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **CCB**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSA**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSAB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.995	0.10	20.00	0	100	80	120				
Manganese	20.472	0.50	20.00	0	102	80	120				
Molybdenum	23.156	0.50	20.00	0	116	80	120				
Selenium	17.472	0.50	20.00	0	87.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSA**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.033	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSAB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.918	0.10	20.00	0	99.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSAB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.607	0.50	20.00	0	103	80	120				
Molybdenum	23.450	0.50	20.00	0	117	80	120				
Selenium	16.570	0.50	20.00	0	82.8	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSA**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108470**
Client ID: **ICSAB**	Batch ID: **R108470**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.150	0.10	20.00	0	101	80	120				
Manganese	21.065	0.50	20.00	0	105	80	120				
Molybdenum	23.139	0.50	20.00	0	116	80	120				
Selenium	16.833	0.50	20.00	0	84.2	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108469
Client ID:	ICSA	Batch ID:	R108469	TestNo:	EPA 6020			Analysis Date:	5/14/2016	SeqNo:	2327021

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.262	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108469
Client ID:	ICSAB	Batch ID:	R108469	TestNo:	EPA 6020			Analysis Date:	5/14/2016	SeqNo:	2327022

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.324	1.0	20.00	0	96.6	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108469
Client ID:	ICSA	Batch ID:	R108469	TestNo:	EPA 6020			Analysis Date:	5/14/2016	SeqNo:	2327072

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.151	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108469
Client ID:	ICSAB	Batch ID:	R108469	TestNo:	EPA 6020			Analysis Date:	5/14/2016	SeqNo:	2327073

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.449	1.0	20.00	0	97.2	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108469
Client ID:	ICSA	Batch ID:	R108469	TestNo:	EPA 6020			Analysis Date:	5/14/2016	SeqNo:	2327093

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.145	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108469**
Client ID: **ICSAB**	Batch ID: **R108469**	TestNo: **EPA 6020**		Analysis Date: **5/14/2016**	SeqNo: **2327094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.435	1.0	20.00	0	97.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	114688	114688	100	PASS	70-130	74947.7	74947.7	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	117290.5	114688	102.27	PASS	70-130	77551	74947.7	103.47	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	110337.9	114688	96.21	PASS	70-130	73034.8	74947.7	97.45	PASS	70-130
Std3-5/50 ppb	ICAL	1	102946.7	114688	89.76	PASS	70-130	69173.6	74947.7	92.3	PASS	70-130
Std4-10/100 ppb	ICAL	1	98551.6	114688	85.93	PASS	70-130	66283.1	74947.7	88.44	PASS	70-130
Std5-20/200 ppb	ICAL	1	97050.8	114688	84.62	PASS	70-130	64696.8	74947.7	86.32	PASS	70-130
Std6-40/400 ppb	ICAL	1	96079.5	114688	83.77	PASS	70-130	64261.7	74947.7	85.74	PASS	70-130
Std7-100/1000 ppb	ICAL	1	93640.2	114688	81.65	PASS	70-130	62591.9	74947.7	83.51	PASS	70-130
Std8-200/2000 ppb	ICAL	1	95760	114688	83.5	PASS	70-130	63595.6	74947.7	84.85	PASS	70-130
ICV	ICV	1	89449.8	114688	77.99	PASS	70-130	61347.3	74947.7	81.85	PASS	70-130
ICB	ICB	1	81439.2	114688	71.009	PASS	70-130	58188.2	74947.7	77.64	PASS	70-130
LLICV	CCV1	1	82309.1	114688	71.77	PASS	70-130	58032	74947.7	77.43	PASS	70-130
ICSA1	ICSA	1	107155.8	114688	93.43	PASS	70-130	67019.4	74947.7	89.42	PASS	70-130
ICSAB1	ICSAB	1	126993.7	114688	110.73	PASS	70-130	75080.7	74947.7	100.18	PASS	70-130
MB-58340	MBLK	1	108943.8	114688	94.99	PASS	70-130	73207.1	74947.7	97.68	PASS	70-130
LCS-58340	LCS	1	112716.8	114688	98.28	PASS	70-130	74532.8	74947.7	99.45	PASS	70-130
N019636-001B	SAMP	1	121669.9	114688	106.09	PASS	70-130	74843	74947.7	99.86	PASS	70-130
N019636-001B	SAMP	5	105655.5	114688	92.12	PASS	70-130	68819.3	74947.7	91.82	PASS	70-130
CCV1	CCV	1	105661.2	114688	92.13	PASS	70-130	69272.1	74947.7	92.43	PASS	70-130
CCB1	CCB	1	100610.4	114688	87.73	PASS	70-130	67409	74947.7	89.94	PASS	70-130
N019636-001B-PS	PS	1	108381	114688	94.5	PASS	70-130	67698.7	74947.7	90.33	PASS	70-130
N019636-001B-MS	MS	1	106898.2	114688	93.21	PASS	70-130	66515.9	74947.7	88.75	PASS	70-130
N019636-001B-MSD	MSD	1	107667.6	114688	93.88	PASS	70-130	66478.5	74947.7	88.7	PASS	70-130
N019638-001B	SAMP	1	108944.6	114688	94.99	PASS	70-130	64389.8	74947.7	85.91	PASS	70-130
N019638-001B-MS	MS	1	112079.5	114688	97.73	PASS	70-130	66983.9	74947.7	89.37	PASS	70-130
N019607-001B	SAMP	1	103419.6	114688	90.17	PASS	70-130	63940.4	74947.7	85.31	PASS	70-130
N019607-001B	SAMP	5	109826	114688	95.76	PASS	70-130	71970.7	74947.7	96.028	PASS	70-130
N019607-002B	SAMP	1	83477.5	114688	72.79	PASS	70-130	48607.9	74947.7	64.86	NR!	70-130
N019607-002B	SAMP	5	105574.4	114688	92.054	PASS	70-130	65984.1	74947.7	88.04	PASS	70-130
N019607-002B	SAMP	25	88160	114688	76.87	PASS	70-130	59905.3	74947.7	79.93	PASS	70-130
CCV2	CCV	1	120353.3	114688	104.94	PASS	70-130	78912	74947.7	105.29	PASS	70-130
CCB2	CCB	1	103641.2	114688	90.37	PASS	70-130	70356.7	74947.7	93.87	PASS	70-130
N019607-003B	SAMP	1	98579.8	114688	85.95	PASS	70-130	60336.7	74947.7	80.51	PASS	70-130
N019607-003B	SAMP	5	101076.9	114688	88.13	PASS	70-130	64765.9	74947.7	86.41	PASS	70-130
N019607-003B	SAMP	25	105512.7	114688	92	PASS	70-130	70168.1	74947.7	93.62	PASS	70-130
N019607-005B	SAMP	1	71185.2	114688	62.069	NR!	70-130	39086.8	74947.7	52.15	NR!	70-130
N019607-005B	SAMP	5	80710.8	114688	70.37	PASS	70-130	49483.9	74947.7	66.025	NR!	70-130
N019607-005B	SAMP	25	123067.1	114688	107.31	PASS	70-130	77765.4	74947.7	103.76	PASS	70-130
N019607-006B	SAMP	1	89840.2	114688	78.33	PASS	70-130	47224	74947.7	63.009	NR!	70-130
N019607-006B	SAMP	5	104864.5	114688	91.43	PASS	70-130	62715.2	74947.7	83.68	PASS	70-130
N019607-006B	SAMP	25	116442.3	114688	101.53	PASS	70-130	74492.9	74947.7	99.39	PASS	70-130

INTERNAL STANDARD: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019607-007B	SAMP	1	106836	114688	93.15	PASS	70-130	63721.8	74947.7	85.022	PASS	70-130
CCV3	CCV	1	121523.7	114688	105.96	PASS	70-130	80130.4	74947.7	106.92	PASS	70-130
CCB3	CCB	1	112760.7	114688	98.32	PASS	70-130	74992.6	74947.7	100.06	PASS	70-130
N019607-007B	SAMP	5	114925.8	114688	100.21	PASS	70-130	73222.2	74947.7	97.7	PASS	70-130
N019607-008B	SAMP	1	78537.7	114688	68.48	NR!	70-130	42711.6	74947.7	56.99	NR!	70-130
N019607-008B	SAMP	5	107310.9	114688	93.57	PASS	70-130	64019.6	74947.7	85.42	PASS	70-130
N019607-008B	SAMP	25	112617.5	114688	98.19	PASS	70-130	71885.3	74947.7	95.91	PASS	70-130
N019607-009B	SAMP	1	92410.4	114688	80.58	PASS	70-130	51869.2	74947.7	69.21	NR!	70-130
N019607-009B	SAMP	5	95151.7	114688	82.97	PASS	70-130	58511.5	74947.7	78.07	PASS	70-130
N019607-009B	SAMP	25	97079	114688	84.65	PASS	70-130	62884.4	74947.7	83.9	PASS	70-130
N019607-010B	SAMP	1	87036.7	114688	75.89	PASS	70-130	49468.1	74947.7	66.004	NR!	70-130
N019607-010B	SAMP	5	101090.7	114688	88.14	PASS	70-130	61893.8	74947.7	82.58	PASS	70-130
N019607-010B	SAMP	25	104556.4	114688	91.17	PASS	70-130	68750	74947.7	91.73	PASS	70-130
CCV4	CCV	1	120071.6	114688	104.69	PASS	70-130	79938.2	74947.7	106.66	PASS	70-130
CCB4	CCB	1	113120.3	114688	98.63	PASS	70-130	75630.9	74947.7	100.91	PASS	70-130
LLCCV1	CCV2	1	87919.7	114688	76.66	PASS	70-130	61510.1	74947.7	82.071	PASS	70-130
ICSA2	ICSA	1	121139.9	114688	105.63	PASS	70-130	75410	74947.7	100.62	PASS	70-130
ICSAB2	ICSAB	1	120726.6	114688	105.27	PASS	70-130	75300.6	74947.7	100.47	PASS	70-130
N019611-008B	SAMP	1	103830.6	114688	90.53	PASS	70-130	67541.2	74947.7	90.12	PASS	70-130
N019611-008B	SAMP	5	104432.4	114688	91.058	PASS	70-130	69832.4	74947.7	93.17	PASS	70-130
N019611-010B	SAMP	1	104995.3	114688	91.55	PASS	70-130	67744.4	74947.7	90.39	PASS	70-130
N019611-010B	SAMP	5	103538.6	114688	90.28	PASS	70-130	69568.9	74947.7	92.82	PASS	70-130
N019611-011B	SAMP	1	101386.3	114688	88.4	PASS	70-130	65636.3	74947.7	87.58	PASS	70-130
N019611-011B	SAMP	5	96286.1	114688	83.95	PASS	70-130	65368.5	74947.7	87.22	PASS	70-130
N019611-012B	SAMP	1	102917.9	114688	89.74	PASS	70-130	66345.4	74947.7	88.52	PASS	70-130
N019611-012B	SAMP	5	101389.8	114688	88.4	PASS	70-130	68296.6	74947.7	91.13	PASS	70-130
N019611-013B	SAMP	1	99749.7	114688	86.97	PASS	70-130	64777.5	74947.7	86.43	PASS	70-130
N019611-013B	SAMP	5	98319.6	114688	85.73	PASS	70-130	67328.5	74947.7	89.83	PASS	70-130
CCV5	CCV	1	105154.9	114688	91.69	PASS	70-130	71992.6	74947.7	96.057	PASS	70-130
CCB5	CCB	1	101464.8	114688	88.47	PASS	70-130	69116.9	74947.7	92.22	PASS	70-130
N019611-014B	SAMP	1	100751.6	114688	87.85	PASS	70-130	64472.7	74947.7	86.024	PASS	70-130
N019611-014B	SAMP	5	95666.1	114688	83.41	PASS	70-130	64271.9	74947.7	85.76	PASS	70-130
N019611-015B	SAMP	1	99035.8	114688	86.35	PASS	70-130	64002	74947.7	85.4	PASS	70-130
N019611-015B	SAMP	5	97358.2	114688	84.89	PASS	70-130	65352.6	74947.7	87.2	PASS	70-130
CCV6	CCV	1	107873	114688	94.058	PASS	70-130	73625.4	74947.7	98.24	PASS	70-130
CCB6	CCB	1	105157.8	114688	91.69	PASS	70-130	72551.9	74947.7	96.8	PASS	70-130
LLCCV2	CCV2	1	135011.5	114688	117.72	PASS	70-130	91657.8	74947.7	122.3	PASS	70-130
ICSA3	ICSA	1	116120.9	114688	101.25	PASS	70-130	73135.2	74947.7	97.58	PASS	70-130
ICSAB3	ICSAB	1	124336.3	114688	108.41	PASS	70-130	77650.6	74947.7	103.61	PASS	70-130

INTERNAL STANDARD: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	87729.7	87729.7	100	PASS	70-130	2257002.8	2257002.8	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	91352.2	87729.7	104.13	PASS	70-130	2370992.7	2257002.8	105.05	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	86778.6	87729.7	98.92	PASS	70-130	2264191.1	2257002.8	100.32	PASS	70-130
Std3-5/50 ppb	ICAL	1	82495.2	87729.7	94.033	PASS	70-130	2163179.1	2257002.8	95.84	PASS	70-130
Std4-10/100 ppb	ICAL	1	79125.8	87729.7	90.19	PASS	70-130	2091152.7	2257002.8	92.65	PASS	70-130
Std5-20/200 ppb	ICAL	1	77655	87729.7	88.52	PASS	70-130	2062663.1	2257002.8	91.39	PASS	70-130
Std6-40/400 ppb	ICAL	1	76818.8	87729.7	87.56	PASS	70-130	2043626.1	2257002.8	90.55	PASS	70-130
Std7-100/1000 ppb	ICAL	1	74492.6	87729.7	84.91	PASS	70-130	1999894.8	2257002.8	88.61	PASS	70-130
Std8-200/2000 ppb	ICAL	1	75201.8	87729.7	85.72	PASS	70-130	2003015.1	2257002.8	88.75	PASS	70-130
ICV	ICV	1	63788.7	87729.7	72.71	PASS	70-130	2064788.1	2257002.8	91.48	PASS	70-130
ICB	ICB	1	66609.8	87729.7	75.93	PASS	70-130	1866119.8	2257002.8	82.68	PASS	70-130
LLICV	CCV1	1	67238.9	87729.7	76.64	PASS	70-130	1853801.1	2257002.8	82.14	PASS	70-130
ICSA1	ICSA	1	76813.2	87729.7	87.56	PASS	70-130	1885833.1	2257002.8	83.55	PASS	70-130
ICSAB1	ICSAB	1	89289.4	87729.7	101.78	PASS	70-130	2091308.4	2257002.8	92.66	PASS	70-130
MB-58340	MBLK	1	88775.8	87729.7	101.19	PASS	70-130	2219801.5	2257002.8	98.35	PASS	70-130
LCS-58340	LCS	1	89024.8	87729.7	101.48	PASS	70-130	2313154.7	2257002.8	102.49	PASS	70-130
N019636-001B	SAMP	1	92558.6	87729.7	105.5	PASS	70-130	2199595.8	2257002.8	97.46	PASS	70-130
N019636-001B	SAMP	5	82885.7	87729.7	94.48	PASS	70-130	2070433.4	2257002.8	91.73	PASS	70-130
CCV1	CCV	1	84859.2	87729.7	96.73	PASS	70-130	2192774.7	2257002.8	97.15	PASS	70-130
CCB1	CCB	1	81930.5	87729.7	93.39	PASS	70-130	2125992.8	2257002.8	94.2	PASS	70-130
N019636-001B-PS	PS	1	81251.7	87729.7	92.62	PASS	70-130	1954229.9	2257002.8	86.59	PASS	70-130
N019636-001B-MS	MS	1	77401.8	87729.7	88.23	PASS	70-130	1929953.2	2257002.8	85.51	PASS	70-130
N019636-001B-MSD	MSD	1	78073.7	87729.7	88.99	PASS	70-130	1914323	2257002.8	84.82	PASS	70-130
N019638-001B	SAMP	1	75414.8	87729.7	85.96	PASS	70-130	1776327.3	2257002.8	78.7	PASS	70-130
N019638-001B-MS	MS	1	77814.4	87729.7	88.7	PASS	70-130	1828459.4	2257002.8	81.013	PASS	70-130
N019607-001B	SAMP	1	82514.5	87729.7	94.055	PASS	70-130	1718066.9	2257002.8	76.12	PASS	70-130
N019607-001B	SAMP	5	87971.7	87729.7	100.28	PASS	70-130	1989708.5	2257002.8	88.16	PASS	70-130
N019607-002B	SAMP	1	60082.4	87729.7	68.49	NR!	70-130	1257236.3	2257002.8	55.7	NR!	70-130
N019607-002B	SAMP	5	82903.7	87729.7	94.5	PASS	70-130	1765376	2257002.8	78.22	PASS	70-130
N019607-002B	SAMP	25	61147.5	87729.7	69.7	NR!	70-130	1908676.5	2257002.8	84.57	PASS	70-130
CCV2	CCV	1	97651.2	87729.7	111.31	PASS	70-130	2265392.9	2257002.8	100.37	PASS	70-130
CCB2	CCB	1	83692.2	87729.7	95.4	PASS	70-130	2026894.2	2257002.8	89.8	PASS	70-130
N019607-003B	SAMP	1	70917.7	87729.7	80.84	PASS	70-130	1590262.3	2257002.8	70.46	PASS	70-130
N019607-003B	SAMP	5	80729.9	87729.7	92.021	PASS	70-130	1777060.6	2257002.8	78.74	PASS	70-130
N019607-003B	SAMP	25	84397	87729.7	96.2	PASS	70-130	1948113.5	2257002.8	86.31	PASS	70-130
N019607-005B	SAMP	1	48698.3	87729.7	55.51	NR!	70-130	979145.2	2257002.8	43.38	NR!	70-130
N019607-005B	SAMP	5	64952.8	87729.7	74.037	PASS	70-130	1284559.8	2257002.8	56.91	NR!	70-130
N019607-005B	SAMP	25	96824.6	87729.7	110.37	PASS	70-130	2115478.6	2257002.8	93.73	PASS	70-130
N019607-006B	SAMP	1	56588.1	87729.7	64.5	NR!	70-130	1201932.3	2257002.8	53.25	NR!	70-130
N019607-006B	SAMP	5	75487.2	87729.7	86.045	PASS	70-130	1645686.7	2257002.8	72.91	PASS	70-130
N019607-006B	SAMP	25	87260.6	87729.7	99.47	PASS	70-130	2017326.5	2257002.8	89.38	PASS	70-130

INTERNAL STANDARD: 160513B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019607-007B	SAMP	1	77274.4	87729.7	88.082	PASS	70-130	1658847.1	2257002.8	73.5	PASS	70-130
CCV3	CCV	1	97476.7	87729.7	111.11	PASS	70-130	2315597.2	2257002.8	102.6	PASS	70-130
CCB3	CCB	1	91797.9	87729.7	104.64	PASS	70-130	2182922.7	2257002.8	96.72	PASS	70-130
N019607-007B	SAMP	5	91230.1	87729.7	103.99	PASS	70-130	2025133.2	2257002.8	89.73	PASS	70-130
N019607-008B	SAMP	1	47448.7	87729.7	54.085	NR!	70-130	1064281.3	2257002.8	47.15	NR!	70-130
N019607-008B	SAMP	5	79401.3	87729.7	90.51	PASS	70-130	1674148.8	2257002.8	74.18	PASS	70-130
N019607-008B	SAMP	25	89723.5	87729.7	102.27	PASS	70-130	1915537.8	2257002.8	84.87	PASS	70-130
N019607-009B	SAMP	1	59756.6	87729.7	68.11	NR!	70-130	1285224.5	2257002.8	56.94	NR!	70-130
N019607-009B	SAMP	5	75639.2	87729.7	86.22	PASS	70-130	1544490.2	2257002.8	68.43	NR!	70-130
N019607-009B	SAMP	25	81743.8	87729.7	93.18	PASS	70-130	1680627.5	2257002.8	74.46	PASS	70-130
N019607-010B	SAMP	1	58742.3	87729.7	66.96	NR!	70-130	1244418.4	2257002.8	55.14	NR!	70-130
N019607-010B	SAMP	5	72469.3	87729.7	82.61	PASS	70-130	1629761.4	2257002.8	72.21	PASS	70-130
N019607-010B	SAMP	25	84326.8	87729.7	96.12	PASS	70-130	1868477.4	2257002.8	82.79	PASS	70-130
CCV4	CCV	1	96573	87729.7	110.08	PASS	70-130	2282826.5	2257002.8	101.14	PASS	70-130
CCB4	CCB	1	93185.5	87729.7	106.22	PASS	70-130	2177867.9	2257002.8	96.49	PASS	70-130
LLCCV1	CCV2	1	65370.7	87729.7	74.51	PASS	70-130	2025282.7	2257002.8	89.73	PASS	70-130
ICSA2	ICSA	1	86318.2	87729.7	98.39	PASS	70-130	2054370.2	2257002.8	91.022	PASS	70-130
ICSAB2	ICSAB	1	89557.4	87729.7	102.08	PASS	70-130	1971864.1	2257002.8	87.37	PASS	70-130
N019611-008B	SAMP	1	82629.2	87729.7	94.19	PASS	70-130	1848382.6	2257002.8	81.9	PASS	70-130
N019611-008B	SAMP	5	84880.6	87729.7	96.75	PASS	70-130	1992241.1	2257002.8	88.27	PASS	70-130
N019611-010B	SAMP	1	81707.8	87729.7	93.14	PASS	70-130	1846193.3	2257002.8	81.8	PASS	70-130
N019611-010B	SAMP	5	83463.7	87729.7	95.14	PASS	70-130	1959134.7	2257002.8	86.8	PASS	70-130
N019611-011B	SAMP	1	80971.8	87729.7	92.3	PASS	70-130	1791904	2257002.8	79.39	PASS	70-130
N019611-011B	SAMP	5	77841.3	87729.7	88.73	PASS	70-130	1787849.6	2257002.8	79.21	PASS	70-130
N019611-012B	SAMP	1	81196.7	87729.7	92.55	PASS	70-130	1816918.7	2257002.8	80.5	PASS	70-130
N019611-012B	SAMP	5	81667.5	87729.7	93.09	PASS	70-130	1918776.6	2257002.8	85.014	PASS	70-130
N019611-013B	SAMP	1	79557.3	87729.7	90.68	PASS	70-130	1806472.3	2257002.8	80.039	PASS	70-130
N019611-013B	SAMP	5	80830.4	87729.7	92.14	PASS	70-130	1935773.3	2257002.8	85.77	PASS	70-130
CCV5	CCV	1	87975.8	87729.7	100.28	PASS	70-130	2078307.6	2257002.8	92.083	PASS	70-130
CCB5	CCB	1	84773.2	87729.7	96.63	PASS	70-130	2036325.2	2257002.8	90.22	PASS	70-130
N019611-014B	SAMP	1	76844.4	87729.7	87.59	PASS	70-130	1762344.6	2257002.8	78.083	PASS	70-130
N019611-014B	SAMP	5	77700.7	87729.7	88.57	PASS	70-130	1801999	2257002.8	79.84	PASS	70-130
N019611-015B	SAMP	1	74986	87729.7	85.47	PASS	70-130	1718246.4	2257002.8	76.13	PASS	70-130
N019611-015B	SAMP	5	79163.5	87729.7	90.24	PASS	70-130	1834394.9	2257002.8	81.28	PASS	70-130
CCV6	CCV	1	89240.5	87729.7	101.72	PASS	70-130	2153401	2257002.8	95.41	PASS	70-130
CCB6	CCB	1	88489.1	87729.7	100.87	PASS	70-130	2128896.4	2257002.8	94.32	PASS	70-130
LLCCV2	CCV2	1	112145.6	87729.7	127.83	PASS	70-130	2729722.7	2257002.8	120.94	PASS	70-130
ICSA3	ICSA	1	84756.5	87729.7	96.61	PASS	70-130	1979881.4	2257002.8	87.72	PASS	70-130
ICSAB3	ICSAB	1	94459.6	87729.7	107.67	PASS	70-130	2094242	2257002.8	92.79	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N019607
Test Method: EPA 6020
Analysis Date: 5/13/2016

Matrix: Groundwater
Batch No.: 58340

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N019636-001 DT 5X	Arsenic	ug/L	1.130791	NA	0.823092	37.38%	10
N019636-001 DT 5X	Chromium	ug/L	1.934762	NA	1.608448	20.29%	10
N019636-001 DT 5X	Manganese	ug/L	0	NA	0		10
N019636-001 DT 5X	Molybdenum	ug/L	2.380533	NA	2.220705	7.20%	10
N019636-001 DT 5X	Selenium	ug/L	0.407525	NA	0.313467	30.01%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N019636-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **108470**
Client ID: **ZZZZZZ** Batch ID: **58340** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/14/2016** SeqNo: **2327112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.209	0.10	10.00	0.8231	93.9	80	120				
Manganese	89.850	0.50	100.0	0	89.9	80	120				
Molybdenum	13.405	0.50	10.00	2.221	112	80	120				
Selenium	8.555	0.50	10.00	0.3135	82.4	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019607
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N019636-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108469
Client ID:	ZZZZZZ	Batch ID:	58340	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/14/2016	SeqNo:	2327035

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.846	1.0	10.00	1.608	92.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Detection Limit
Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

ACCEPTANCE CRITERIA: MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	MDL*10	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0313	0.3133	0.3000	0.187	0.50	0.515	103
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0248	0.2485	0.3000	0.049	0.10	0.103	103
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699	0.6986	0.3000	0.403	1.00	1.245	125
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0430	0.4304	0.3000	0.185	0.50	0.524	105
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0473	0.4734	0.3000	0.174	0.50	0.501	100
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0192	0.1925	0.3000	0.321	1.00	0.973	97
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263	0.2630	0.3000	0.163	0.50	0.475	95
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2626	2.6262	0.3000	0.328	1.00	1.062	106
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7517	7.5170	0.3000	0.605	10.00	11.338	113
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367	0.3670	0.3000	0.343	1.00	1.018	102
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0554	0.5543	0.3000	0.193	0.50	0.605	121
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0385	0.3853	0.3000	0.247	0.50	0.660	132
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0395	0.3954	0.3000	0.341	1.00	1.002	100
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276	0.2760	0.3000	0.170	0.50	0.502	100
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590	0.5899	0.3000	0.247	1.00	1.029	103
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296	0.2961	0.3000	0.186	0.50	0.549	110
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0327	0.3272	0.3000	0.181	0.50	0.533	107
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213	0.2133	0.3000	0.221	1.00	0.873	87
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2678	2.6780	0.3000	3.286	10.00	10.085	101

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N019628

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

RAW DATA

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N019628

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-33
Sample Receiving Items	34-38
List of Analysts	39
Raw Data	
EPA 218.6	40-202
SM 4500-NO3F	203-236
EPA 6020_Dissolved	237-965

May 21, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019628

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 04, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019628

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N019628-003 and N019628-007 due to matrix interference. Samples were analyzed at lower dilution however retention time criteria and matrix spike were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N019628-001, N019628-002, N019628-003, N019628-004 and N019628-006 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) is outside recovery criteria for Chromium on QC samples N019654-001B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *21-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N019628
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019628-001A	MW-40D-SMT-Q216	Groundwater	5/4/2016 8:00:00 AM	5/4/2016	5/21/2016
N019628-001B	MW-40D-SMT-Q216	Groundwater	5/4/2016 8:00:00 AM	5/4/2016	5/21/2016
N019628-001C	MW-40D-SMT-Q216	Groundwater	5/4/2016 8:00:00 AM	5/4/2016	5/21/2016
N019628-002A	MW-40D-Q216	Groundwater	5/4/2016 8:49:00 AM	5/4/2016	5/21/2016
N019628-002B	MW-40D-Q216	Groundwater	5/4/2016 8:49:00 AM	5/4/2016	5/21/2016
N019628-002C	MW-40D-Q216	Groundwater	5/4/2016 8:49:00 AM	5/4/2016	5/21/2016
N019628-003A	MW-68BR-280-Q216	Groundwater	5/4/2016 12:06:00 PM	5/4/2016	5/21/2016
N019628-003B	MW-68BR-280-Q216	Groundwater	5/4/2016 12:06:00 PM	5/4/2016	5/21/2016
N019628-003C	MW-68BR-280-Q216	Groundwater	5/4/2016 12:06:00 PM	5/4/2016	5/21/2016
N019628-004A	MW-68-240-Q216	Groundwater	5/4/2016 12:49:00 PM	5/4/2016	5/21/2016
N019628-004B	MW-68-240-Q216	Groundwater	5/4/2016 12:49:00 PM	5/4/2016	5/21/2016
N019628-004C	MW-68-240-Q216	Groundwater	5/4/2016 12:49:00 PM	5/4/2016	5/21/2016
N019628-005A	MW-68-180-Q216	Groundwater	5/4/2016 1:27:00 PM	5/4/2016	5/21/2016
N019628-005B	MW-68-180-Q216	Groundwater	5/4/2016 1:27:00 PM	5/4/2016	5/21/2016
N019628-005C	MW-68-180-Q216	Groundwater	5/4/2016 1:27:00 PM	5/4/2016	5/21/2016
N019628-006A	MW-66BR-270-Q216	Groundwater	5/4/2016 1:55:00 PM	5/4/2016	5/21/2016
N019628-006B	MW-66BR-270-Q216	Groundwater	5/4/2016 1:55:00 PM	5/4/2016	5/21/2016
N019628-006C	MW-66BR-270-Q216	Groundwater	5/4/2016 1:55:00 PM	5/4/2016	5/21/2016
N019628-007A	MW-48-Q216	Groundwater	5/4/2016 2:15:00 PM	5/4/2016	5/21/2016
N019628-007B	MW-48-Q216	Groundwater	5/4/2016 2:15:00 PM	5/4/2016	5/21/2016
N019628-008A	MW-720-Q216	Groundwater	5/4/2016 2:30:00 PM	5/4/2016	5/21/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 8:00:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	120	0.66	2.0		µg/L	10	5/12/2016 03:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160511B**	QC Batch: **58354**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	110	0.019	1.0		µg/L	1	5/11/2016 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 8:49:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	130	1.3	4.0		µg/L	20	5/12/2016 06:13 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160511B**	QC Batch: **58354**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	110	0.019	1.0		µg/L	1	5/11/2016 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 12:06:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/12/2016 06:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160511B**	QC Batch: **58354**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/11/2016 01:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 12:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	2100	13	40		µg/L	200	5/12/2016 04:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160516B**	QC Batch: **58354**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	2100	0.48	25		µg/L	25	5/16/2016 04:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 1:27:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	12000	160	500		µg/L	2500	5/12/2016 04:35 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160516B**	QC Batch: **58354**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	11000	1.9	100		µg/L	100	5/16/2016 04:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 1:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2016 04:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160511B**	QC Batch: **58354**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/11/2016 12:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 2:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/12/2016 07:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160518A**	QC Batch: **58354**			PrepDate	**5/9/2016**		Analyst: **CEI**
Chromium	1.1	0.019	1.0		µg/L	1	5/18/2016 05:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019628
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019628-008

Client Sample ID: MW-720-Q216
Collection Date: 5/4/2016 2:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160512A**	QC Batch: **R108431**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2016 05:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R108431**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **PBW**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R108431**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **LCSW**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.037	0.20	5.000	0	101	90	110				

Sample ID **N019719-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324796**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3.154	0.20						3.091	2.00	20	

Sample ID **N019719-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.248	0.20	5.000	3.091	103	90	110				

Sample ID **N019719-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.265	0.20	5.000	3.091	103	90	110	8.248	0.210	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019607-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.833	1.0	5.000	0	96.7	90	110				

Sample ID **N019607-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	233.044	4.0	100.0	132.3	101	90	110				

Sample ID **N019607-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.442	1.0	5.000	0.4970	98.9	90	110				

Sample ID **N019607-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.025	1.0	5.000	0.8665	103	90	110				

Sample ID **N019628-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	171.216	2.0	50.00	119.6	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N019628-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3151.500	40	1000	2130	102	90	110				

Sample ID **N019628-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	24111.000	500	12500	12280	94.7	90	110				

Sample ID **N019628-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.038	0.20	1.000	0	104	90	110				

Sample ID **N019628-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Sample ID **N019628-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	229.324	4.0	100.0	127.4	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019628-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431
Client ID:	ZZZZZZ	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324832

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.895	1.0	5.000	0	97.9	90	110				

Sample ID	N019628-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431
Client ID:	ZZZZZZ	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324838

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.504	1.0	5.000	0.7210	95.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-58354	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/9/2016	RunNo:	108414
Client ID:	PBW	Batch ID:	58354	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324033

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-58354	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/9/2016	RunNo:	108414
Client ID:	LCSW	Batch ID:	58354	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324034

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.654	1.0	10.00	0	96.5	85	115				

Sample ID	N019628-006B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/9/2016	RunNo:	108414
Client ID:	ZZZZZZ	Batch ID:	58354	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324039

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.604	1.0	10.00	0.08272	85.2	75	125				

Sample ID	N019628-006B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/9/2016	RunNo:	108414
Client ID:	ZZZZZZ	Batch ID:	58354	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.627	1.0	10.00	0.08272	85.4	75	125	8.604	0.274	20	

Sample ID	N019654-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/9/2016	RunNo:	108414
Client ID:	ZZZZZZ	Batch ID:	58354	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324042

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	140.777	1.0	10.00	134.1	67.1	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 8:00:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 8:49:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 12:06:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 12:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	4.5	0.22	0.50		mg/L	10	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 1:27:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	13	0.44	1.0		mg/L	20	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q216
Lab Order:	N019628	**Collection Date:**	5/4/2016 1:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N019628-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160515A**	QC Batch: **R108493**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/15/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R108493	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108493
Client ID:	PBW	Batch ID:	R108493	TestNo:	SM4500-NO3			Analysis Date:	5/15/2016	SeqNo:	2328761

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R108493	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108493
Client ID:	LCSW	Batch ID:	R108493	TestNo:	SM4500-NO3			Analysis Date:	5/15/2016	SeqNo:	2328762

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.1	85	115				

Sample ID	N019606-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108493
Client ID:	ZZZZZZ	Batch ID:	R108493	TestNo:	SM4500-NO3			Analysis Date:	5/15/2016	SeqNo:	2329076

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	10.664	1.0						10.51	1.47	20	

Sample ID	N019606-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108493
Client ID:	ZZZZZZ	Batch ID:	R108493	TestNo:	SM4500-NO3			Analysis Date:	5/17/2016	SeqNo:	2331401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	21.644	1.0	10.00	10.51	111	75	125				

Sample ID	N019606-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	108493
Client ID:	ZZZZZZ	Batch ID:	R108493	TestNo:	SM4500-NO3			Analysis Date:	5/17/2016	SeqNo:	2331402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	20.608	1.0	10.00	10.51	101	75	125	21.64	4.90	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019628
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019628-001

Client Sample ID: MW-40D-SMT-Q216
Collection Date: 5/4/2016 8:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160511A**	QC Batch: **58354**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	4.4	0.025	0.10		µg/L	1	5/11/2016 01:07 PM
Manganese	12	0.056	0.50		µg/L	1	5/11/2016 01:07 PM
Molybdenum	49	0.19	2.5		µg/L	5	5/16/2016 03:59 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/11/2016 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019628
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019628-002

Client Sample ID: MW-40D-Q216
Collection Date: 5/4/2016 8:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160511A**	QC Batch: **58354**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	4.1	0.025	0.10		µg/L	1	5/11/2016 01:13 PM
Manganese	1.3	0.056	0.50		µg/L	1	5/11/2016 01:13 PM
Molybdenum	49	0.19	2.5		µg/L	5	5/16/2016 04:05 PM
Selenium	ND	0.14	2.5		µg/L	5	5/16/2016 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019628
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019628-003

Client Sample ID: MW-68BR-280-Q216
Collection Date: 5/4/2016 12:06:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160511A**	QC Batch: **58354**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	0.82	0.025	0.10		µg/L	1	5/11/2016 01:19 PM
Manganese	300	0.28	2.5		µg/L	5	5/16/2016 04:10 PM
Molybdenum	35	0.19	2.5		µg/L	5	5/16/2016 04:10 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2016 06:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019628
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019628-004

Client Sample ID: MW-68-240-Q216
Collection Date: 5/4/2016 12:49:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160511A**	QC Batch: **58354**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	5/11/2016 01:24 PM
Manganese	37	0.056	0.50		µg/L	1	5/11/2016 01:24 PM
Molybdenum	23	0.19	2.5		µg/L	5	5/16/2016 04:16 PM
Selenium	3.5	0.14	2.5		µg/L	5	5/20/2016 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019628
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019628-005

Client Sample ID: MW-68-180-Q216
Collection Date: 5/4/2016 1:27:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160511A**	QC Batch: **58354**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	2.8	0.025	0.10		µg/L	1	5/11/2016 02:03 PM
Manganese	ND	0.056	0.50		µg/L	1	5/11/2016 02:03 PM
Molybdenum	38	0.039	0.50		µg/L	1	5/11/2016 02:03 PM
Selenium	11	0.028	0.50		µg/L	1	5/11/2016 02:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019628
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N019628-006

Client Sample ID: MW-66BR-270-Q216
Collection Date: 5/4/2016 1:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160511A**	QC Batch: **58354**			PrepDate	**5/9/2016**	Analyst: **CEI**	
Arsenic	ND	0.025	0.10		µg/L	1	5/11/2016 12:39 PM
Manganese	520	0.28	2.5		µg/L	5	5/11/2016 11:54 AM
Molybdenum	3.1	0.19	2.5		µg/L	5	5/11/2016 11:54 AM
Selenium	ND	0.028	0.50		µg/L	1	5/11/2016 12:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-58354**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108392**
Client ID: **PBW**	Batch ID: **58354**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2016**	SeqNo: **2323549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.081	0.50									
Selenium	0.036	0.50									

Sample ID **LCS-58354**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108392**
Client ID: **LCSW**	Batch ID: **58354**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2016**	SeqNo: **2323550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.829	0.10	10.00	0	98.3	85	115				
Manganese	100.702	0.50	100.0	0	101	85	115				
Molybdenum	10.243	0.50	10.00	0	102	85	115				
Selenium	9.114	0.50	10.00	0	91.1	85	115				

Sample ID **N019628-006B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108392**
Client ID: **ZZZZZZ**	Batch ID: **58354**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2016**	SeqNo: **2323555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.007	0.10	10.00	0.07282	99.3	75	125				
Selenium	7.900	0.50	10.00	0	79.0	75	125				

Sample ID **N019628-006B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/9/2016**	RunNo: **108392**
Client ID: **ZZZZZZ**	Batch ID: **58354**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2016**	SeqNo: **2323556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.665	0.10	10.00	0.07282	95.9	75	125	10.01	3.47	20	
Selenium	8.620	0.50	10.00	0	86.2	75	125	7.900	8.72	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N019654-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/9/2016** RunNo: **108392**
Client ID: **ZZZZZZ** Batch ID: **58354** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2016** SeqNo: **2323558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.647	0.10	10.00	0.6125	100	75	125				
Manganese	93.844	0.50	100.0	0	93.8	75	125				
Molybdenum	12.910	0.50	10.00	1.881	110	75	125				
Selenium	10.578	0.50	10.00	1.244	93.3	75	125				

Sample ID **N019628-006B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/9/2016** RunNo: **108392**
Client ID: **ZZZZZZ** Batch ID: **58354** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2016** SeqNo: **2323564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	604.281	2.5	100.0	519.6	84.7	75	125				
Molybdenum	14.565	2.5	10.00	3.145	114	75	125				

Sample ID **N019628-006B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/9/2016** RunNo: **108392**
Client ID: **ZZZZZZ** Batch ID: **58354** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2016** SeqNo: **2323565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	604.196	2.5	100.0	519.6	84.6	75	125	604.3	0.0141	20	
Molybdenum	14.327	2.5	10.00	3.145	112	75	125	14.56	1.64	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State: CA
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y N): 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present; 5. IR number 7; 6. Method of Cooling: ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 4.1°C
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	
Title: SR. Tech	Phone: 916-786-3302 Fax:		
Signature: Date: 5/4/16	Sampled By:	Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface	Courier: ASET; Tracking No.:

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Project Name: PG&E Topock - GMP
Project Number: RC000753.0801
Signature: Date: 5/4/16

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Calcium, Dissolved SW 6020, HNO3 500 mL poly	IRON, Dissolved SW, 6020, HNO3 500 mL poly	Sodium, Dissolved SW, 6020 HNO3 500 mL poly	Boron, Dissolved SW, 6020, HNO3 500 mL poly	Magnesium, Dissolved SW, 6020, HNO3 500 mL poly	Chloride, E300 1000 mL poly	Alkalinity, Total as CaC03 1000 mL poly	TDS, SM2540C 1000 mL poly	Bromide, E300 1000 mL poly	Sulfate, E300 1000 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019628 - 01	MW-40D-SMT-Q216	5/4/2016	800		X		X	X	X	X	X	X											E	3	P	BNS	
2	- 02	MW-40D-Q216	5/4/2016	849		X		X	X	X	X	X	X											E	3	P	BNS	
3	- 03	MW-68BR-280-Q216	5/4/2016	1206		X		X	X	X	X	X	X											E	3	P	BNS	
4	- 04	MW-68-240-Q216	5/4/2016	1249		X		X	X	X	X	X	X											E	3	P	BNS	
5	- 05	MW-68-180-Q216	5/4/2016	1327		X		X	X	X	X	X	X											E	3	P	BNS	
6	- 06	MW-66BR-270-Q216	5/4/2016	1355		X		X	X	X	X	X	X											E	3	P	BNS	
7	- 07	MW-48-Q216	5/4/2016	1415		X					X													E	2	P	BS	
8	- 08	MW-720-Q216	5/4/2016	1430		X																		E	1	P	B	
9																												
9																												
10																												
11																												
12																												
13																												

Relinquished by (Signature and Printed Name): Gary Clift Date/Time: 5/4/16 1640
Relinquished by (Signature and Printed Name): Date/Time: 5/4/16 @ 1640
Relinquished by (Signature and Printed Name): Date/Time: 5/4/16 @ 1830
Relinquished by (Signature and Printed Name): Date/Time: 5-4-16 @ 1830
Relinquished by (Signature and Printed Name): Date/Time:
Relinquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	**Container Type:** T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/4/2016	Workorder:	N019628
Rep sample Temp (Deg C):	4.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: HG 5/9/2016

Reviewed By: 05/10/16

ASSET Laboratories

WORK ORDER Summary

05-May-16

WorkOrder: N019628

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/4/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019628-001A	MW-40D-SMT-Q216	5/4/2016 8:00:00 AM	5/18/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019628-001B			5/18/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019628-001C			5/18/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019628-002A	MW-40D-Q216	5/4/2016 8:49:00 AM	5/18/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019628-002B			5/18/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019628-002C			5/18/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019628-003A	MW-68BR-280-Q216	5/4/2016 12:06:00 PM	5/18/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019628-003B			5/18/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019628-003C			5/18/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019628-004A	MW-68-240-Q216	5/4/2016 12:49:00 PM	5/18/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019628-004B			5/18/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019628-004C			5/18/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019628-005A	MW-68-180-Q216	5/4/2016 1:27:00 PM	5/18/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

05-May-16

WorkOrder: N019628

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/4/2016

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019628-005B	MW-68-180-Q216	5/4/2016 1:27:00 PM	5/18/2016	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019628-005C			5/18/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019628-006A	MW-66BR-270-Q216	5/4/2016 1:55:00 PM	5/18/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019628-006B			5/18/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019628-006C			5/18/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019628-007A	MW-48-Q216	5/4/2016 2:15:00 PM	5/18/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019628-007B			5/18/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019628-008A	MW-720-Q216	5/4/2016 2:30:00 PM	5/18/2016		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019628-009A	FOLDER		5/18/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/18/2016		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N019628**

NAME	TEST METHOD
Claire Ignacio	EPA 6020
Ryan Balilu	SM 4500-NO3F
Janette Soria	EPA 218.6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108431
ASSET #: N019628

Instrument ID: IC-07
Analyst: JAS
Date Analyzed: 5/12/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)		X				
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	~~X~~	X				
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			~~X~~			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

CCB-5 = 0.068 > 0.02 ppb. However samples affected are ND and 10X CCB detection.
Dilution was necessary for samples N019628-03A & 7A due to matrix interference. Samples were reported at dilution which passed RT & MS recovery criteria.

SECOND LEVEL REVIEW: N019628-07A was reanalyzed. Result confirmed initial analysis.

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/17/2016

2nd Level Reviewer _____ 5/20/2016 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

Cr^{+6}, μg/L = A * DF

where:

A = μg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N019628-001A** concentration in μg/L is calculated as follows:

Cr^{+6}, μg/L = 11.965 * 10

= 119.65

Reporting result in two significant figures,

Cr^{+6}, μg/L = 120

ANALYSIS RUN LOG

INJECTION LOG: 160420B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	ICV	ICV	1	Hexavalent Chromium	04/20/16 3:44 PM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	04/20/16 5:23 PM	Not Reported
10	ICV	ICV	1	Hexavalent Chromium	04/20/16 5:34 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/20/16 5:43 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/20/16 5:53 PM	Reported
13	LCS-R107042	LCS	1	Hexavalent Chromium	04/20/16 6:03 PM	Reported
14	MB-R107042	MBLK	1	Hexavalent Chromium	04/20/16 6:17 PM	Reported
15	N019464-001A	SAMP	1	Hexavalent Chromium	04/20/16 6:28 PM	Reported
16	N019464-001ADUP	DUP	1	Hexavalent Chromium	04/20/16 6:37 PM	Reported
17	N019464-001AMS	MS	1	Hexavalent Chromium	04/20/16 6:47 PM	Reported
18	N019464-001AMSD	MSD	1	Hexavalent Chromium	04/20/16 6:56 PM	Reported
19	N019464-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:06 PM	Reported
20	N019433-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:15 PM	Reported
21	N019447-008A	SAMP	1	Hexavalent Chromium	04/20/16 7:25 PM	Not Reported
22	N019447-010A	SAMP	1	Hexavalent Chromium	04/20/16 7:34 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/20/16 7:44 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/20/16 7:53 PM	Reported
25	N019449-001A	SAMP	1	Hexavalent Chromium	04/20/16 8:04 PM	Reported
26	N019449-002A	SAMP	10	Hexavalent Chromium	04/20/16 8:15 PM	Not Reported
27	N019449-003A	SAMP	1	Hexavalent Chromium	04/20/16 8:24 PM	Reported
28	N019449-004A	SAMP	1	Hexavalent Chromium	04/20/16 8:34 PM	Reported
29	N019449-005A	SAMP	1	Hexavalent Chromium	04/20/16 8:43 PM	Reported
30	N019449-006A	SAMP	1	Hexavalent Chromium	04/20/16 8:53 PM	Reported
31	N019449-007A	SAMP	1	Hexavalent Chromium	04/20/16 9:02 PM	Reported
32	N019449-008A	SAMP	1	Hexavalent Chromium	04/20/16 9:12 PM	Reported
33	N019449-009A	SAMP	1	Hexavalent Chromium	04/20/16 9:21 PM	Reported
34	N019449-010A	SAMP	1	Hexavalent Chromium	04/20/16 9:31 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/20/16 9:40 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/20/16 9:49 PM	Reported
37	N019347-002A	SAMP	1	Hexavalent Chromium	04/20/16 9:59 PM	Not Reported
38	N019347-002AMS	MS	1	Hexavalent Chromium	04/20/16 10:08 PM	Not Reported
39	MB-R107053	MBLK	1	Hexavalent Chromium	04/20/16 10:18 PM	Reported
40	LCS-R107053	LCS	1	Hexavalent Chromium	04/20/16 10:27 PM	Reported
41	N019448-001A	SAMP	10	Hexavalent Chromium	04/20/16 10:37 PM	Reported
42	N019448-001ADUP	DUP	10	Hexavalent Chromium	04/20/16 10:46 PM	Reported

INJECTION LOG: 160420B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019448-001AMS	MS	10	Hexavalent Chromium	04/20/16 10:56 PM	Reported
44	N019448-001AMSD	MSD	10	Hexavalent Chromium	04/20/16 11:05 PM	Reported
45	N019448-002A	SAMP	1	Hexavalent Chromium	04/20/16 11:15 PM	Not Reported
46	N019448-003A	SAMP	1	Hexavalent Chromium	04/20/16 11:24 PM	Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/20/16 11:34 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/20/16 11:43 PM	Reported
49	N019448-004A	SAMP	1	Hexavalent Chromium	04/20/16 11:53 PM	Reported
50	N019448-005A	SAMP	1	Hexavalent Chromium	04/21/16 12:02 AM	Reported
51	N019448-006A	SAMP	1	Hexavalent Chromium	04/21/16 12:11 AM	Reported
52	N019448-007A	SAMP	1	Hexavalent Chromium	04/21/16 12:21 AM	Reported
53	N019458-001A	SAMP	1	Hexavalent Chromium	04/21/16 12:30 AM	Reported
54	N019458-002A	SAMP	1	Hexavalent Chromium	04/21/16 12:40 AM	Reported
55	N019458-003A	SAMP	1	Hexavalent Chromium	04/21/16 12:49 AM	Reported
56	N019458-004A	SAMP	1	Hexavalent Chromium	04/21/16 12:59 AM	Reported
57	N019458-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:08 AM	Reported
58	N019458-006A	SAMP	1	Hexavalent Chromium	04/21/16 1:18 AM	Not Reported
59	CCV-4	CCV	1	Hexavalent Chromium	04/21/16 1:27 AM	Reported
60	CCB-4	CCB	1	Hexavalent Chromium	04/21/16 1:37 AM	Reported
61	N019458-007A	SAMP	1	Hexavalent Chromium	04/21/16 1:46 AM	Reported
62	N019368-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:55 AM	Not Reported
63	N019368-005AMS	MS	1	Hexavalent Chromium	04/21/16 2:05 AM	Not Reported
64	N019368-006A	SAMP	1	Hexavalent Chromium	04/21/16 2:14 AM	Not Reported
65	N019368-006AMS	MS	1	Hexavalent Chromium	04/21/16 2:24 AM	Not Reported
66	N019368-008A	SAMP	1	Hexavalent Chromium	04/21/16 2:33 AM	Not Reported
67	N019368-008AMS	MS	1	Hexavalent Chromium	04/21/16 2:43 AM	Not Reported
68	N019368-013A	SAMP	1	Hexavalent Chromium	04/21/16 2:52 AM	Not Reported
69	N019368-013AMS	MS	1	Hexavalent Chromium	04/21/16 3:02 AM	Not Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	04/21/16 3:11 AM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	04/21/16 3:21 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160420B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**21/Apr/16 12:22:23**
No. of Injections:	**74**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	ICV,ICV,1,	8	1000	Unknown		04/20/2016 15:44	Interrupted	CCV @5ppb, IWST-160401A
9	BLANK	9	1000	Unknown		04/20/2016 17:23	Finished	CCV @5ppb, IWST-160401A
10	ICV,ICV,1,	10	1000	Unknown		04/20/2016 17:34	Finished	ICV @5ppb, IWST-160401B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/20/2016 17:43	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/20/2016 17:53	Finished	ICB
13	LCS-H2O,LCS,1	13	1000	Unknown		04/20/2016 18:03	Finished	LCS, IWST-160401B
14	MB-H2O,MBLK,1	14	1000	Unknown		04/20/2016 18:17	Finished	MB R160416A
15	N019464-001A,SAMP	15	1000	Unknown		04/20/2016 18:28	Finished	SAMP, 10mL
16	N019464-001ADUP,D	16	1000	Unknown		04/20/2016 18:37	Finished	DUP, 10mL
17	N019464-001AMS,MS	17	1000	Unknown		04/20/2016 18:47	Finished	MS (5ppb) , IWST-160401B, 10
18	N019464-001AMSD,M	18	1000	Unknown		04/20/2016 18:56	Finished	MSD (5ppb) , IWST-160401B,
19	N019464-002A,SAMP	19	1000	Unknown		04/20/2016 19:06	Finished	SAMP, 10mL
20	N019433-002A,SAMP	20	1000	Unknown		04/20/2016 19:15	Finished	SAMP, 10mL
21	N019447-008A,SAMP	21	1000	Unknown		04/20/2016 19:25	Finished	SAMP, 10mL
22	N019447-010A,SAMP	22	1000	Unknown		04/20/2016 19:34	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		04/20/2016 19:44	Finished	CCV @10ppb, IWST-160401A
24	CCB-1,CCB,1,	24	1000	Unknown		04/20/2016 19:53	Finished	CCB R160407B
25	N019449-001A,SAMP	1	1000	Unknown		04/20/2016 20:04	Finished	SAMP, 10mL
26	N019449-002A,SAMP	2	1000	Unknown		04/20/2016 20:15	Finished	SAMP, 1>10mL
27	N019449-003A,SAMP	3	1000	Unknown		04/20/2016 20:24	Finished	SAMP, 10mL
28	N019449-004A,SAMP	4	1000	Unknown		04/20/2016 20:34	Finished	SAMP, 10mL
29	N019449-005A,SAMP	5	1000	Unknown		04/20/2016 20:43	Finished	SAMP, 10mL
30	N019449-006A,SAMP	6	1000	Unknown		04/20/2016 20:53	Finished	SAMP, 10mL
31	N019449-007A,SAMP	7	1000	Unknown		04/20/2016 21:02	Finished	SAMP, 10mL
32	N019449-008A,SAMP	8	1000	Unknown		04/20/2016 21:12	Finished	SAMP, 10mL
33	N019449-009A,SAMP	9	1000	Unknown		04/20/2016 21:21	Finished	SAMP, 10mL
34	N019449-010A,SAMP	10	1000	Unknown		04/20/2016 21:31	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	11	1000	Unknown		04/20/2016 21:40	Finished	CCV @5pb, IWST-160401A
36	CCB-2,CCB,1,	12	1000	Unknown		04/20/2016 21:49	Finished	CCB
37	N019347-002A,SAMP	13	1000	Unknown		04/20/2016 21:59	Finished	SAMP, 10mL
38	N019347-002AMS,MS	14	1000	Unknown		04/20/2016 22:08	Finished	MS (5ppb) , IWST-160401B, 10
39	MB-H2O,MBLK,1	15	1000	Unknown		04/20/2016 22:18	Finished	MB R160416A
40	LCS-H2O,LCS,1	16	1000	Unknown		04/20/2016 22:27	Finished	LCS, IWST-160401B
41	N019448-001A,SAMP	17	1000	Unknown		04/20/2016 22:37	Finished	SAMP, 1>10mL
42	N019448-001ADUP,D	18	1000	Unknown		04/20/2016 22:46	Finished	DUP, 1>10mL
43	N019448-001AMS,MS	19	1000	Unknown		04/20/2016 22:56	Finished	MS (5ppb) , IWST-160401B, 1>
44	N019448-001AMSD,M	20	1000	Unknown		04/20/2016 23:05	Finished	MSD (5ppb) , IWST-160401B,
45	N019448-002A,SAMP	21	1000	Unknown		04/20/2016 23:15	Finished	SAMP, 10mL
46	N019448-003A,SAMP	22	1000	Unknown		04/20/2016 23:24	Finished	SAMP, 10mL
47	CCV-3,CCV1,1,	23	1000	Unknown		04/20/2016 23:34	Finished	CCV @10ppb, IWST-160401A
48	CCB-3,CCB,1,	24	1000	Unknown		04/20/2016 23:43	Finished	CCB
49	N019448-004A,SAMP	25	1000	Unknown		04/20/2016 23:53	Finished	SAMP, 10mL
50	N019448-005A,SAMP	26	1000	Unknown		04/21/2016 00:02	Finished	SAMP, 10mL
51	N019448-006A,SAMP	27	1000	Unknown		04/21/2016 00:11	Finished	SAMP, 10mL
52	N019448-007A,SAMP	28	1000	Unknown		04/21/2016 00:21	Finished	SAMP, 10mL
53	N019458-001A,SAMP	29	1000	Unknown		04/21/2016 00:30	Finished	SAMP, 10mL
54	N019458-002A,SAMP	30	1000	Unknown		04/21/2016 00:40	Finished	SAMP, 10mL
55	N019458-003A,SAMP	31	1000	Unknown		04/21/2016 00:49	Finished	SAMP, 10mL
56	N019458-004A,SAMP	32	1000	Unknown		04/21/2016 00:59	Finished	SAMP, 10mL
57	N019458-005A,SAMP	33	1000	Unknown		04/21/2016 01:08	Finished	SAMP, 10mL
58	N019458-006A,SAMP	34	1000	Unknown		04/21/2016 01:18	Finished	SAMP, 10mL
59	CCV-4,CCV,1,	35	1000	Unknown		04/21/2016 01:27	Finished	CCV @5pb, IWST-160401A
60	CCB-4,CCB,1,	36	1000	Unknown		04/21/2016 01:37	Finished	CCB

61	N019458-007A,SAMP	37	1000	Unknown		04/21/2016 01:46	Finished	SAMP, 10mL
62	N019368-005A,SAMP	38	1000	Unknown		04/21/2016 01:55	Finished	SAMP, 10mL
63	N019368-005AMS,MS	39	1000	Unknown		04/21/2016 02:05	Finished	MS (5ppb) , IWST-160401B, 10
64	N019368-006A,SAMP	40	1000	Unknown		04/21/2016 02:14	Finished	SAMP, 10mL
65	N019368-006AMS,MS	41	1000	Unknown		04/21/2016 02:24	Finished	MS (5ppb) , IWST-160401B, 10
66	N019368-008A,SAMP	42	1000	Unknown		04/21/2016 02:33	Finished	SAMP, 10mL
67	N019368-008AMS,MS	43	1000	Unknown		04/21/2016 02:43	Finished	MS (5ppb) , IWST-160401B, 10
68	N019368-013A,SAMP	44	1000	Unknown		04/21/2016 02:52	Finished	SAMP, 10mL
69	N019368-013AMS,MS	45	1000	Unknown		04/21/2016 03:02	Finished	MS (5ppb) , IWST-160401B, 10
70	CCV-5,CCV1,1,	46	1000	Unknown		04/21/2016 03:11	Finished	CCV @10ppb, IWST-160401A
71	CCB-5,CCB,1,	47	1000	Unknown		04/21/2016 03:21	Finished	CCB
72	SHUTDOWN	48	1000	Unknown		04/21/2016 03:30	Finished	
73	Eluent: R160418B, R	49	1000	Unknown		n.a.	Finished	Eluent
74	PCR: R160420B	50	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	BLANK	BLANK	1	Hexavalent Chromium	05/12/16 11:02 AM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	05/12/16 11:13 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	05/12/16 11:23 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/12/16 11:32 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	05/12/16 11:42 AM	Reported
13	MB-R108431	MBLK	1	Hexavalent Chromium	05/12/16 11:51 AM	Reported
14	LCS-R108431	LCS	1	Hexavalent Chromium	05/12/16 12:01 PM	Reported
15	N019719-001A	SAMP	1	Hexavalent Chromium	05/12/16 12:10 PM	Reported
16	N019719-001ADUP	DUP	1	Hexavalent Chromium	05/12/16 12:19 PM	Reported
17	N019719-001AMS	MS	1	Hexavalent Chromium	05/12/16 12:29 PM	Reported
18	N019719-001AMSD	MSD	1	Hexavalent Chromium	05/12/16 12:38 PM	Reported
19	N019719-002A	SAMP	1	Hexavalent Chromium	05/12/16 12:48 PM	Reported
20	N019738-001A	SAMP	1	Hexavalent Chromium	05/12/16 12:57 PM	Reported
21	N019738-002A	SAMP	1	Hexavalent Chromium	05/12/16 1:07 PM	Reported
22	N019738-003A	SAMP	1	Hexavalent Chromium	05/12/16 1:16 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	05/12/16 1:26 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	05/12/16 1:35 PM	Reported
25	N019607-006A	SAMP	5	Hexavalent Chromium	05/12/16 1:45 PM	Reported
26	N019607-006AMS	MS	5	Hexavalent Chromium	05/12/16 1:54 PM	Reported
27	N019607-007A	SAMP	20	Hexavalent Chromium	05/12/16 2:04 PM	Reported
28	N019607-007AMS	MS	20	Hexavalent Chromium	05/12/16 2:13 PM	Reported
29	N019607-008A	SAMP	5	Hexavalent Chromium	05/12/16 2:22 PM	Reported
30	N019607-008AMS	MS	5	Hexavalent Chromium	05/12/16 2:32 PM	Reported
31	N019607-010A	SAMP	5	Hexavalent Chromium	05/12/16 2:41 PM	Reported
32	N019607-010AMS	MS	5	Hexavalent Chromium	05/12/16 2:51 PM	Reported
33	N019628-001A	SAMP	10	Hexavalent Chromium	05/12/16 3:00 PM	Reported
34	N019628-001AMS	MS	10	Hexavalent Chromium	05/12/16 3:10 PM	Reported
35	CCV-3	CCV	1	Hexavalent Chromium	05/12/16 3:19 PM	Reported
36	CCB-3	CCB	1	Hexavalent Chromium	05/12/16 3:29 PM	Reported
37	N019628-002A	SAMP	10	Hexavalent Chromium	05/12/16 3:38 PM	Not Reported
38	N019628-002AMS	MS	10	Hexavalent Chromium	05/12/16 3:48 PM	Not Reported
39	N019628-003A	SAMP	1	Hexavalent Chromium	05/12/16 3:57 PM	Not Reported
40	N019628-003AMS	MS	1	Hexavalent Chromium	05/12/16 4:07 PM	Not Reported
41	N019628-004A	SAMP	200	Hexavalent Chromium	05/12/16 4:16 PM	Reported
42	N019628-004AMS	MS	200	Hexavalent Chromium	05/12/16 4:25 PM	Reported

INJECTION LOG: 160512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019628-005A	SAMP	2500	Hexavalent Chromium	05/12/16 4:35 PM	Reported
44	N019628-005AMS	MS	2500	Hexavalent Chromium	05/12/16 4:44 PM	Reported
45	N019628-006A	SAMP	1	Hexavalent Chromium	05/12/16 4:54 PM	Reported
46	N019628-006AMS	MS	1	Hexavalent Chromium	05/12/16 5:03 PM	Reported
47	CCV-4	CCV1	1	Hexavalent Chromium	05/12/16 5:13 PM	Reported
48	CCB-4	CCB	1	Hexavalent Chromium	05/12/16 5:22 PM	Reported
49	N019628-007A	SAMP	1	Hexavalent Chromium	05/12/16 5:33 PM	Not Reported
50	N019628-007AMS	MS	1	Hexavalent Chromium	05/12/16 5:44 PM	Not Reported
51	N019628-008A	SAMP	1	Hexavalent Chromium	05/12/16 5:54 PM	Reported
52	N019628-008AMS	MS	1	Hexavalent Chromium	05/12/16 6:03 PM	Reported
53	N019628-002A	SAMP	20	Hexavalent Chromium	05/12/16 6:13 PM	Reported
54	N019628-002AMS	MS	20	Hexavalent Chromium	05/12/16 6:22 PM	Reported
55	N019628-003A	SAMP	5	Hexavalent Chromium	05/12/16 6:32 PM	Reported
56	N019628-003AMS	MS	5	Hexavalent Chromium	05/12/16 6:41 PM	Reported
57	N019628-006A	SAMP	5	Hexavalent Chromium	05/12/16 6:51 PM	Not Reported
58	N019628-006AMS	MS	5	Hexavalent Chromium	05/12/16 7:00 PM	Not Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/12/16 7:10 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/12/16 7:19 PM	Reported
61	N019628-007A	SAMP	5	Hexavalent Chromium	05/12/16 7:28 PM	Reported
62	N019628-007AMS	MS	5	Hexavalent Chromium	05/12/16 7:38 PM	Reported
63	N019756-001A	SAMP	1	Hexavalent Chromium	05/12/16 7:47 PM	Reported
64	N019756-002A	SAMP	1	Hexavalent Chromium	05/12/16 7:57 PM	Reported
65	N019590-002A	SAMP	5	Hexavalent Chromium	05/12/16 8:06 PM	Not Reported
66	N019590-002AMS	MS	5	Hexavalent Chromium	05/12/16 8:16 PM	Not Reported
67	N019527-002A	SAMP	1	Hexavalent Chromium	05/12/16 8:25 PM	Not Reported
68	N019527-002AMS	MS	1	Hexavalent Chromium	05/12/16 8:35 PM	Not Reported
69	N019527-005A	SAMP	1	Hexavalent Chromium	05/12/16 8:44 PM	Not Reported
70	N019527-005AMS	MS	1	Hexavalent Chromium	05/12/16 8:54 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/12/16 9:03 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/12/16 9:13 PM	Reported

jas 5/16/2016

Injection Log Summary

Sequence Details

Name:	**IC-07_160512A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**12/May/16 22:11:25**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	BLANK	1	1000	Unknown		05/12/2016 11:02	Finished	
9	BLANK	2	1000	Unknown		05/12/2016 11:13	Finished	
10	CCV-1,CCV,1,	3	1000	Unknown		05/12/2016 11:23	Finished	CCV @5ppb, IWST-160401A
11	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/12/2016 11:32	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	5	1000	Unknown		05/12/2016 11:42	Finished	CCB R160512C
13	MB-H2O,MBLK,1	6	1000	Unknown		05/12/2016 11:51	Finished	MB R160502C
14	LCS-H2O,LCS,1	7	1000	Unknown		05/12/2016 12:01	Finished	LCS, IWST-160401B
15	N019719-001A,SAMP	8	1000	Unknown		05/12/2016 12:10	Finished	SAMP, 10mL
16	N019719-001ADUP,D	9	1000	Unknown		05/12/2016 12:19	Finished	DUP, 10mL
17	N019719-001AMS,MS	10	1000	Unknown		05/12/2016 12:29	Finished	MS (5ppb) , IWST-160401B, 10
18	N019719-001AMSD,M	11	1000	Unknown		05/12/2016 12:38	Finished	MSD (5ppb) , IWST-160401B,
19	N019719-002A,SAMP	12	1000	Unknown		05/12/2016 12:48	Finished	SAMP, 10mL
20	N019738-001A,SAMP	13	1000	Unknown		05/12/2016 12:57	Finished	SAMP, 10mL
21	N019738-002A,SAMP	14	1000	Unknown		05/12/2016 13:07	Finished	SAMP, 10mL
22	N019738-003A,SAMP	15	1000	Unknown		05/12/2016 13:16	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	16	1000	Unknown		05/12/2016 13:26	Finished	CCV @10ppb, IWST-160401A
24	CCB-2,CCB,1,	17	1000	Unknown		05/12/2016 13:35	Finished	CCB R160426G
25	N019607-006A,SAMP	18	1000	Unknown		05/12/2016 13:45	Finished	SAMP, 2.0>10mL
26	N019607-006AMS,MS	19	1000	Unknown		05/12/2016 13:54	Finished	MS (1ppb), IWST-160401B, 2.0
27	N019607-007A,SAMP	20	1000	Unknown		05/12/2016 14:04	Finished	SAMP, 0.5>10mL
28	N019607-007AMS,MS	21	1000	Unknown		05/12/2016 14:13	Finished	MS (5ppb), IWST-160401B, 0.5
29	N019607-008A,SAMP	22	1000	Unknown		05/12/2016 14:22	Finished	SAMP, 2.0>10mL
30	N019607-008AMS,MS	23	1000	Unknown		05/12/2016 14:32	Finished	MS (1ppb), IWST-160401B, 2.0
31	N019607-010A,SAMP	24	1000	Unknown		05/12/2016 14:41	Finished	SAMP, 2.0>10mL
32	N019607-010AMS,MS	25	1000	Unknown		05/12/2016 14:51	Finished	MS (1ppb), IWST-160401B, 2.0
33	N019628-001A,SAMP	26	1000	Unknown		05/12/2016 15:00	Finished	SAMP, 1.0>10mL
34	N019628-001AMS,MS	27	1000	Unknown		05/12/2016 15:10	Finished	MS (5ppb), IWST-160401B, 1.0
35	CCV-3,CCV,1,	28	1000	Unknown		05/12/2016 15:19	Finished	CCV @5pb, IWST-160401A
36	CCB-3,CCB,1,	29	1000	Unknown		05/12/2016 15:29	Finished	CCB
37	N019628-002A,SAMP	30	1000	Unknown		05/12/2016 15:38	Finished	SAMP, 1.0>10mL
38	N019628-002AMS,MS	31	1000	Unknown		05/12/2016 15:48	Finished	MS (5ppb), IWST-160401B, 1.0
39	N019628-003A,SAMP	32	1000	Unknown		05/12/2016 15:57	Finished	SAMP, 10mL
40	N019628-003AMS,MS	33	1000	Unknown		05/12/2016 16:07	Finished	MS (1ppb) , IWST-160401B, 2.
41	N019628-004A,SAMP	34	1000	Unknown		05/12/2016 16:16	Finished	SAMP, 50uL>10mL
42	N019628-004AMS,MS	35	1000	Unknown		05/12/2016 16:25	Finished	MS (5ppb), IWST-160401B, 50
43	N019628-005A,SAMP	36	1000	Unknown		05/12/2016 16:35	Finished	SAMP, 4uL>10mL
44	N019628-005AMS,MS	37	1000	Unknown		05/12/2016 16:44	Finished	MS (5ppb), IWST-160401B, 4u
45	N019628-006A,SAMP	38	1000	Unknown		05/12/2016 16:54	Finished	SAMP, 10mL
46	N019628-006AMS,MS	39	1000	Unknown		05/12/2016 17:03	Finished	MS (1ppb) , IWST-160401B, 2.
47	CCV-4,CCV1,1,	40	1000	Unknown		05/12/2016 17:13	Finished	CCV @10ppb, IWST-160401A
48	CCB-4,CCB,1,	41	1000	Unknown		05/12/2016 17:22	Finished	CCB
49	N019628-007A,SAMP	1	1000	Unknown		05/12/2016 17:33	Finished	SAMP, 10mL
50	N019628-007AMS,MS	2	1000	Unknown		05/12/2016 17:44	Finished	MS (1ppb) , IWST-160401B, 2.
51	N019628-008A,SAMP	3	1000	Unknown		05/12/2016 17:54	Finished	SAMP, 10mL
52	N019628-008AMS,MS	4	1000	Unknown		05/12/2016 18:03	Finished	MS (1ppb) , IWST-160401B, 2.
53	N019628-002A,SAMP	5	1000	Unknown		05/12/2016 18:13	Finished	SAMP, 0.5>10mL
54	N019628-002AMS,MS	6	1000	Unknown		05/12/2016 18:22	Finished	MS (5ppb), IWST-160401B, 0.5
55	N019628-003A,SAMP	7	1000	Unknown		05/12/2016 18:32	Finished	SAMP, 2.0>10mL
56	N019628-003AMS,MS	8	1000	Unknown		05/12/2016 18:41	Finished	MS (1ppb), IWST-160401B, 2.0
57	N019628-006A,SAMP	9	1000	Unknown		05/12/2016 18:51	Finished	SAMP, 2.0>10mL
58	N019628-006AMS,MS	10	1000	Unknown		05/12/2016 19:00	Finished	MS (1ppb), IWST-160401B, 2.0
59	CCV-5,CCV,1,	11	1000	Unknown		05/12/2016 19:10	Finished	CCV @5pb, IWST-160401A
60	CCB-5,CCB,1,	12	1000	Unknown		05/12/2016 19:19	Finished	CCB

61	N019628-007A,SAMP	13	1000	Unknown		05/12/2016 19:28	Finished	SAMP, 2.0>10mL
62	N019628-007AMS,MS	14	1000	Unknown		05/12/2016 19:38	Finished	MS (1ppb), IWST-160401B, 2.0
63	N019756-001A,SAMP	15	1000	Unknown		05/12/2016 19:47	Finished	SAMP, 10mL
64	N019756-002A,SAMP	16	1000	Unknown		05/12/2016 19:57	Finished	SAMP, 10mL
65	N019590-002A,SAMP	17	1000	Unknown		05/12/2016 20:06	Finished	SAMP, 2.0>10mL
66	N019590-002AMS,MS	18	1000	Unknown		05/12/2016 20:16	Finished	MS (1ppb), IWST-160401B, 2.0
67	N019527-002A,SAMP	19	1000	Unknown		05/12/2016 20:25	Finished	SAMP, 10mL
68	N019527-002AMS,MS	20	1000	Unknown		05/12/2016 20:35	Finished	MS (1ppb) , IWST-160401B,10
69	N019527-005A,SAMP	21	1000	Unknown		05/12/2016 20:44	Finished	SAMP, 10mL
70	N019527-005AMS,MS	22	1000	Unknown		05/12/2016 20:54	Finished	MS (1ppb) , IWST-160401B,10
71	CCV-6,CCV1,1,	23	1000	Unknown		05/12/2016 21:03	Finished	CCV @10ppb, IWST-160401A
72	CCB-6,CCB,1,	24	1000	Unknown		05/12/2016 21:13	Finished	CCB
73	SHUTDOWN	25	1000	Unknown		05/12/2016 21:22	Finished	
74	Eluent: R160510A, R	26	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R160510F	27	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 5/4/16
Time Prepared: 3:00
Prepared By: JAD

Slope: 98.5 %
pH 7: 7.03
4: 6.99
10: 10.02
LCS: 6.99 @25.6

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINN-160125H
NH4OH + NH4SO4 eluent: R160510A
NH4OH + NH4SO4 buffer: R160407B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO19412-1A	9.12	9.33	~250 mL	~250 mL	+4 drops 6 N NaOH	R160407B
2)	-2A	9.02	9.39	↓	↓	+6 drops	↓
3)	-3A	8.81	9.42	↓	↓	+8 drops	↓
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 5/5/16
Time Prepared: 3:30 pm
Prepared By: JAS

Slope: 98.7
pH 7: 7.01 @ 29.0 °C
4: 3.99 @ 29.9 °C
10: 9.99 @ 28.8 °C
LCS: 7.09

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINN-160125H
NH4OH + NH4SO4 eluent: R160510A, R160510E
NH4OH + NH4SO4 buffer: R160407B / R160426G

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO19628-1A	9.36	-	-	-	-	R160426G
2)	-2A	9.37	-	-	-	-	↓
3)	-3A	9.49	-	-	-	-	↓
4)	-4A	9.35	-	-	-	-	↓
5)	-5A	9.27	9.35	~250 mL	~250 mL	+1 drop 6 N NaOH	light green
6)	-6A	9.43	-	-	-	-	↓
7)	~~-7A~~	~~9.44~~ 9.38	-	-	-	-	↓
8)	NO19636-1A	9.30	-	-	-	-	↓
9)	NO19638-1A	8.88	9.36	~250 mL	~250 mL	+7 drops 6 N NaOH	R160407B
10)	NO19639-1A	9.06	9.35	↓	↓	+4 drops	↓
11)	-2A	8.60	9.66	↓	↓	+9 drops	↓
12)	-3A	9.49	-	-	-	-	R160426G
13)	-4A	9.47	-	-	-	~~+4~~ -	R160407B
14)	-5A	9.12	9.37	~250 mL	~250 mL	+4 drops 6 N NaOH	↓
15)	-6A	9.42	-	-	-	-	↓
	-7A	9.23	9.37	~250 mL	~250 mL	+2 drops 6 N NaOH	R160426G

Logbook No. 10

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/20/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0519	0.2378	1.1671	2.3360	3.5435	4.7112	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ICV**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2324787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.913	0.20	5.000	0	98.3	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2324788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.221	0.20	0.2000	0	111	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCV**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.762	0.20	10.00	0	97.6	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCV**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.846	0.20	5.000	0	96.9	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.929	0.20	10.00	0	99.3	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCV**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.946	0.20	5.000	0	98.9	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ZZZZZZ**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.860	0.20	10.00	0	98.6	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **ICB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **4/20/2016**	SeqNo: **2324789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108431**
Client ID: **CCB**	Batch ID: **R108431**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2016**	SeqNo: **2324826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431
Client ID:	CCB	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324836

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.068	0.20									

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108431
Client ID:	CCB	Batch ID:	R108431	TestNo:	EPA 218.6			Analysis Date:	5/12/2016	SeqNo:	2324842

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

CCB-5 has detect > 0.02ppb, however, samples N019628 are either non-detect or >10x the CCB detection.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

5/20/2016

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/12/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.098	
CCV-2	5.098	
CCV-3	5.090	
CCV-4	5.090	
CCV-5	5.090	
CCV-6	5.090	
Average	5.093	
Actual RT Window	5.013 - 5.173	
Applied RT Window	4.893 - 5.293	
MB-R108431	N.A.	N.A.
LCS-R108431	5.098	PASS
N019719-001A	5.081	PASS
N019719-001ADUP	5.090	PASS
N019719-001AMS	5.090	PASS
N019719-001AMSD	5.081	PASS
N019719-002A	5.098	PASS
N019738-001A	5.081	PASS
N019738-002A	5.081	PASS
N019738-003A	5.098	PASS
N019607-006A	N.A.	N.A.
N019607-006AMS	5.040	PASS
N019607-007A	5.090	PASS
N019607-007AMS	5.090	PASS
N019607-008A	5.006	PASS
N019607-008AMS	5.023	PASS
N019607-010A	5.065	PASS
N019607-010AMS	5.065	PASS
N019628-001A	5.073	PASS
N019628-001AMS	5.065	PASS
N019628-002A	5.073	PASS
N019628-002AMS	5.065	PASS
N019628-003A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/12/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.098	
CCV-2	5.098	
CCV-3	5.090	
CCV-4	5.090	
CCV-5	5.090	
CCV-6	5.090	
Average	5.093	
Actual RT Window	5.013 - 5.173	
Applied RT Window	4.893 - 5.293	
N019628-003AMS	N.A.	N.A.
N019628-004A	5.090	PASS
N019628-004AMS	5.098	PASS
N019628-005A	5.090	PASS
N019628-005AMS	5.090	PASS
N019628-006A	N.A.	N.A.
N019628-006AMS	4.898	PASS
N019628-007A	N.A.	N.A.
N019628-007AMS	N.A.	N.A.
N019628-008A	N.A.	N.A.
N019628-008AMS	5.090	PASS
N019628-002A	5.081	PASS
N019628-002AMS	5.081	PASS
N019628-003A	N.A.	N.A.
N019628-003AMS	5.006	PASS
N019628-006A	N.A.	N.A.
N019628-006AMS	5.056	PASS
N019628-007A	5.031	PASS
N019628-007AMS	5.031	PASS
N019756-001A	5.090	PASS
N019756-002A	5.090	PASS
N019590-002A	5.040	PASS
N019590-002AMS	5.031	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/12/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.098	
CCV-2	5.098	
CCV-3	5.090	
CCV-4	5.090	
CCV-5	5.090	
CCV-6	5.090	
Average	5.093	
Actual RT Window	5.013 - 5.173	
Applied RT Window	4.893 - 5.293	
N019527-002A	5.098	PASS
N019527-002AMS	5.090	PASS
N019527-005A	5.090	PASS
N019527-005AMS	5.081	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160420B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	ICV	ICV	1	Hexavalent Chromium	04/20/16 3:44 PM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	04/20/16 5:23 PM	Not Reported
10	ICV	ICV	1	Hexavalent Chromium	04/20/16 5:34 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/20/16 5:43 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/20/16 5:53 PM	Reported
13	LCS-R107042	LCS	1	Hexavalent Chromium	04/20/16 6:03 PM	Reported
14	MB-R107042	MBLK	1	Hexavalent Chromium	04/20/16 6:17 PM	Reported
15	N019464-001A	SAMP	1	Hexavalent Chromium	04/20/16 6:28 PM	Reported
16	N019464-001ADUP	DUP	1	Hexavalent Chromium	04/20/16 6:37 PM	Reported
17	N019464-001AMS	MS	1	Hexavalent Chromium	04/20/16 6:47 PM	Reported
18	N019464-001AMSD	MSD	1	Hexavalent Chromium	04/20/16 6:56 PM	Reported
19	N019464-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:06 PM	Reported
20	N019433-002A	SAMP	1	Hexavalent Chromium	04/20/16 7:15 PM	Reported
21	N019447-008A	SAMP	1	Hexavalent Chromium	04/20/16 7:25 PM	Not Reported
22	N019447-010A	SAMP	1	Hexavalent Chromium	04/20/16 7:34 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/20/16 7:44 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/20/16 7:53 PM	Reported
25	N019449-001A	SAMP	1	Hexavalent Chromium	04/20/16 8:04 PM	Reported
26	N019449-002A	SAMP	10	Hexavalent Chromium	04/20/16 8:15 PM	Not Reported
27	N019449-003A	SAMP	1	Hexavalent Chromium	04/20/16 8:24 PM	Reported
28	N019449-004A	SAMP	1	Hexavalent Chromium	04/20/16 8:34 PM	Reported
29	N019449-005A	SAMP	1	Hexavalent Chromium	04/20/16 8:43 PM	Reported
30	N019449-006A	SAMP	1	Hexavalent Chromium	04/20/16 8:53 PM	Reported
31	N019449-007A	SAMP	1	Hexavalent Chromium	04/20/16 9:02 PM	Reported
32	N019449-008A	SAMP	1	Hexavalent Chromium	04/20/16 9:12 PM	Reported
33	N019449-009A	SAMP	1	Hexavalent Chromium	04/20/16 9:21 PM	Reported
34	N019449-010A	SAMP	1	Hexavalent Chromium	04/20/16 9:31 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/20/16 9:40 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/20/16 9:49 PM	Reported
37	N019347-002A	SAMP	1	Hexavalent Chromium	04/20/16 9:59 PM	Not Reported
38	N019347-002AMS	MS	1	Hexavalent Chromium	04/20/16 10:08 PM	Not Reported
39	MB-R107053	MBLK	1	Hexavalent Chromium	04/20/16 10:18 PM	Reported
40	LCS-R107053	LCS	1	Hexavalent Chromium	04/20/16 10:27 PM	Reported
41	N019448-001A	SAMP	10	Hexavalent Chromium	04/20/16 10:37 PM	Reported
42	N019448-001ADUP	DUP	10	Hexavalent Chromium	04/20/16 10:46 PM	Reported
43	N019448-001AMS	MS	10	Hexavalent Chromium	04/20/16 10:56 PM	Reported
44	N019448-001AMSD	MSD	10	Hexavalent Chromium	04/20/16 11:05 PM	Reported
45	N019448-002A	SAMP	1	Hexavalent Chromium	04/20/16 11:15 PM	Not Reported
46	N019448-003A	SAMP	1	Hexavalent Chromium	04/20/16 11:24 PM	Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/20/16 11:34 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/20/16 11:43 PM	Reported
49	N019448-004A	SAMP	1	Hexavalent Chromium	04/20/16 11:53 PM	Reported

INJECTION LOG: 160420B

Instrument ID: IC-07

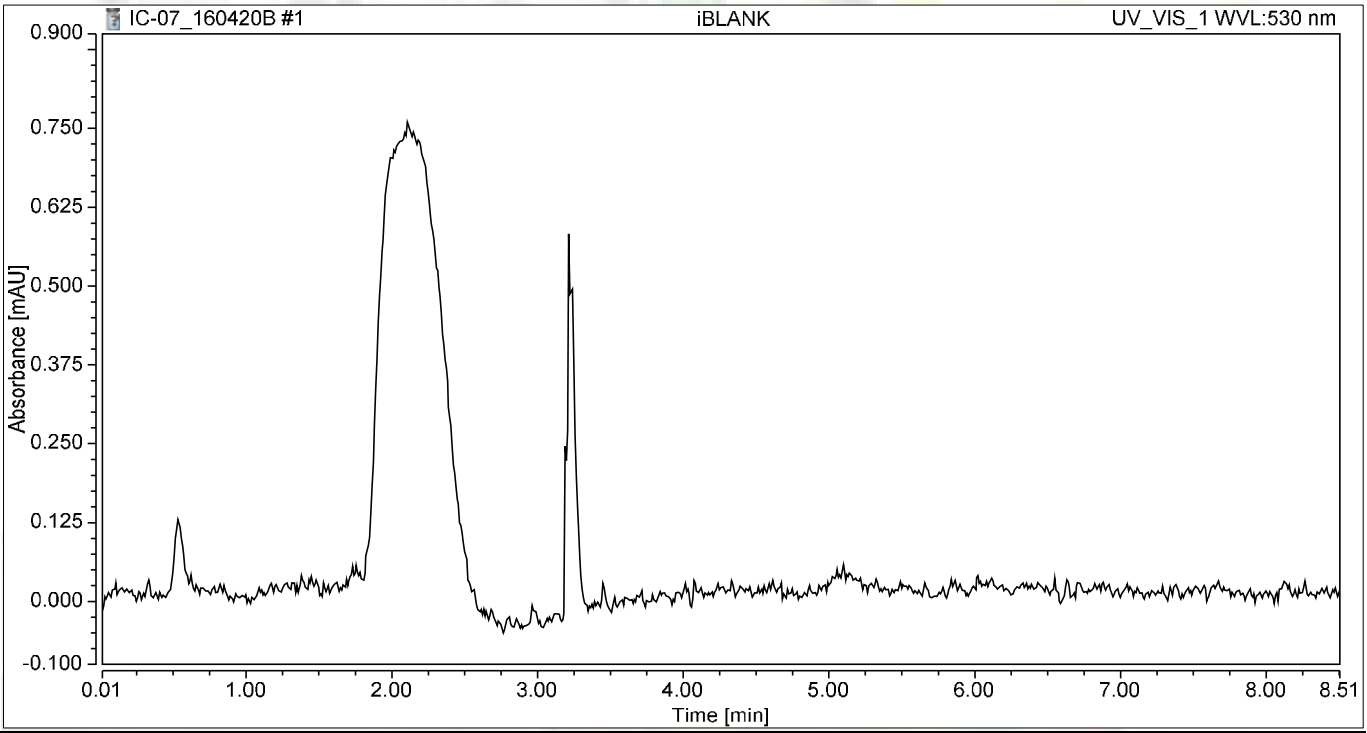
Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	N019448-005A	SAMP	1	Hexavalent Chromium	04/21/16 12:02 AM	Reported
51	N019448-006A	SAMP	1	Hexavalent Chromium	04/21/16 12:11 AM	Reported
52	N019448-007A	SAMP	1	Hexavalent Chromium	04/21/16 12:21 AM	Reported
53	N019458-001A	SAMP	1	Hexavalent Chromium	04/21/16 12:30 AM	Reported
54	N019458-002A	SAMP	1	Hexavalent Chromium	04/21/16 12:40 AM	Reported
55	N019458-003A	SAMP	1	Hexavalent Chromium	04/21/16 12:49 AM	Reported
56	N019458-004A	SAMP	1	Hexavalent Chromium	04/21/16 12:59 AM	Reported
57	N019458-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:08 AM	Reported
58	N019458-006A	SAMP	1	Hexavalent Chromium	04/21/16 1:18 AM	Not Reported
59	CCV-4	CCV	1	Hexavalent Chromium	04/21/16 1:27 AM	Reported
60	CCB-4	CCB	1	Hexavalent Chromium	04/21/16 1:37 AM	Reported
61	N019458-007A	SAMP	1	Hexavalent Chromium	04/21/16 1:46 AM	Reported
62	N019368-005A	SAMP	1	Hexavalent Chromium	04/21/16 1:55 AM	Not Reported
63	N019368-005AMS	MS	1	Hexavalent Chromium	04/21/16 2:05 AM	Not Reported
64	N019368-006A	SAMP	1	Hexavalent Chromium	04/21/16 2:14 AM	Not Reported
65	N019368-006AMS	MS	1	Hexavalent Chromium	04/21/16 2:24 AM	Not Reported
66	N019368-008A	SAMP	1	Hexavalent Chromium	04/21/16 2:33 AM	Not Reported
67	N019368-008AMS	MS	1	Hexavalent Chromium	04/21/16 2:43 AM	Not Reported
68	N019368-013A	SAMP	1	Hexavalent Chromium	04/21/16 2:52 AM	Not Reported
69	N019368-013AMS	MS	1	Hexavalent Chromium	04/21/16 3:02 AM	Not Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	04/21/16 3:11 AM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	04/21/16 3:21 AM	Reported

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

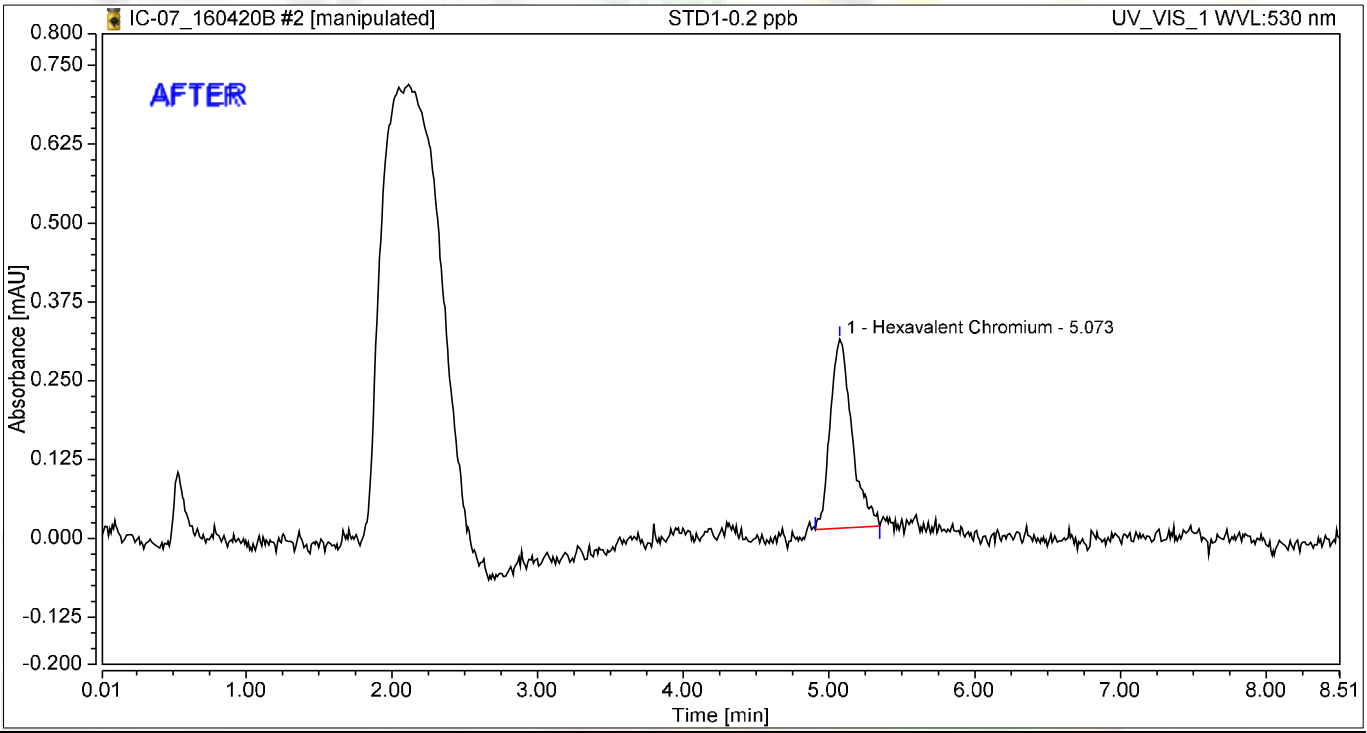
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.052	0.300	100.00	100.00	0.2206
Total:			**0.052**	**0.300**	**100.00**	**100.00**	

4/25/2016

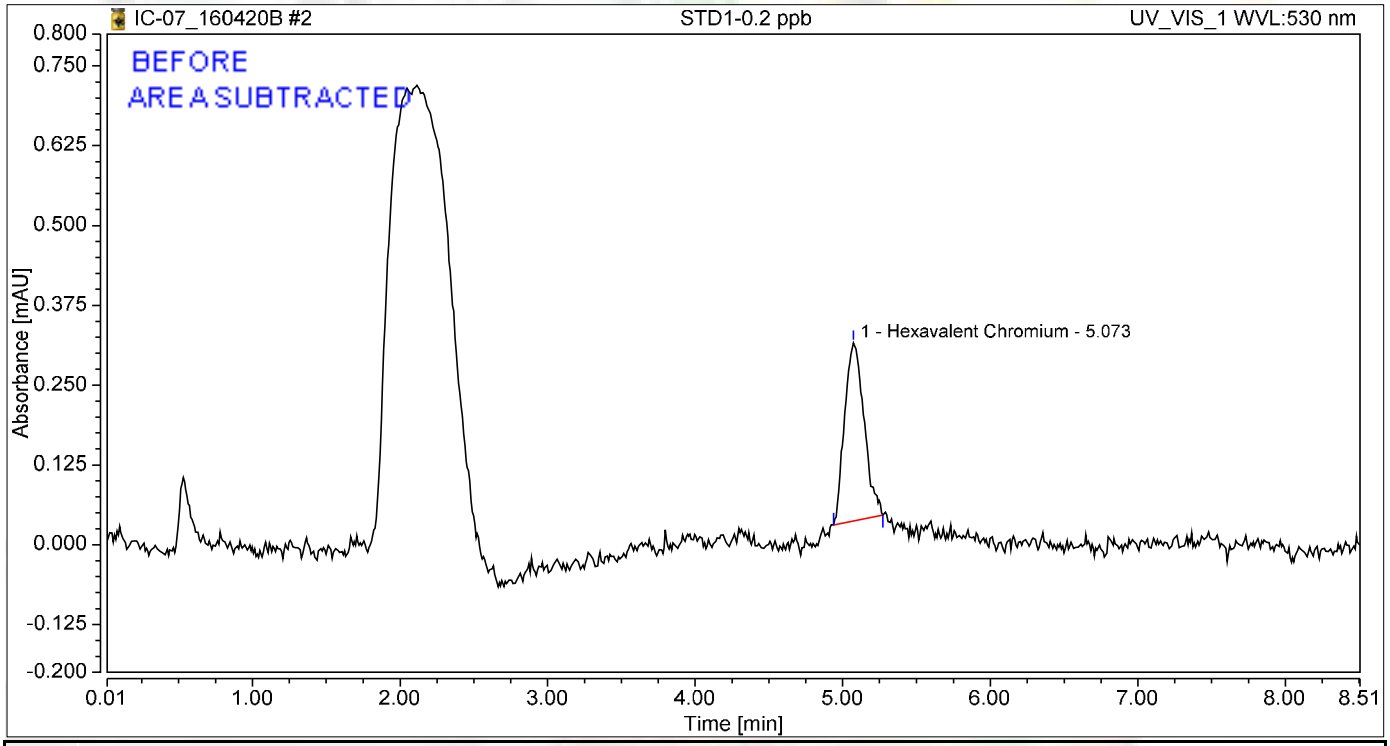
4/27/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.043	0.279	100.00	100.00	0.1807
Total:			**0.043**	**0.279**	**100.00**	**100.00**	

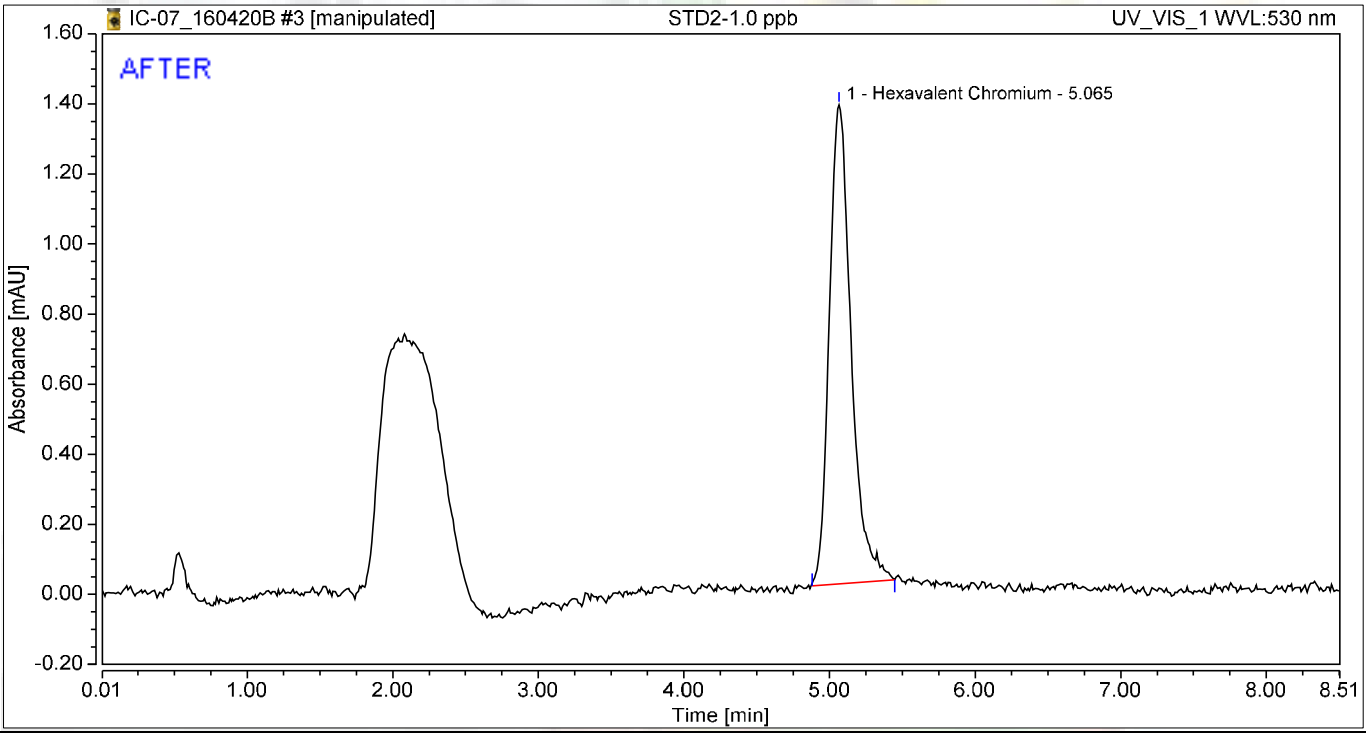
jas 4/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.238	1.368	100.00	100.00	1.0102
Total:			**0.238**	**1.368**	**100.00**	**100.00**	

jas 4/25/2016

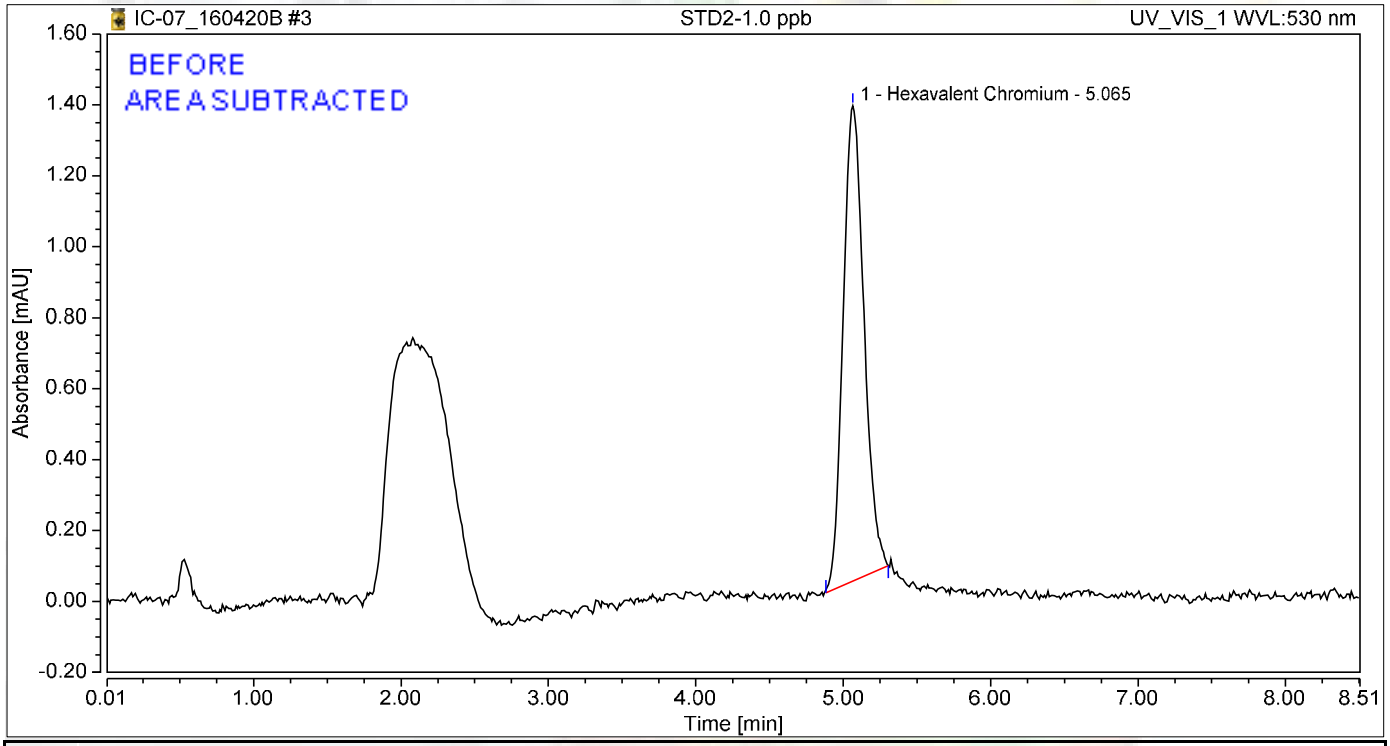
Nancy 4/27/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.219	1.340	100.00	100.00	0.9309
Total:			**0.219**	**1.340**	**100.00**	**100.00**	

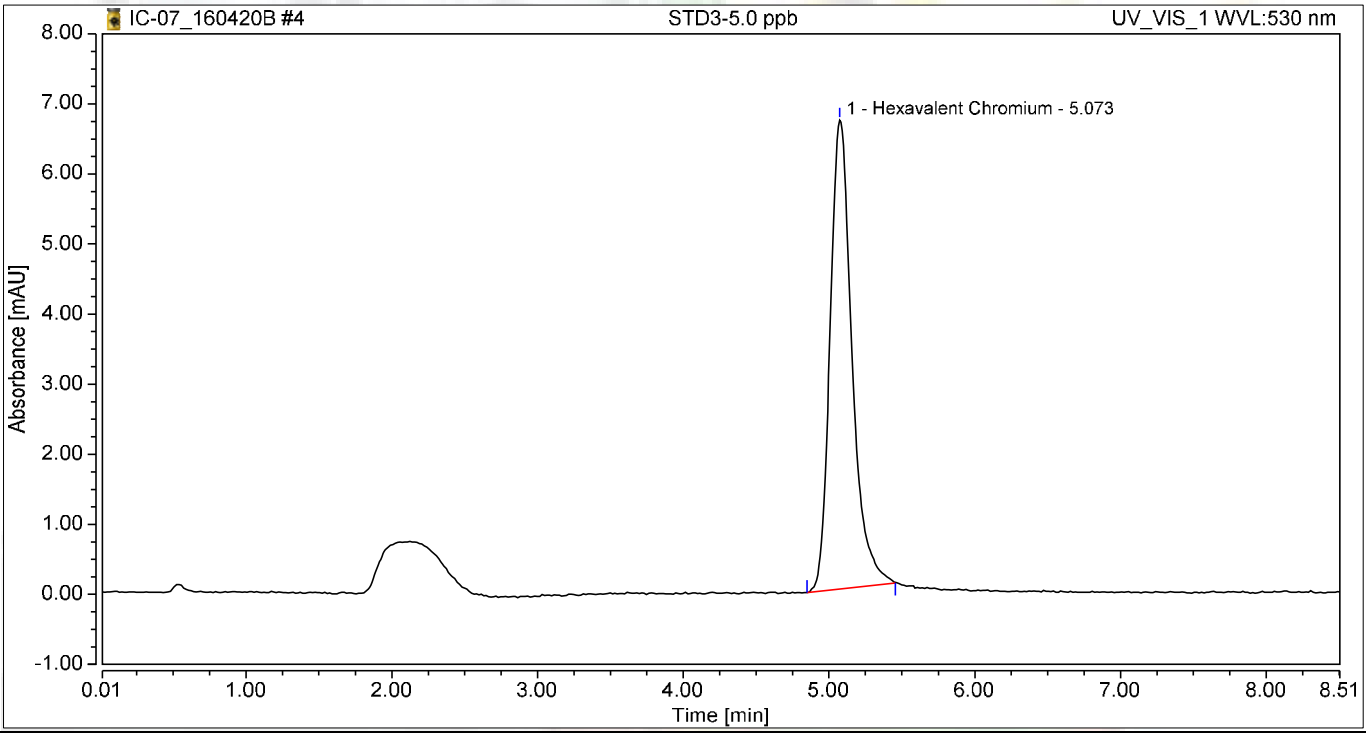
jas 4/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

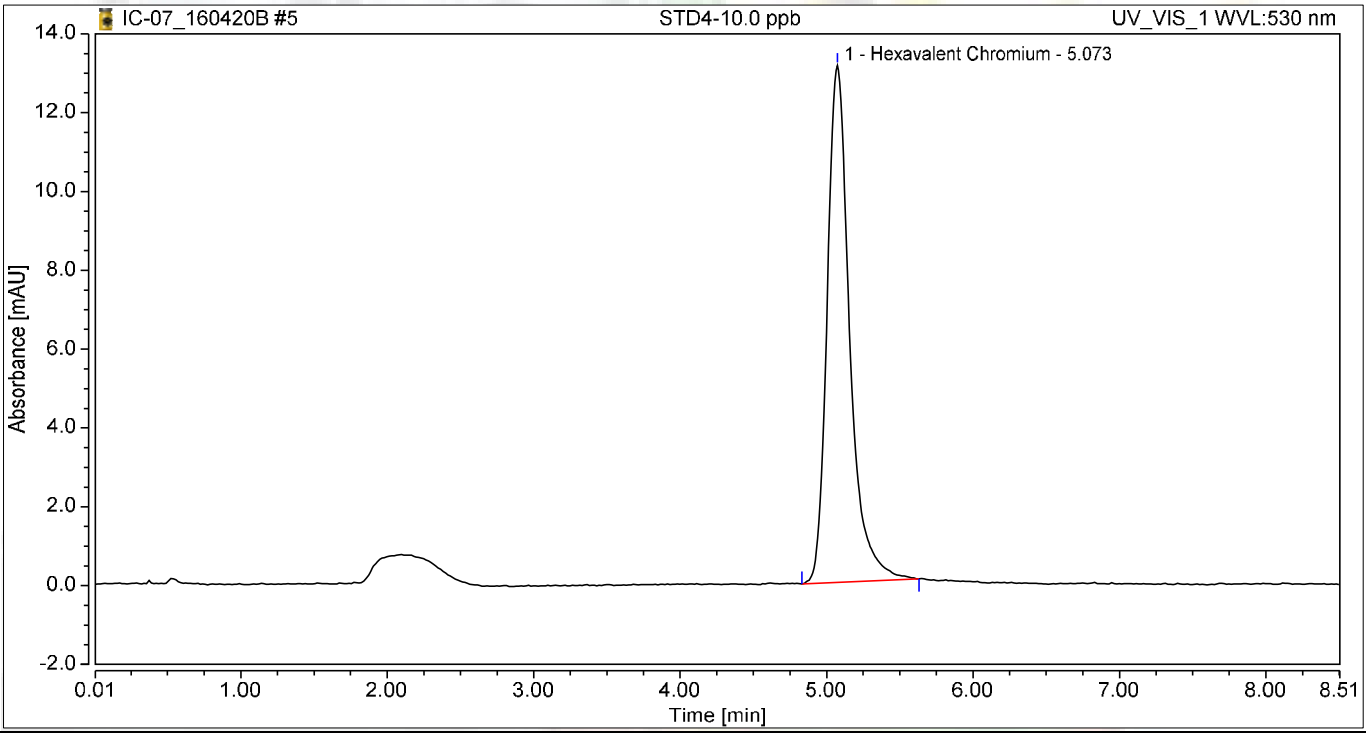
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.167	6.694	100.00	100.00	4.9574
Total:			**1.167**	**6.694**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

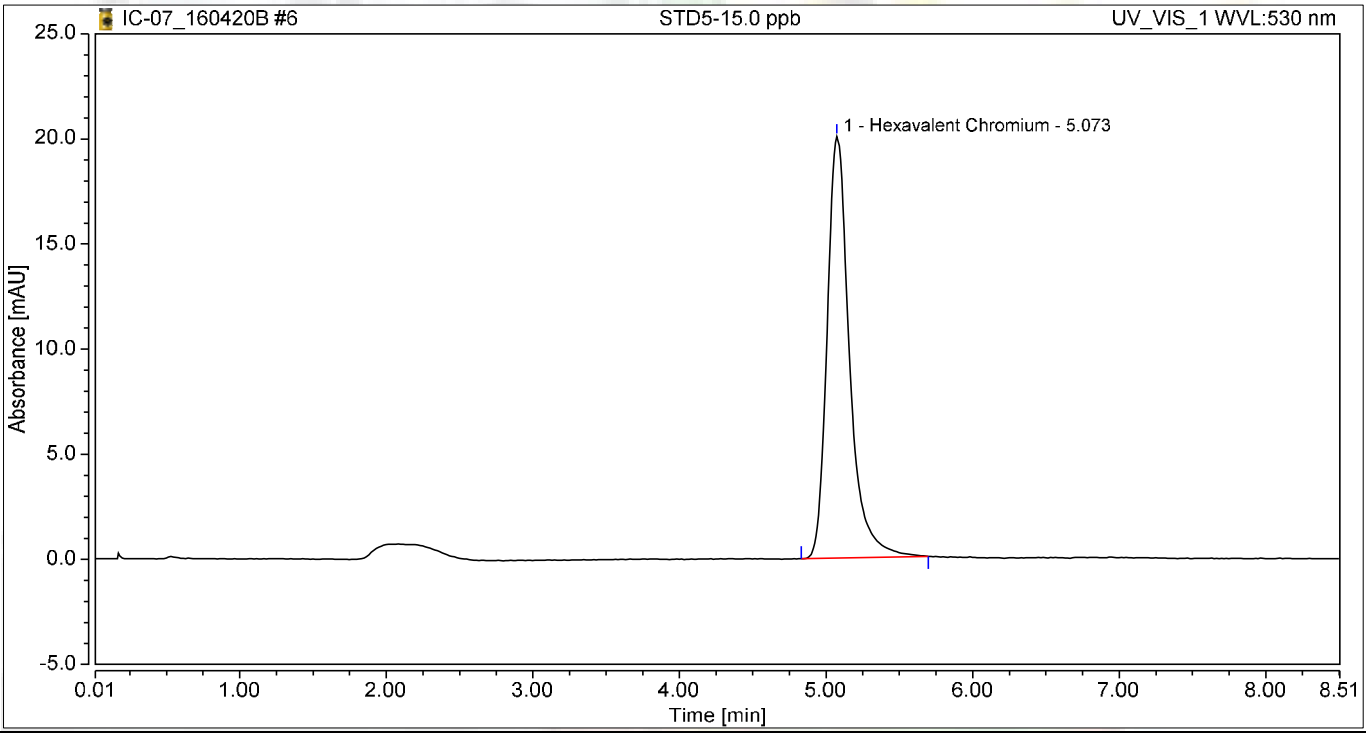
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	2.336	13.113	100.00	100.00	9.9223
Total:			**2.336**	**13.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

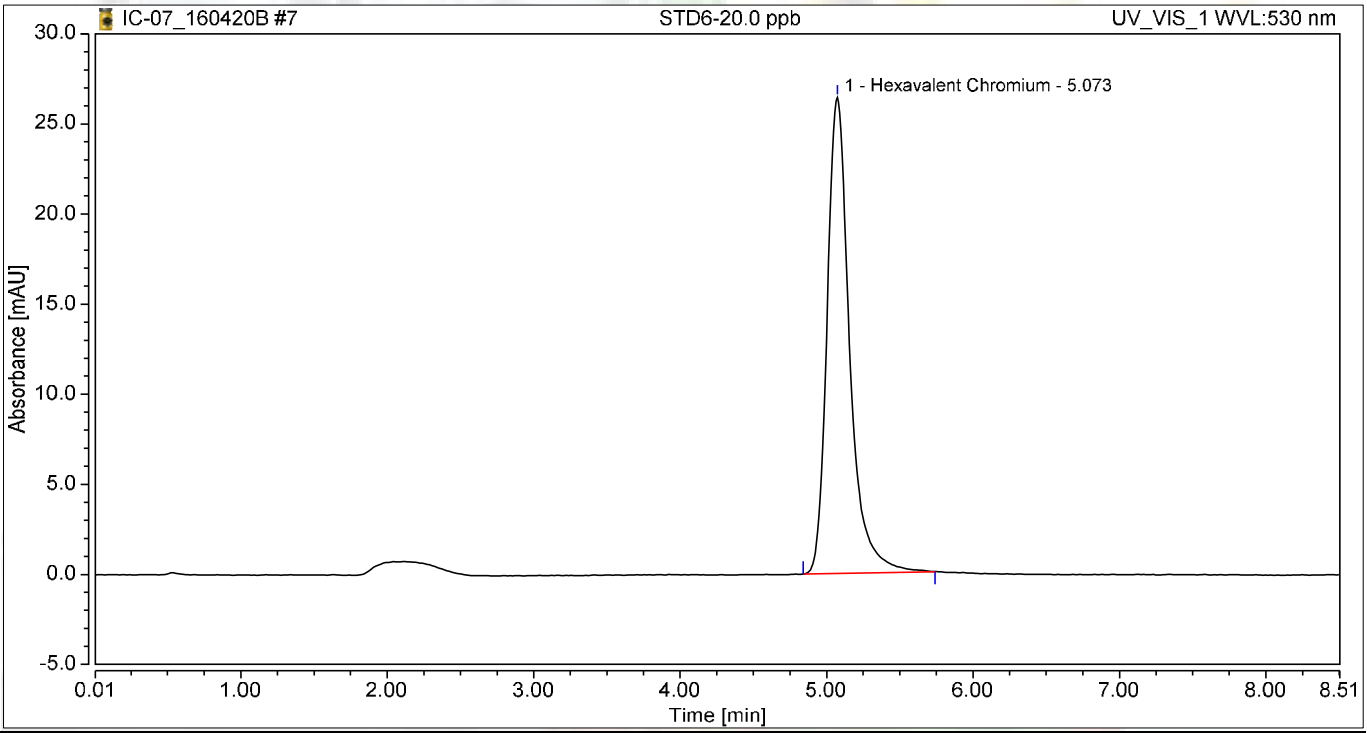
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	3.544	20.049	100.00	100.00	15.0511
Total:			**3.544**	**20.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



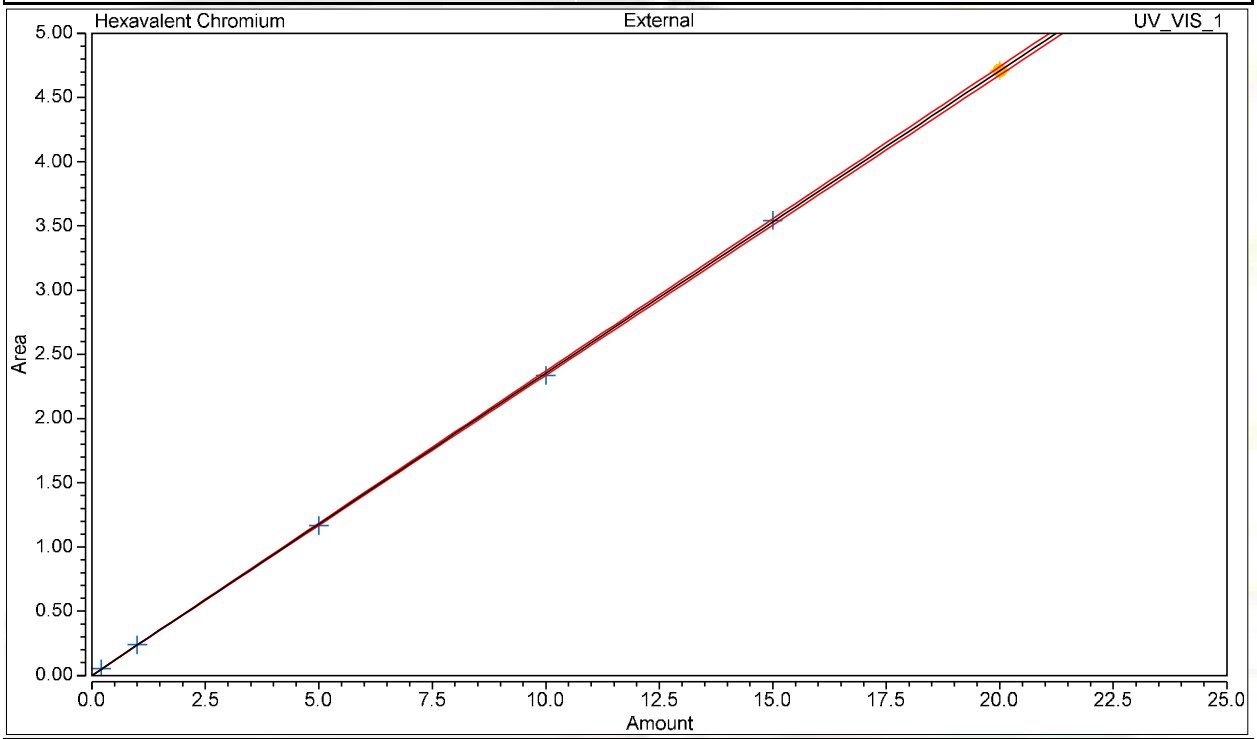
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	4.711	26.416	100.00	100.00	20.0105
Total:			**4.711**	**26.416**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2354
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

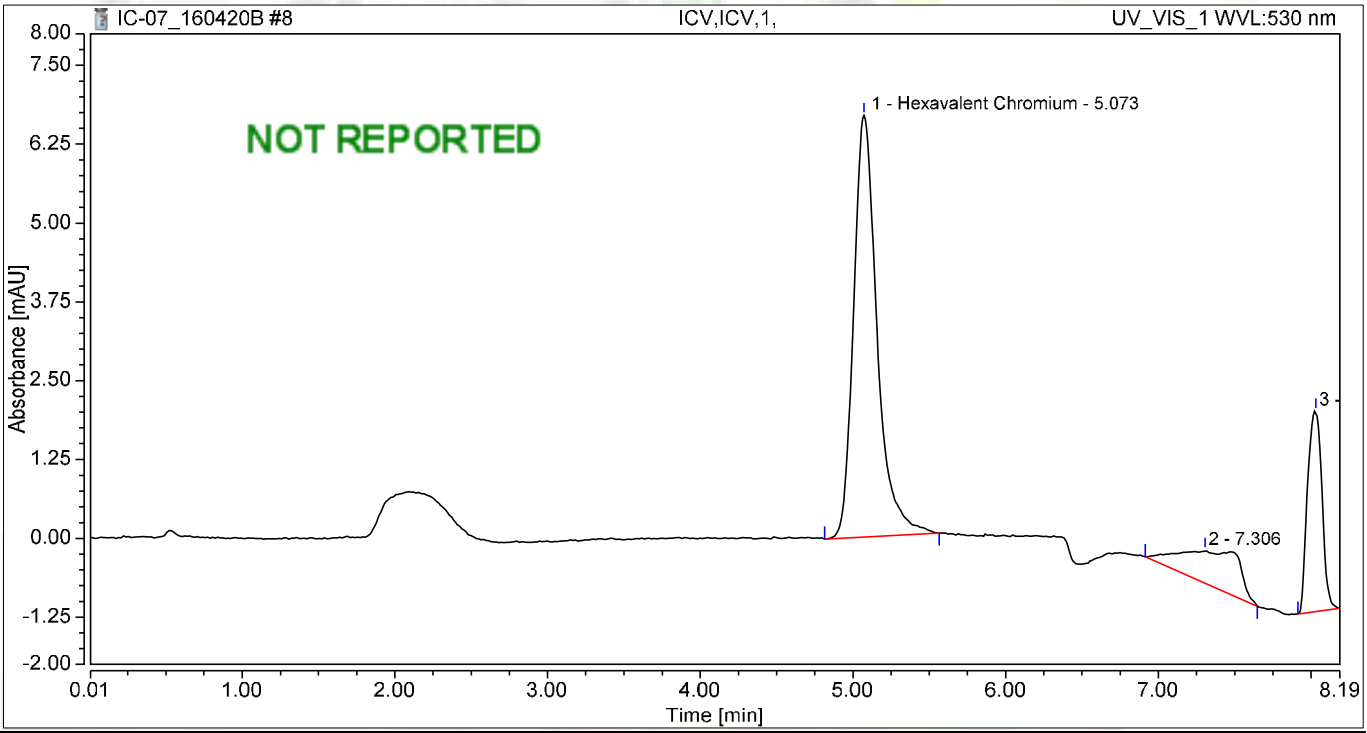
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
2	STD1-0.2 ppb	01	0.2000	0.0519	0.052	0.300
3	STD2-1.0 ppb	02	1.0000	0.2378	0.238	1.368
4	STD3-5.0 ppb	03	5.0000	1.1671	1.167	6.694
5	STD4-10.0 ppb	04	10.0000	2.3360	2.336	13.113
6	STD5-15.0 ppb	05	15.0000	3.5435	3.544	20.049
7	STD6-20.0 ppb	06	20.0000	4.7112	4.711	26.416

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.18**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 15:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

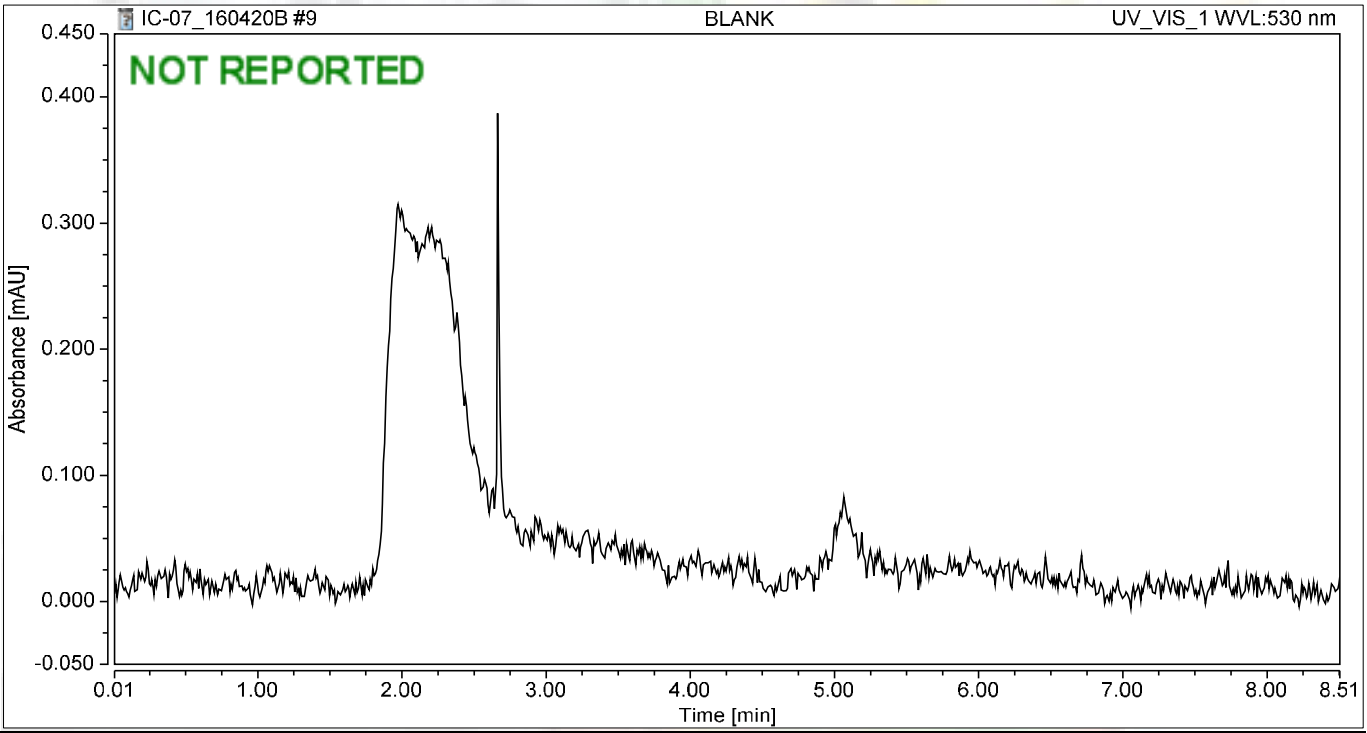
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.188	6.683	66.14	64.35	5.0459
2		7.306	0.258	0.519	14.37	5.00	n.a.
3		8.031	0.350	3.183	19.49	30.65	n.a.
Total:			**1.796**	**10.385**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

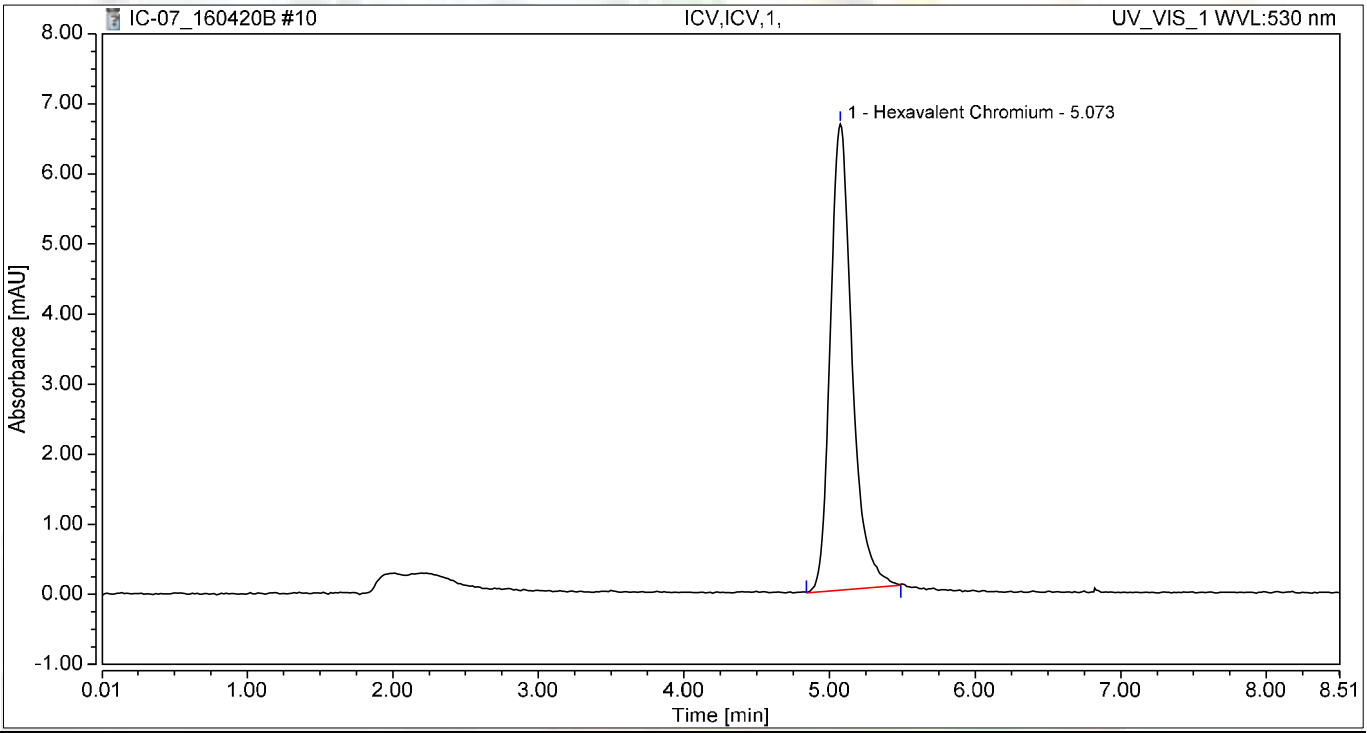
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

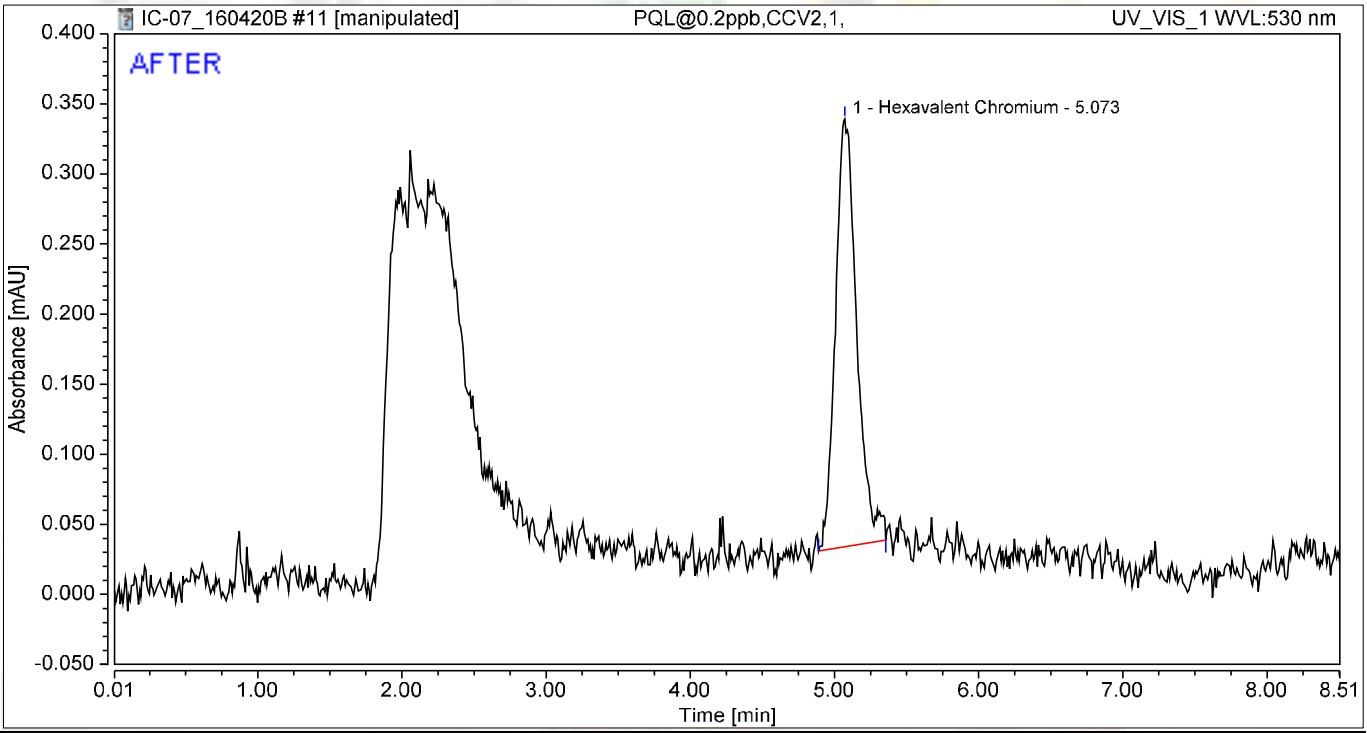
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.157	6.654	100.00	100.00	4.9132
Total:			**1.157**	**6.654**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.052	0.305	100.00	100.00	0.2212
Total:			**0.052**	**0.305**	**100.00**	**100.00**	

4/25/2016

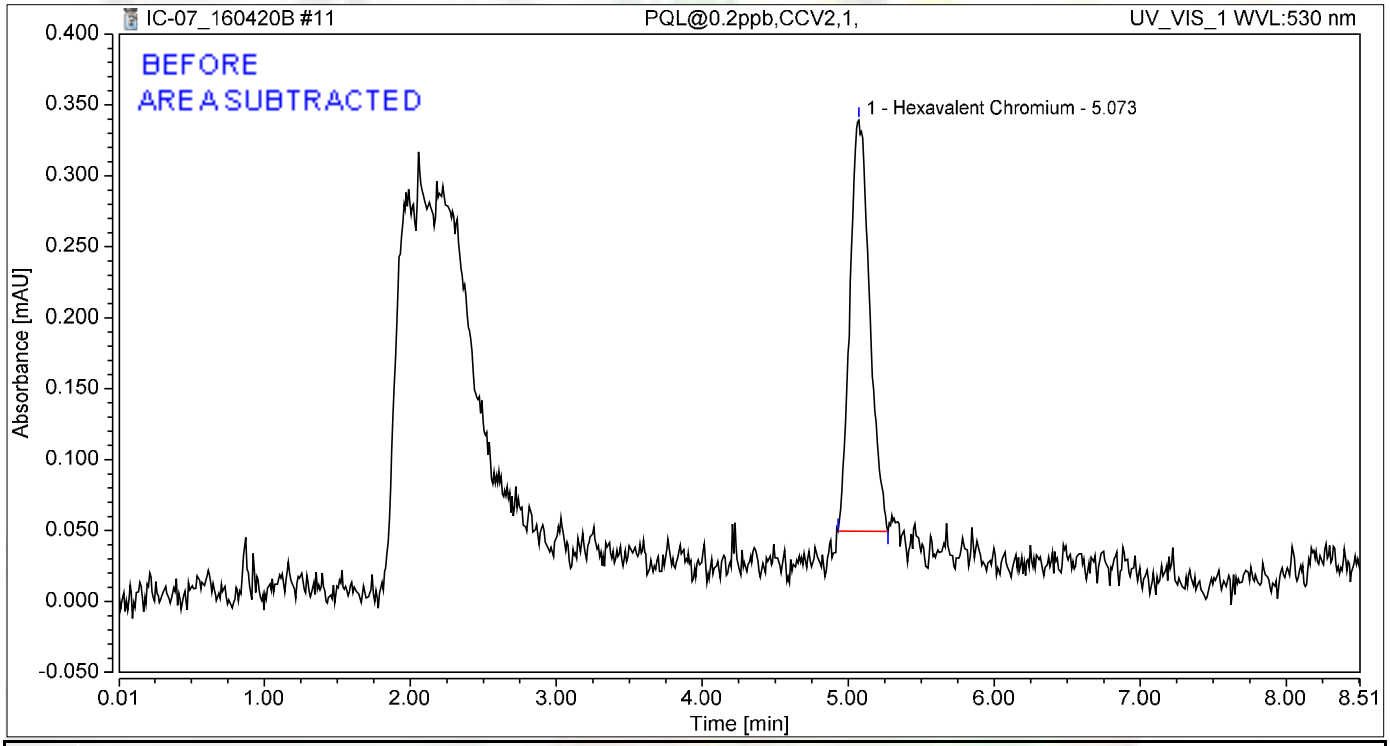
4/27/2016

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.045	0.290	100.00	100.00	0.1921
Total:			**0.045**	**0.290**	**100.00**	**100.00**	

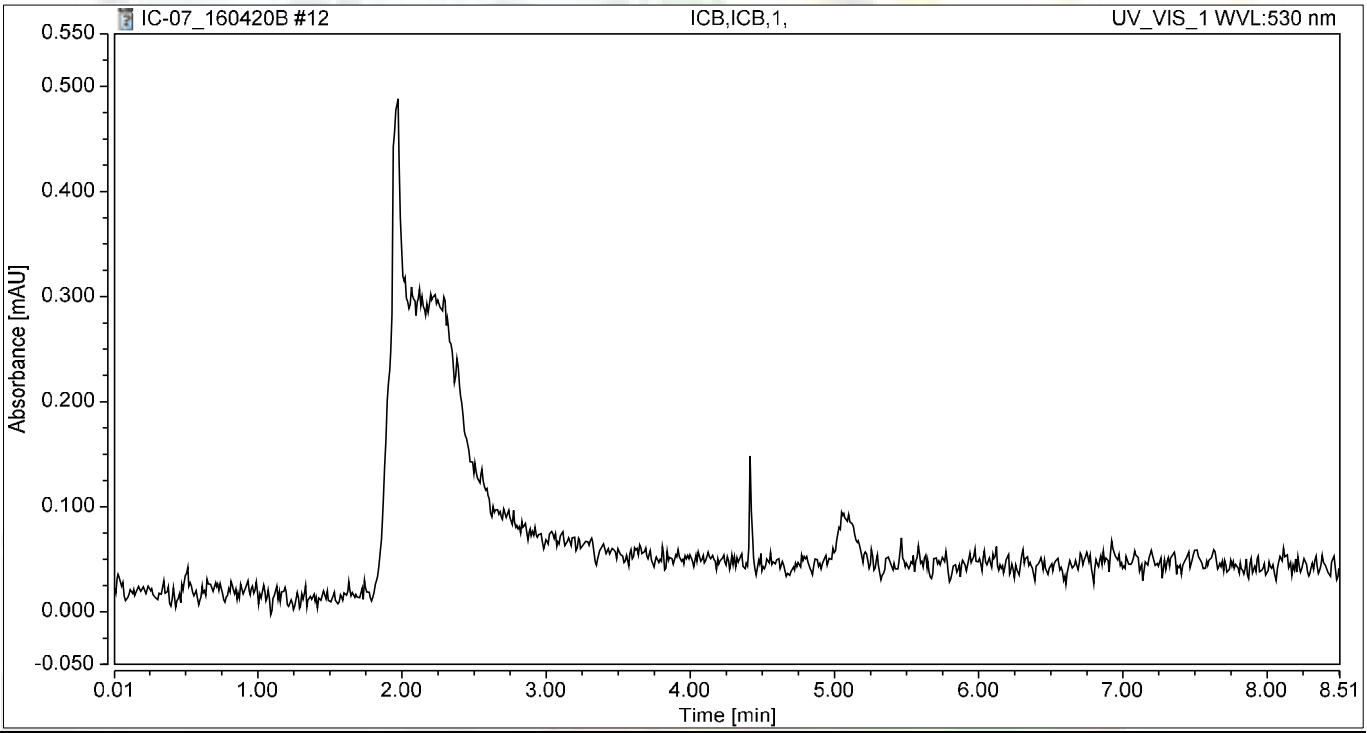
4/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Apr/16 17:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	iBLANK	iBLANK	1	Hexavalent Chromium	04/20/16 2:33 PM	Reported
2	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:44 PM	Reported
3	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 2:54 PM	Reported
4	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:03 PM	Reported
5	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:13 PM	Reported
6	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:22 PM	Reported
7	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/20/16 3:32 PM	Reported
8	BLANK	BLANK	1	Hexavalent Chromium	05/12/16 11:02 AM	Not Reported
9	BLANK	BLANK	1	Hexavalent Chromium	05/12/16 11:13 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	05/12/16 11:23 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/12/16 11:32 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	05/12/16 11:42 AM	Reported
13	MB-R108431	MBLK	1	Hexavalent Chromium	05/12/16 11:51 AM	Reported
14	LCS-R108431	LCS	1	Hexavalent Chromium	05/12/16 12:01 PM	Reported
15	N019719-001A	SAMP	1	Hexavalent Chromium	05/12/16 12:10 PM	Reported
16	N019719-001ADUP	DUP	1	Hexavalent Chromium	05/12/16 12:19 PM	Reported
17	N019719-001AMS	MS	1	Hexavalent Chromium	05/12/16 12:29 PM	Reported
18	N019719-001AMSD	MSD	1	Hexavalent Chromium	05/12/16 12:38 PM	Reported
19	N019719-002A	SAMP	1	Hexavalent Chromium	05/12/16 12:48 PM	Reported
20	N019738-001A	SAMP	1	Hexavalent Chromium	05/12/16 12:57 PM	Reported
21	N019738-002A	SAMP	1	Hexavalent Chromium	05/12/16 1:07 PM	Reported
22	N019738-003A	SAMP	1	Hexavalent Chromium	05/12/16 1:16 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	05/12/16 1:26 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	05/12/16 1:35 PM	Reported
25	N019607-006A	SAMP	5	Hexavalent Chromium	05/12/16 1:45 PM	Reported
26	N019607-006AMS	MS	5	Hexavalent Chromium	05/12/16 1:54 PM	Reported
27	N019607-007A	SAMP	20	Hexavalent Chromium	05/12/16 2:04 PM	Reported
28	N019607-007AMS	MS	20	Hexavalent Chromium	05/12/16 2:13 PM	Reported
29	N019607-008A	SAMP	5	Hexavalent Chromium	05/12/16 2:22 PM	Reported
30	N019607-008AMS	MS	5	Hexavalent Chromium	05/12/16 2:32 PM	Reported
31	N019607-010A	SAMP	5	Hexavalent Chromium	05/12/16 2:41 PM	Reported
32	N019607-010AMS	MS	5	Hexavalent Chromium	05/12/16 2:51 PM	Reported
33	N019628-001A	SAMP	10	Hexavalent Chromium	05/12/16 3:00 PM	Reported
34	N019628-001AMS	MS	10	Hexavalent Chromium	05/12/16 3:10 PM	Reported
35	CCV-3	CCV	1	Hexavalent Chromium	05/12/16 3:19 PM	Reported
36	CCB-3	CCB	1	Hexavalent Chromium	05/12/16 3:29 PM	Reported
37	N019628-002A	SAMP	10	Hexavalent Chromium	05/12/16 3:38 PM	Not Reported
38	N019628-002AMS	MS	10	Hexavalent Chromium	05/12/16 3:48 PM	Not Reported
39	N019628-003A	SAMP	1	Hexavalent Chromium	05/12/16 3:57 PM	Not Reported
40	N019628-003AMS	MS	1	Hexavalent Chromium	05/12/16 4:07 PM	Not Reported
41	N019628-004A	SAMP	200	Hexavalent Chromium	05/12/16 4:16 PM	Reported
42	N019628-004AMS	MS	200	Hexavalent Chromium	05/12/16 4:25 PM	Reported

INJECTION LOG: 160512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019628-005A	SAMP	2500	Hexavalent Chromium	05/12/16 4:35 PM	Reported
44	N019628-005AMS	MS	2500	Hexavalent Chromium	05/12/16 4:44 PM	Reported
45	N019628-006A	SAMP	1	Hexavalent Chromium	05/12/16 4:54 PM	Reported
46	N019628-006AMS	MS	1	Hexavalent Chromium	05/12/16 5:03 PM	Reported
47	CCV-4	CCV1	1	Hexavalent Chromium	05/12/16 5:13 PM	Reported
48	CCB-4	CCB	1	Hexavalent Chromium	05/12/16 5:22 PM	Reported
49	N019628-007A	SAMP	1	Hexavalent Chromium	05/12/16 5:33 PM	Not Reported
50	N019628-007AMS	MS	1	Hexavalent Chromium	05/12/16 5:44 PM	Not Reported
51	N019628-008A	SAMP	1	Hexavalent Chromium	05/12/16 5:54 PM	Reported
52	N019628-008AMS	MS	1	Hexavalent Chromium	05/12/16 6:03 PM	Reported
53	N019628-002A	SAMP	20	Hexavalent Chromium	05/12/16 6:13 PM	Reported
54	N019628-002AMS	MS	20	Hexavalent Chromium	05/12/16 6:22 PM	Reported
55	N019628-003A	SAMP	5	Hexavalent Chromium	05/12/16 6:32 PM	Reported
56	N019628-003AMS	MS	5	Hexavalent Chromium	05/12/16 6:41 PM	Reported
57	N019628-006A	SAMP	5	Hexavalent Chromium	05/12/16 6:51 PM	Reported
58	N019628-006AMS	MS	5	Hexavalent Chromium	05/12/16 7:00 PM	Reported
59	CCV-5	CCV	1	Hexavalent Chromium	05/12/16 7:10 PM	Reported
60	CCB-5	CCB	1	Hexavalent Chromium	05/12/16 7:19 PM	Reported
61	N019628-007A	SAMP	5	Hexavalent Chromium	05/12/16 7:28 PM	Reported
62	N019628-007AMS	MS	5	Hexavalent Chromium	05/12/16 7:38 PM	Reported
63	N019756-001A	SAMP	1	Hexavalent Chromium	05/12/16 7:47 PM	Reported
64	N019756-002A	SAMP	1	Hexavalent Chromium	05/12/16 7:57 PM	Reported
65	N019590-002A	SAMP	5	Hexavalent Chromium	05/12/16 8:06 PM	Not Reported
66	N019590-002AMS	MS	5	Hexavalent Chromium	05/12/16 8:16 PM	Not Reported
67	N019527-002A	SAMP	1	Hexavalent Chromium	05/12/16 8:25 PM	Not Reported
68	N019527-002AMS	MS	1	Hexavalent Chromium	05/12/16 8:35 PM	Not Reported
69	N019527-005A	SAMP	1	Hexavalent Chromium	05/12/16 8:44 PM	Not Reported
70	N019527-005AMS	MS	1	Hexavalent Chromium	05/12/16 8:54 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/12/16 9:03 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/12/16 9:13 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160512A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**12/May/16 22:11:25**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	iBLANK	1	1000	Unknown		04/20/2016 14:33	Finished	INSTRUMENT BLANK
2	STD1-0.2 ppb	2	1000	Calibration Standard	01	04/20/2016 14:44	Finished	0.2 ppb, IWST160401A
3	STD2-1.0 ppb	3	1000	Calibration Standard	02	04/20/2016 14:54	Finished	1.0 ppb, IWST160401A
4	STD3-5.0 ppb	4	1000	Calibration Standard	03	04/20/2016 15:03	Finished	5.0 ppb, IWST160401A
5	STD4-10.0 ppb	5	1000	Calibration Standard	04	04/20/2016 15:13	Finished	10 ppb, IWST160401A
6	STD5-15.0 ppb	6	1000	Calibration Standard	05	04/20/2016 15:22	Finished	15 ppb, IWST160401A
7	STD6-20.0 ppb	7	1000	Calibration Standard	06	04/20/2016 15:32	Finished	20 ppb, IWST160401A
8	BLANK	1	1000	Unknown		05/12/2016 11:02	Finished	
9	BLANK	2	1000	Unknown		05/12/2016 11:13	Finished	
10	CCV-1,CCV,1,	3	1000	Unknown		05/12/2016 11:23	Finished	CCV @5ppb, IWST-160401A
11	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/12/2016 11:32	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	5	1000	Unknown		05/12/2016 11:42	Finished	CCB R160512C
13	MB-H2O,MBLK,1	6	1000	Unknown		05/12/2016 11:51	Finished	MB R160502C
14	LCS-H2O,LCS,1	7	1000	Unknown		05/12/2016 12:01	Finished	LCS, IWST-160401B
15	N019719-001A,SAMP	8	1000	Unknown		05/12/2016 12:10	Finished	SAMP, 10mL
16	N019719-001ADUP,D	9	1000	Unknown		05/12/2016 12:19	Finished	DUP, 10mL
17	N019719-001AMS,MS	10	1000	Unknown		05/12/2016 12:29	Finished	MS (5ppb) , IWST-160401B, 10
18	N019719-001AMSD,M	11	1000	Unknown		05/12/2016 12:38	Finished	MSD (5ppb) , IWST-160401B,
19	N019719-002A,SAMP	12	1000	Unknown		05/12/2016 12:48	Finished	SAMP, 10mL
20	N019738-001A,SAMP	13	1000	Unknown		05/12/2016 12:57	Finished	SAMP, 10mL
21	N019738-002A,SAMP	14	1000	Unknown		05/12/2016 13:07	Finished	SAMP, 10mL
22	N019738-003A,SAMP	15	1000	Unknown		05/12/2016 13:16	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	16	1000	Unknown		05/12/2016 13:26	Finished	CCV @10ppb, IWST-160401A
24	CCB-2,CCB,1,	17	1000	Unknown		05/12/2016 13:35	Finished	CCB R160426G
25	N019607-006A,SAMP	18	1000	Unknown		05/12/2016 13:45	Finished	SAMP, 2.0>10mL
26	N019607-006AMS,MS	19	1000	Unknown		05/12/2016 13:54	Finished	MS (1ppb), IWST-160401B, 2.0
27	N019607-007A,SAMP	20	1000	Unknown		05/12/2016 14:04	Finished	SAMP, 0.5>10mL
28	N019607-007AMS,MS	21	1000	Unknown		05/12/2016 14:13	Finished	MS (5ppb), IWST-160401B, 0.5
29	N019607-008A,SAMP	22	1000	Unknown		05/12/2016 14:22	Finished	SAMP, 2.0>10mL
30	N019607-008AMS,MS	23	1000	Unknown		05/12/2016 14:32	Finished	MS (1ppb), IWST-160401B, 2.0
31	N019607-010A,SAMP	24	1000	Unknown		05/12/2016 14:41	Finished	SAMP, 2.0>10mL
32	N019607-010AMS,MS	25	1000	Unknown		05/12/2016 14:51	Finished	MS (1ppb), IWST-160401B, 2.0
33	N019628-001A,SAMP	26	1000	Unknown		05/12/2016 15:00	Finished	SAMP, 1.0>10mL
34	N019628-001AMS,MS	27	1000	Unknown		05/12/2016 15:10	Finished	MS (5ppb), IWST-160401B, 1.0
35	CCV-3,CCV,1,	28	1000	Unknown		05/12/2016 15:19	Finished	CCV @5pb, IWST-160401A
36	CCB-3,CCB,1,	29	1000	Unknown		05/12/2016 15:29	Finished	CCB
37	N019628-002A,SAMP	30	1000	Unknown		05/12/2016 15:38	Finished	SAMP, 1.0>10mL
38	N019628-002AMS,MS	31	1000	Unknown		05/12/2016 15:48	Finished	MS (5ppb), IWST-160401B, 1.0
39	N019628-003A,SAMP	32	1000	Unknown		05/12/2016 15:57	Finished	SAMP, 10mL
40	N019628-003AMS,MS	33	1000	Unknown		05/12/2016 16:07	Finished	MS (1ppb) , IWST-160401B, 2.
41	N019628-004A,SAMP	34	1000	Unknown		05/12/2016 16:16	Finished	SAMP, 50uL>10mL
42	N019628-004AMS,MS	35	1000	Unknown		05/12/2016 16:25	Finished	MS (5ppb), IWST-160401B, 50
43	N019628-005A,SAMP	36	1000	Unknown		05/12/2016 16:35	Finished	SAMP, 4uL>10mL
44	N019628-005AMS,MS	37	1000	Unknown		05/12/2016 16:44	Finished	MS (5ppb), IWST-160401B, 4u
45	N019628-006A,SAMP	38	1000	Unknown		05/12/2016 16:54	Finished	SAMP, 10mL
46	N019628-006AMS,MS	39	1000	Unknown		05/12/2016 17:03	Finished	MS (1ppb) , IWST-160401B, 2.
47	CCV-4,CCV1,1,	40	1000	Unknown		05/12/2016 17:13	Finished	CCV @10ppb, IWST-160401A
48	CCB-4,CCB,1,	41	1000	Unknown		05/12/2016 17:22	Finished	CCB
49	N019628-007A,SAMP	1	1000	Unknown		05/12/2016 17:33	Finished	SAMP, 10mL
50	N019628-007AMS,MS	2	1000	Unknown		05/12/2016 17:44	Finished	MS (1ppb) , IWST-160401B, 2.
51	N019628-008A,SAMP	3	1000	Unknown		05/12/2016 17:54	Finished	SAMP, 10mL
52	N019628-008AMS,MS	4	1000	Unknown		05/12/2016 18:03	Finished	MS (1ppb) , IWST-160401B, 2.
53	N019628-002A,SAMP	5	1000	Unknown		05/12/2016 18:13	Finished	SAMP, 0.5>10mL
54	N019628-002AMS,MS	6	1000	Unknown		05/12/2016 18:22	Finished	MS (5ppb), IWST-160401B, 0.5
55	N019628-003A,SAMP	7	1000	Unknown		05/12/2016 18:32	Finished	SAMP, 2.0>10mL
56	N019628-003AMS,MS	8	1000	Unknown		05/12/2016 18:41	Finished	MS (1ppb), IWST-160401B, 2.0
57	N019628-006A,SAMP	9	1000	Unknown		05/12/2016 18:51	Finished	SAMP, 2.0>10mL
58	N019628-006AMS,MS	10	1000	Unknown		05/12/2016 19:00	Finished	MS (1ppb), IWST-160401B, 2.0
59	CCV-5,CCV,1,	11	1000	Unknown		05/12/2016 19:10	Finished	CCV @5pb, IWST-160401A
60	CCB-5,CCB,1,	12	1000	Unknown		05/12/2016 19:19	Finished	CCB

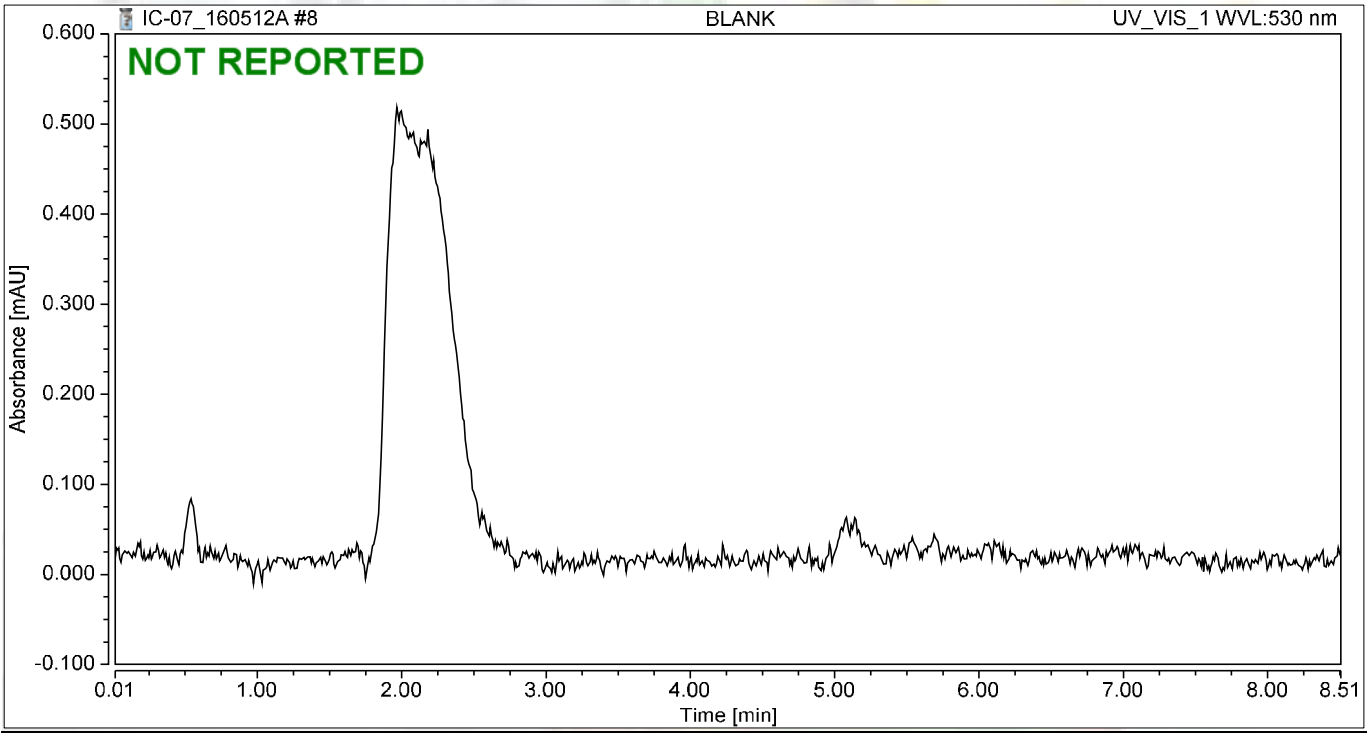
61	N019628-007A,SAMP	13	1000	Unknown		05/12/2016 19:28	Finished	SAMP, 2.0>10mL
62	N019628-007AMS,MS	14	1000	Unknown		05/12/2016 19:38	Finished	MS (1ppb), IWST-160401B, 2.0
63	N019756-001A,SAMP	15	1000	Unknown		05/12/2016 19:47	Finished	SAMP, 10mL
64	N019756-002A,SAMP	16	1000	Unknown		05/12/2016 19:57	Finished	SAMP, 10mL
65	N019590-002A,SAMP	17	1000	Unknown		05/12/2016 20:06	Finished	SAMP, 2.0>10mL
66	N019590-002AMS,MS	18	1000	Unknown		05/12/2016 20:16	Finished	MS (1ppb), IWST-160401B, 2.0
67	N019527-002A,SAMP	19	1000	Unknown		05/12/2016 20:25	Finished	SAMP, 10mL
68	N019527-002AMS,MS	20	1000	Unknown		05/12/2016 20:35	Finished	MS (1ppb) , IWST-160401B,10
69	N019527-005A,SAMP	21	1000	Unknown		05/12/2016 20:44	Finished	SAMP, 10mL
70	N019527-005AMS,MS	22	1000	Unknown		05/12/2016 20:54	Finished	MS (1ppb) , IWST-160401B,10
71	CCV-6,CCV1,1,	23	1000	Unknown		05/12/2016 21:03	Finished	CCV @10ppb, IWST-160401A
72	CCB-6,CCB,1,	24	1000	Unknown		05/12/2016 21:13	Finished	CCB
73	SHUTDOWN	25	1000	Unknown		05/12/2016 21:22	Finished	
74	Eluent: R160510A, R	26	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R160510F	27	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

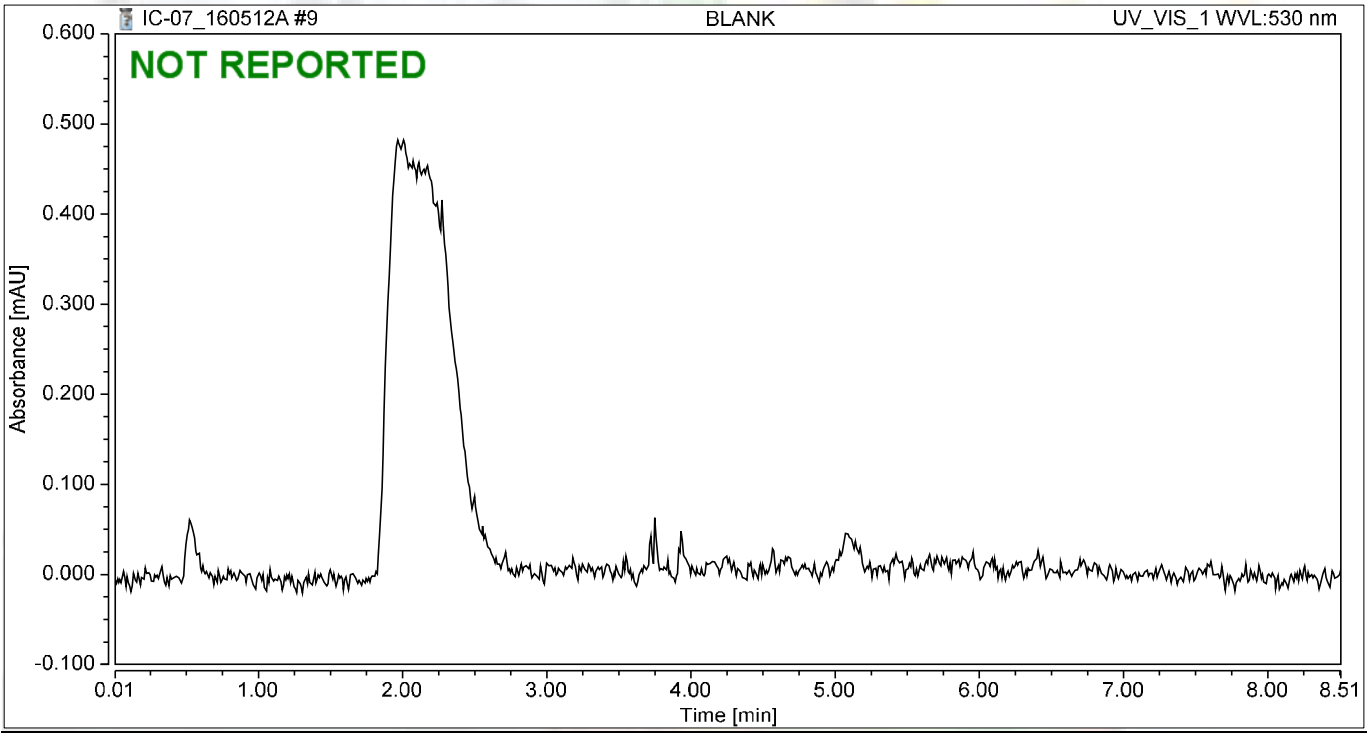
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

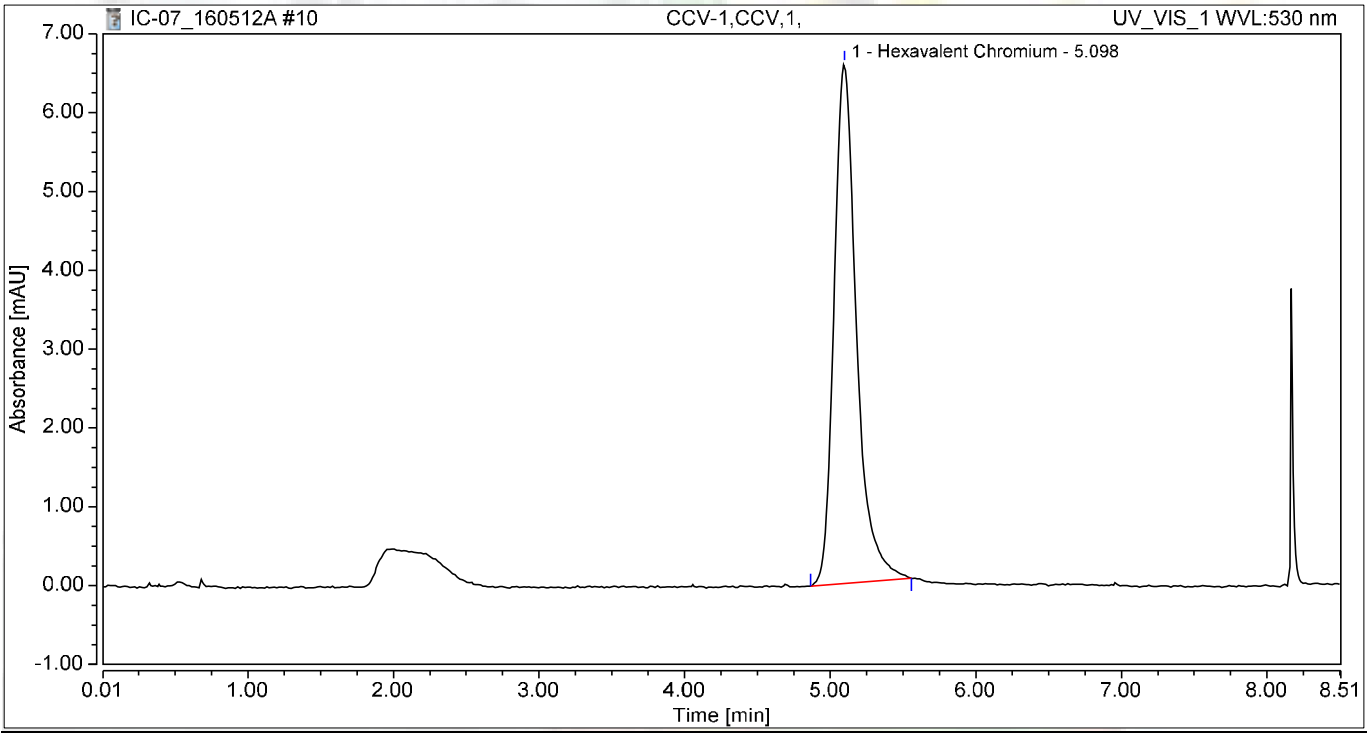
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

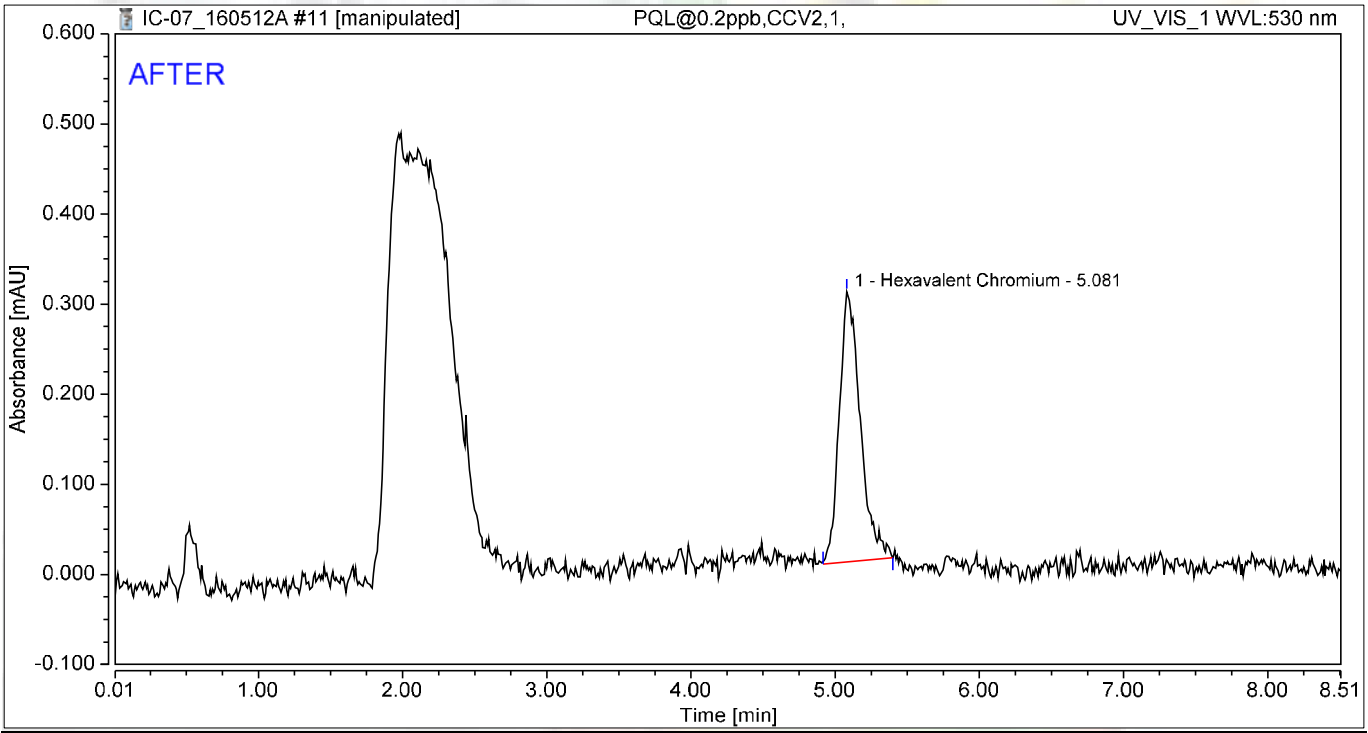
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	1.178	6.599	100.00	100.00	5.0038
Total:			**1.178**	**6.599**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.051	0.300	100.00	100.00	0.2152
Total:			**0.051**	**0.300**	**100.00**	**100.00**	

5/13/2016

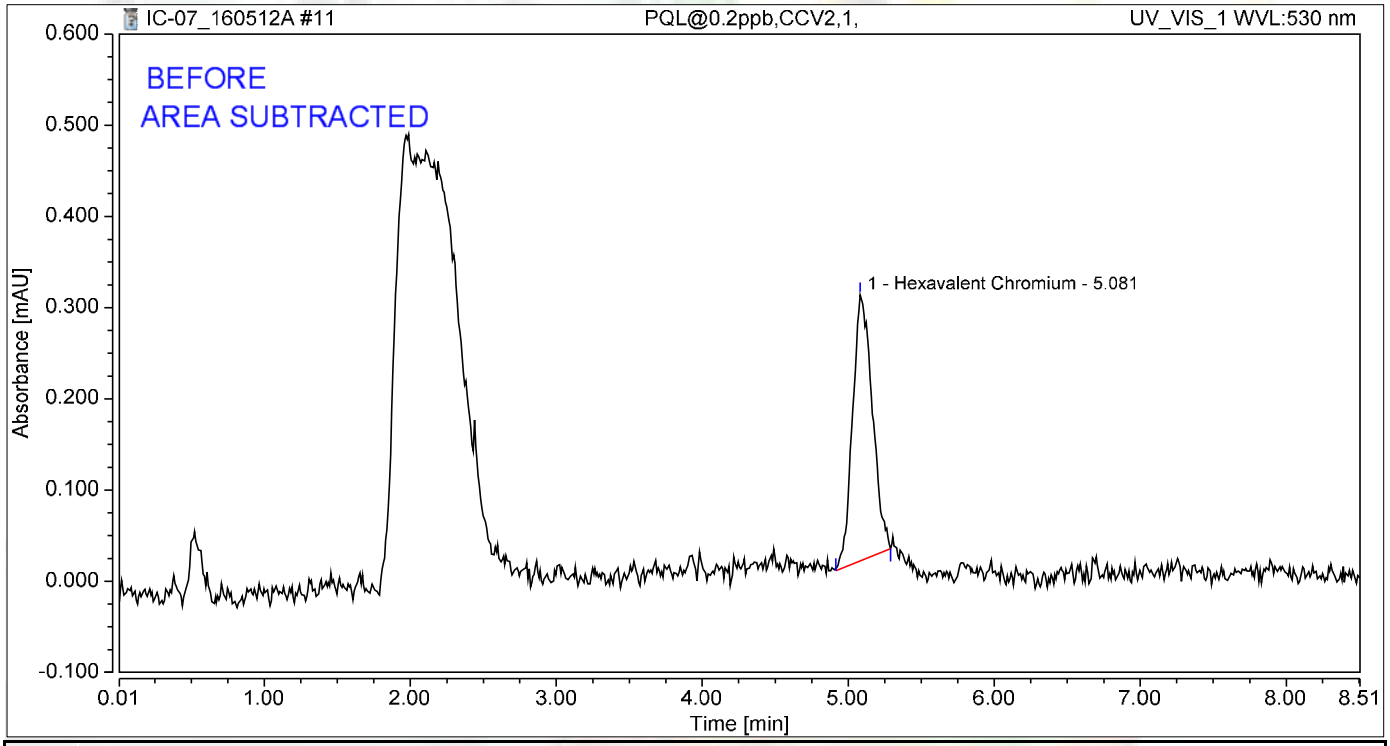
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.045	0.292	100.00	100.00	0.1931
Total:			**0.045**	**0.292**	**100.00**	**100.00**	

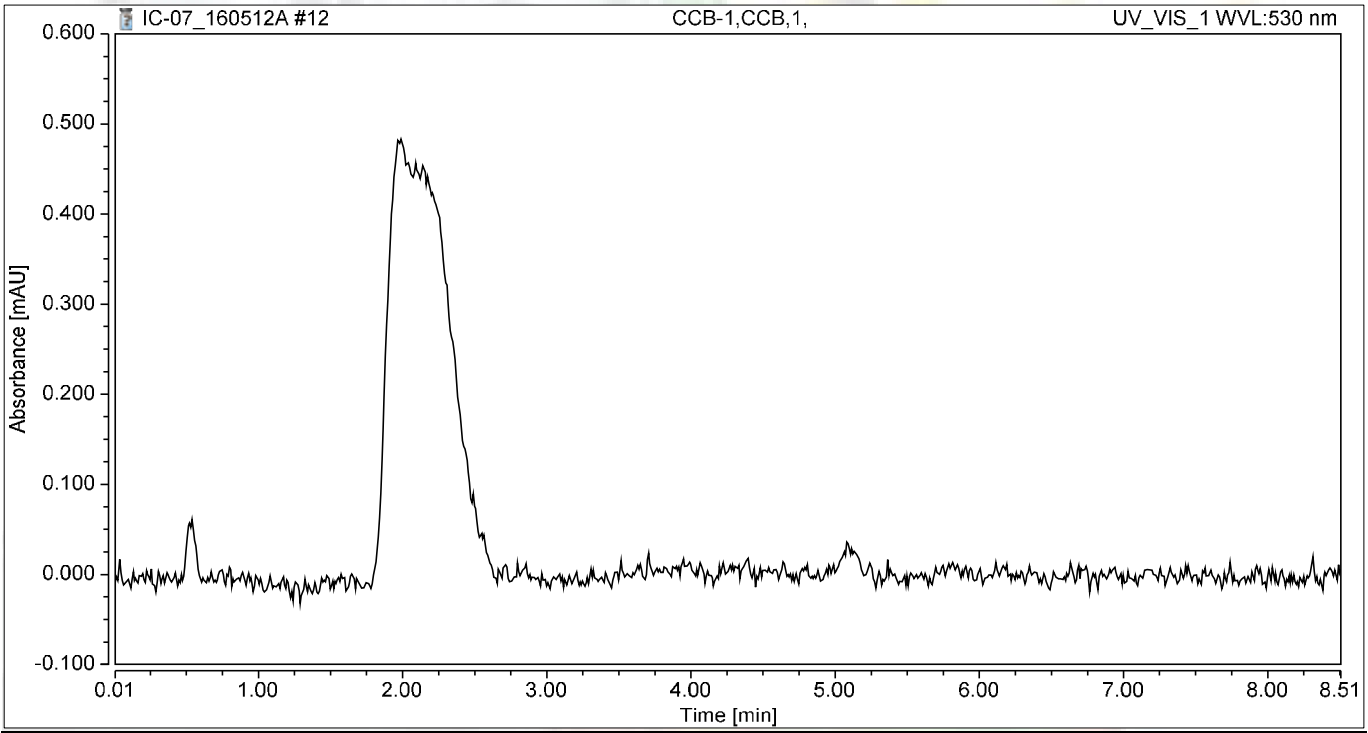
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

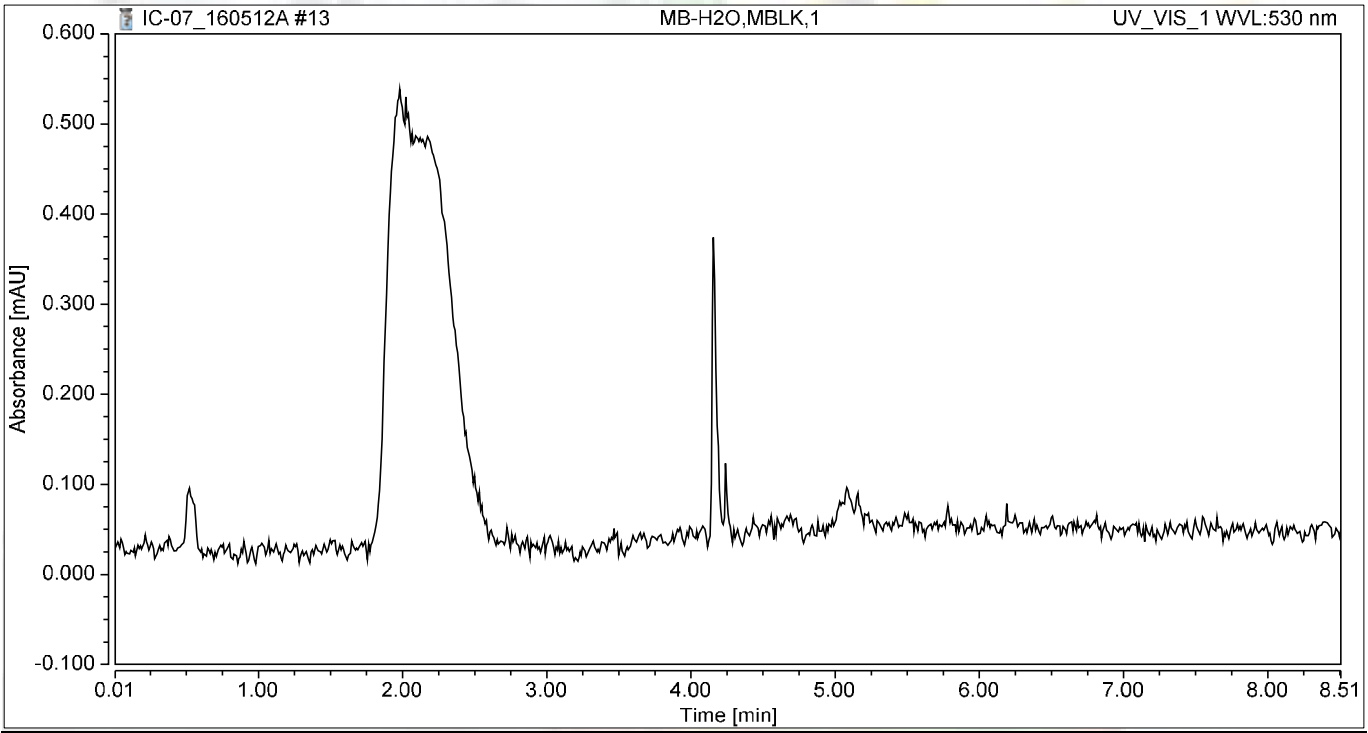
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

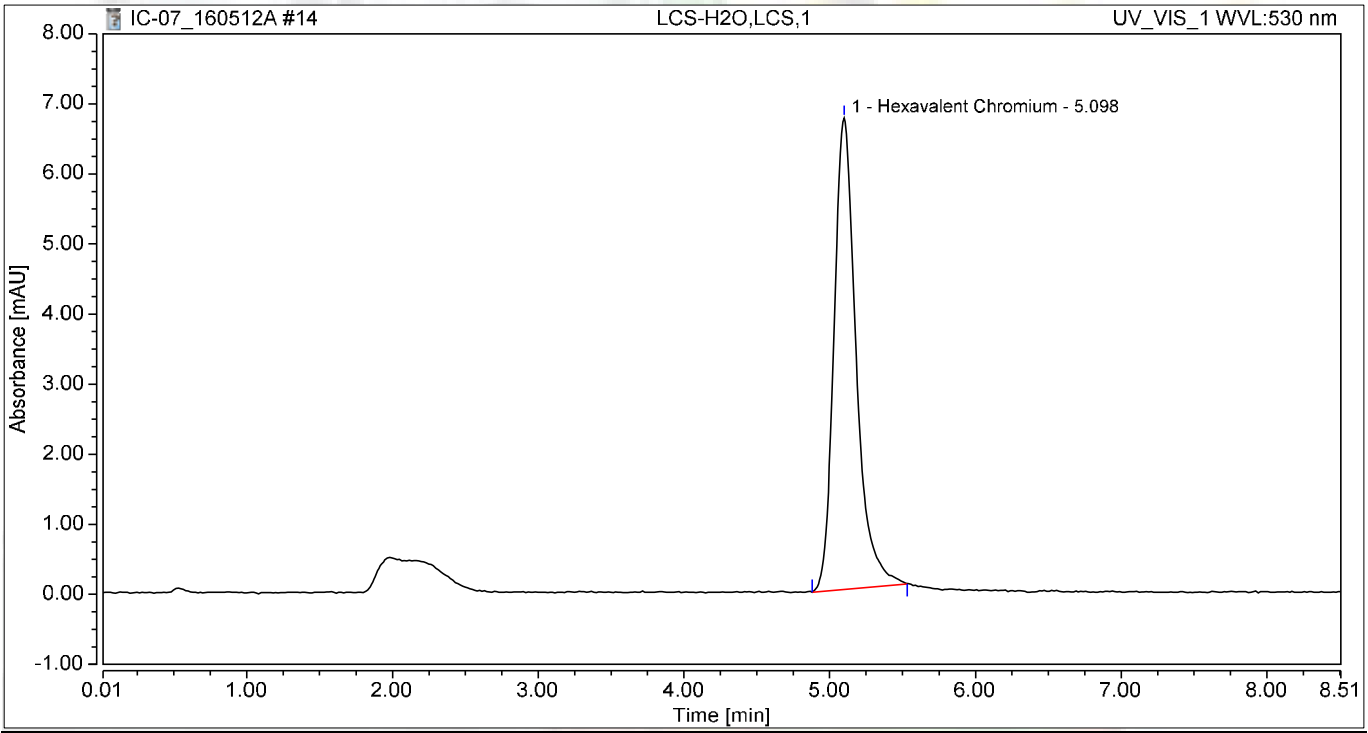
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

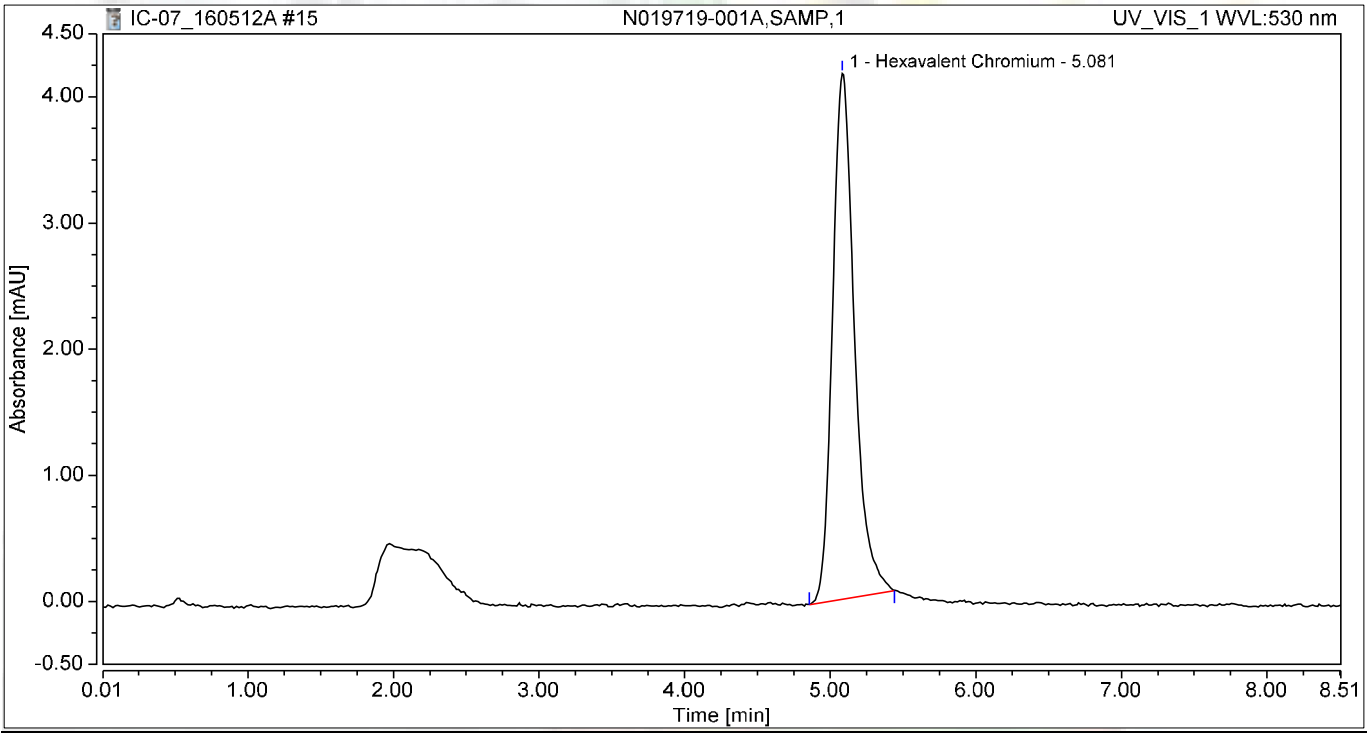
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	1.186	6.727	100.00	100.00	5.0374
Total:			**1.186**	**6.727**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

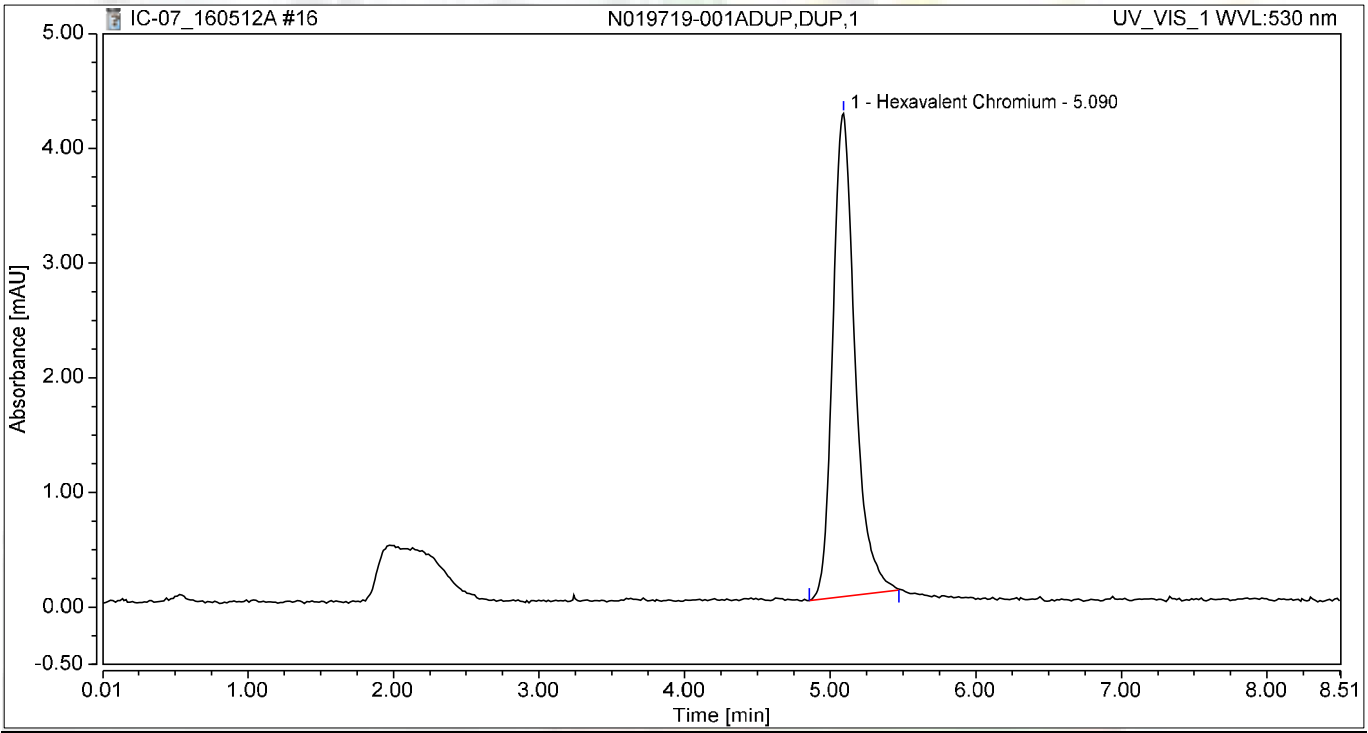
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.728	4.170	100.00	100.00	3.0912
Total:			**0.728**	**4.170**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

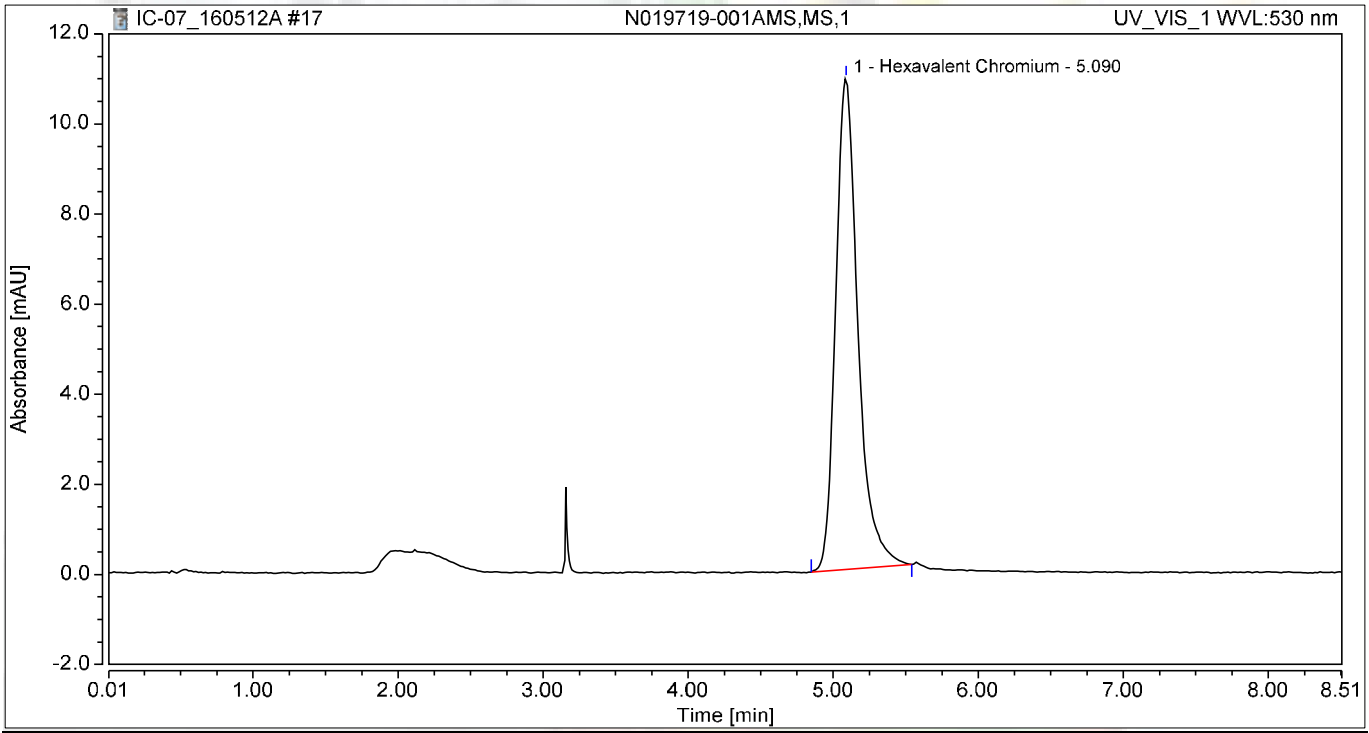
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.742	4.211	100.00	100.00	3.1536
Total:			**0.742**	**4.211**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

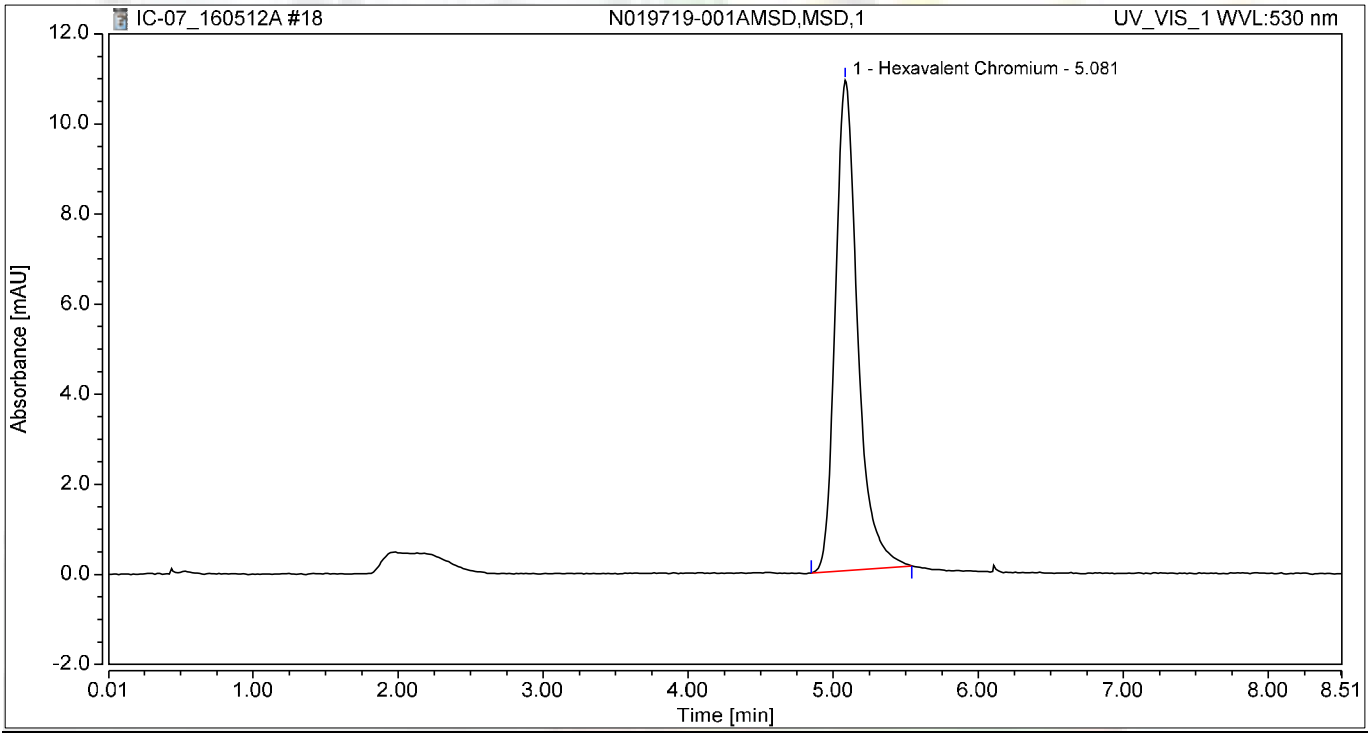
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.942	10.903	100.00	100.00	8.2479
Total:			**1.942**	**10.903**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-001AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

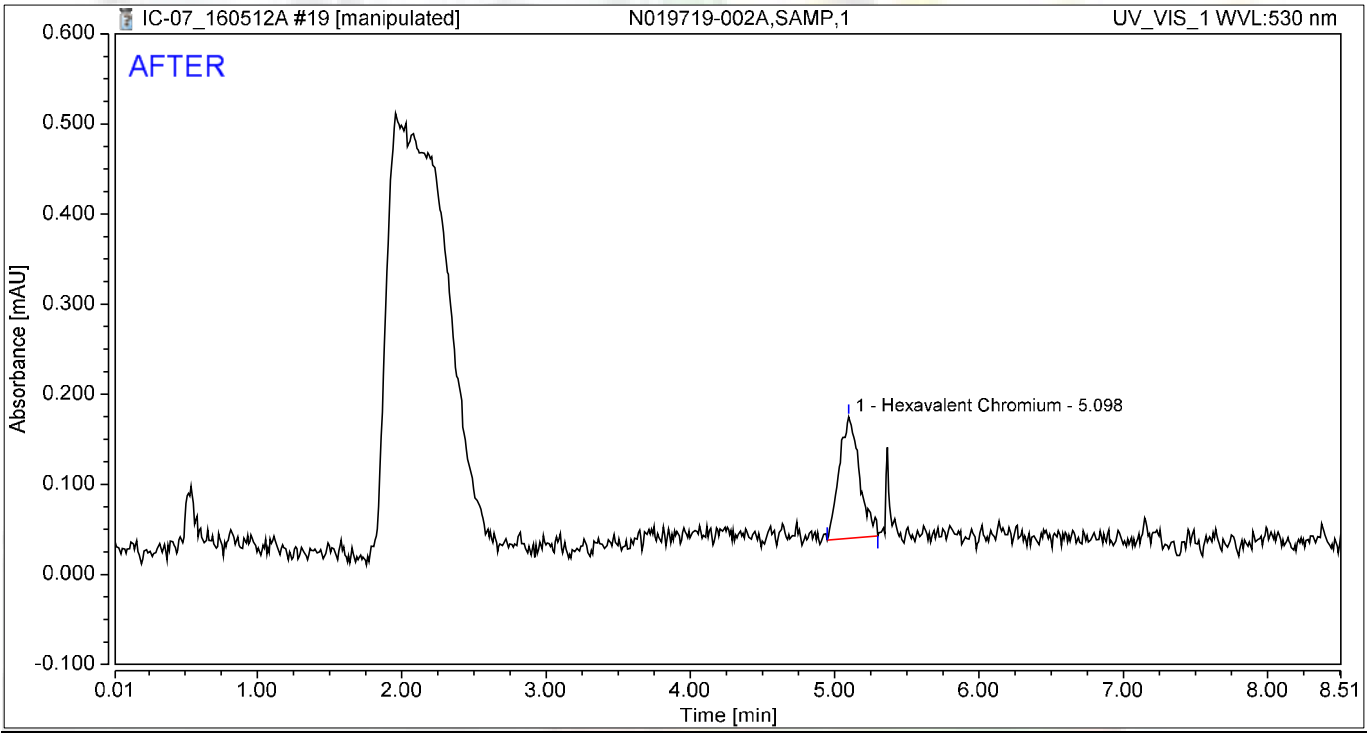
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	1.946	10.883	100.00	100.00	8.2652
Total:			**1.946**	**10.883**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019719-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.022	0.135	100.00	100.00	0.0934
Total:			**0.022**	**0.135**	**100.00**	**100.00**	

5/13/2016

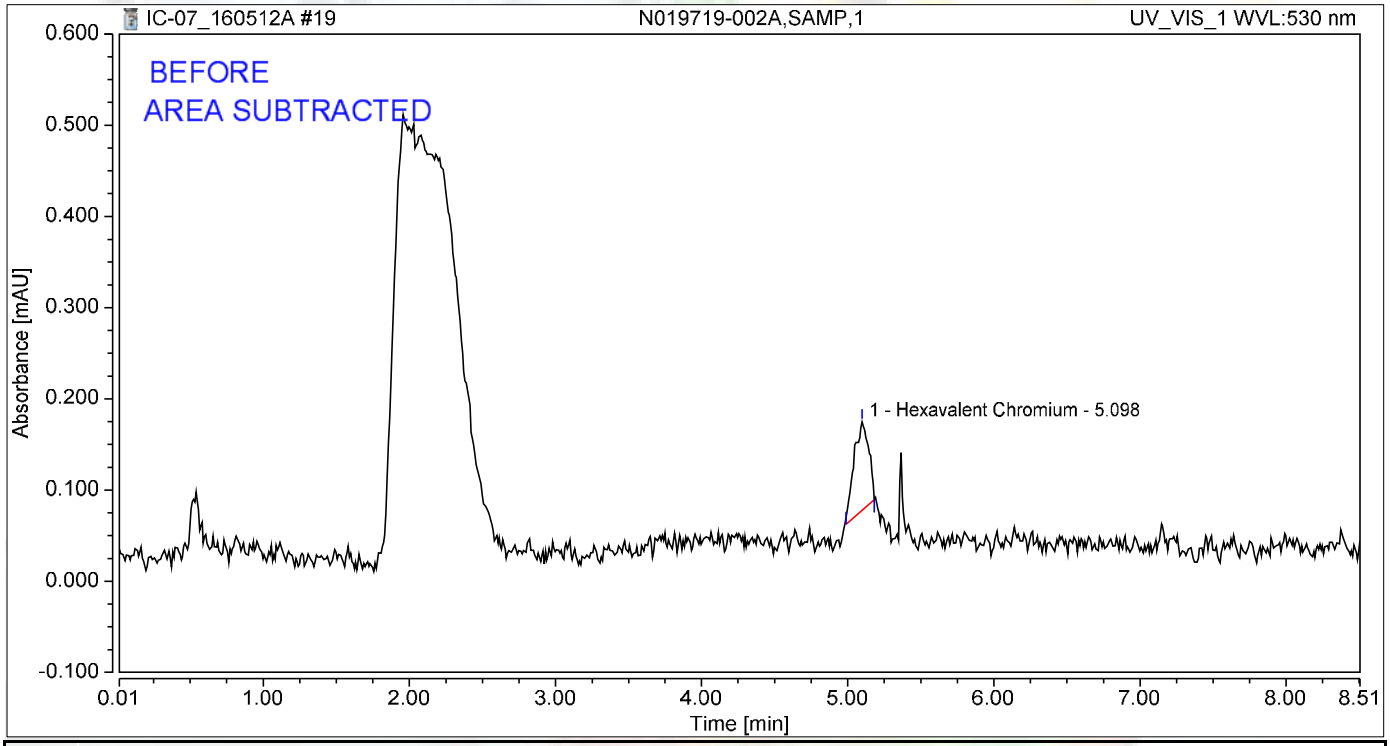
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019719-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.011	0.097	100.00	100.00	0.0478
Total:			**0.011**	**0.097**	**100.00**	**100.00**	

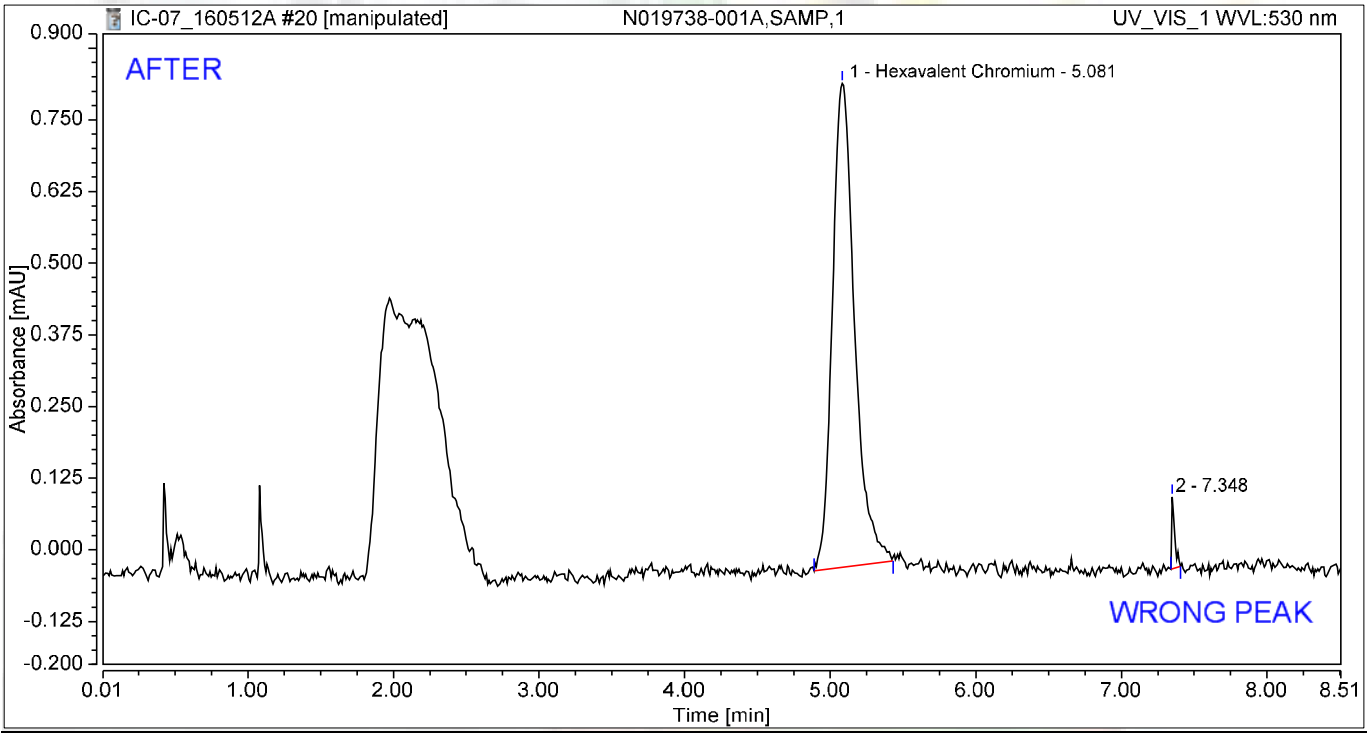
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.149	0.844	98.02	87.05	0.6340
2		7.348	0.003	0.126	1.98	12.95	n.a.
Total:			**0.152**	**0.970**	**100.00**	**100.00**	

5/13/2016

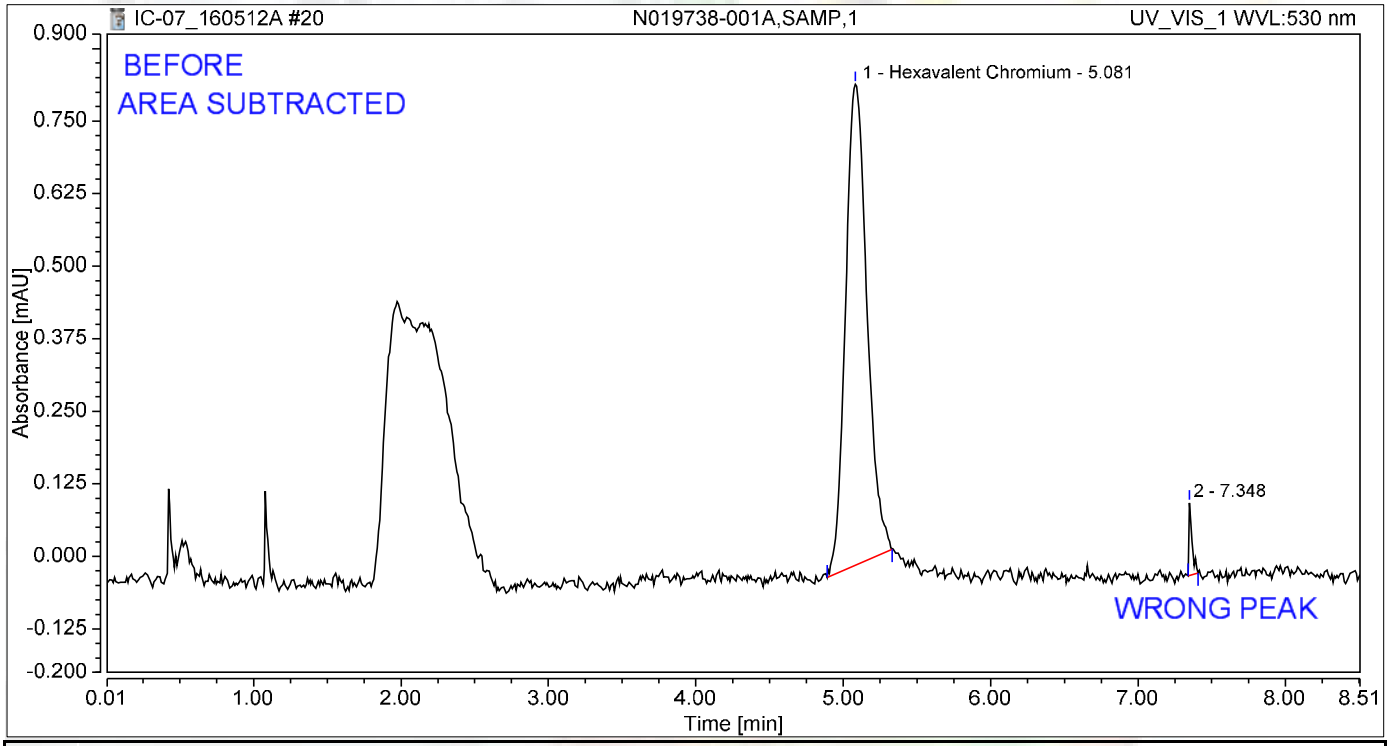
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.139	0.829	97.88	86.84	0.5920
2		7.348	0.003	0.126	2.12	13.16	n.a.
Total:			**0.142**	**0.955**	**100.00**	**100.00**	

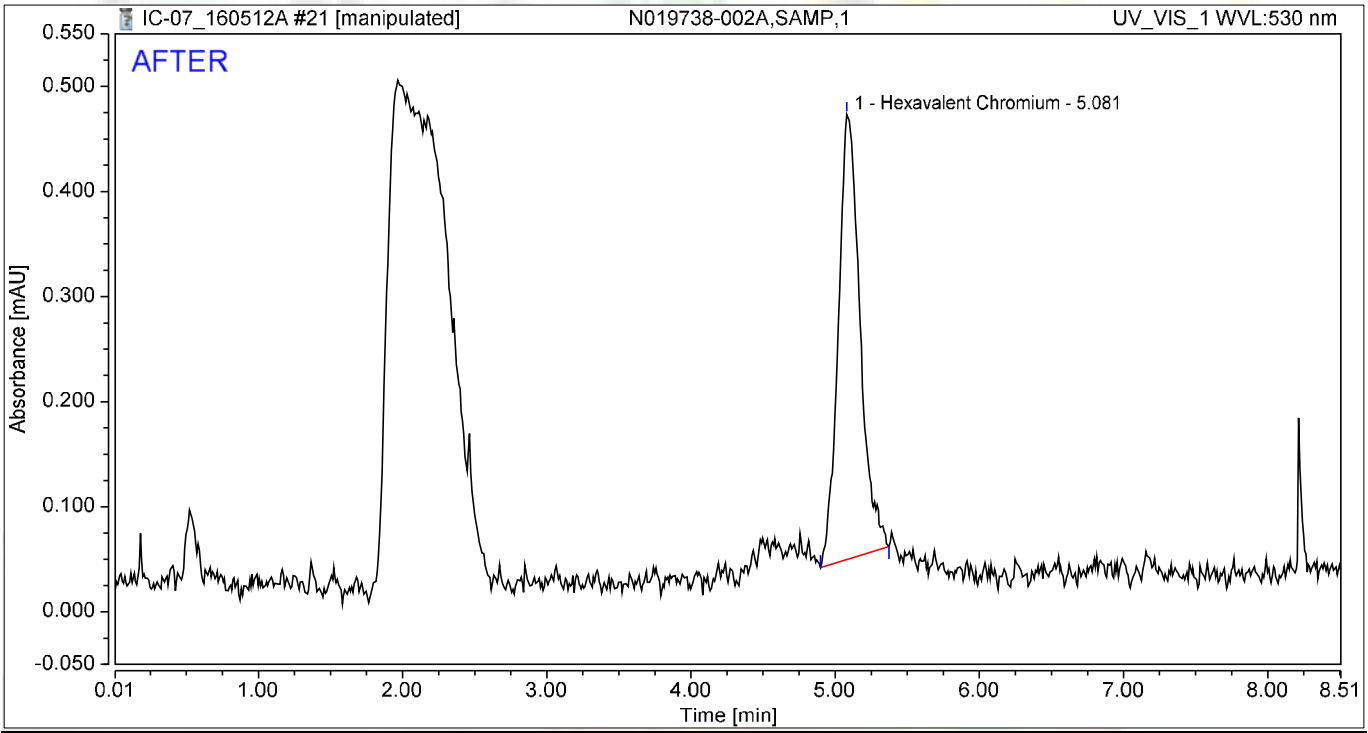
JAS 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.074	0.423	100.00	100.00	0.3145
Total:			**0.074**	**0.423**	**100.00**	**100.00**	

5/13/2016

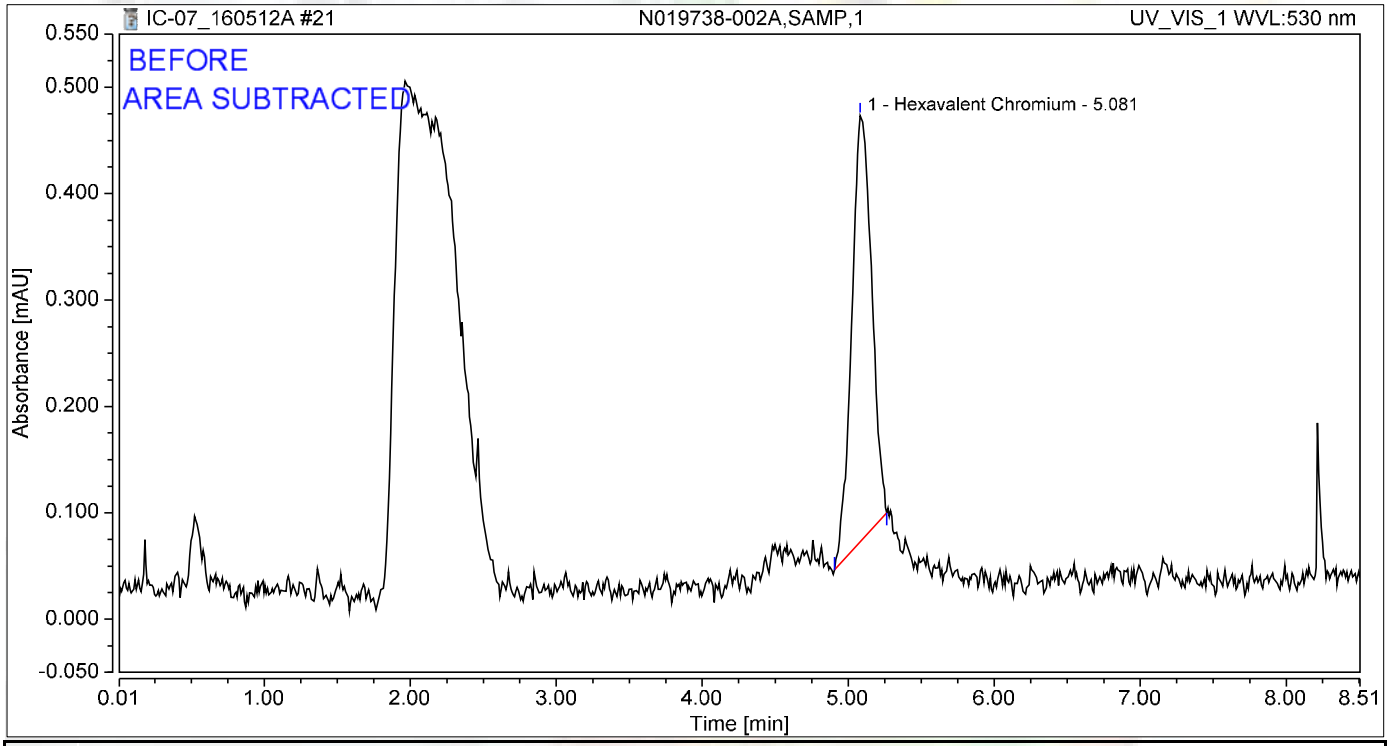
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.063	0.400	100.00	100.00	0.2680
Total:			**0.063**	**0.400**	**100.00**	**100.00**	

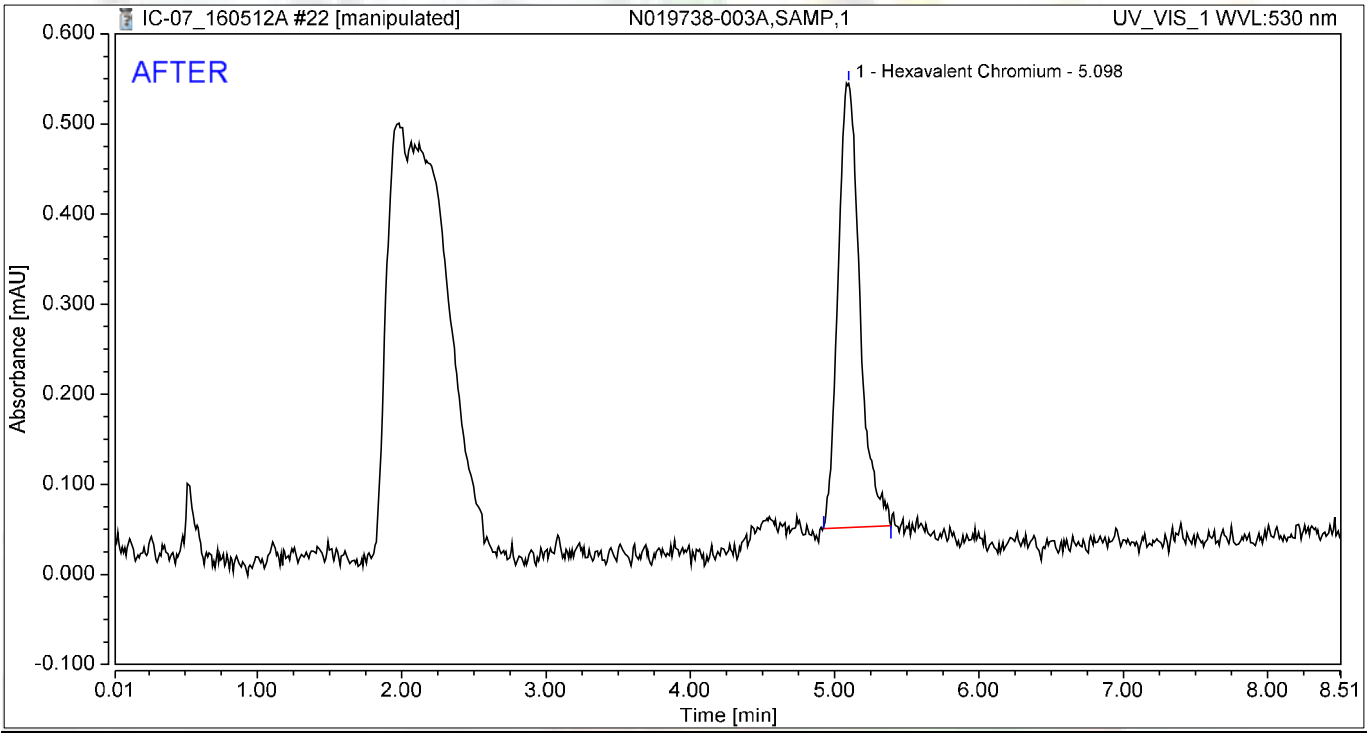
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.087	0.493	100.00	100.00	0.3694
Total:			**0.087**	**0.493**	**100.00**	**100.00**	

5/13/2016

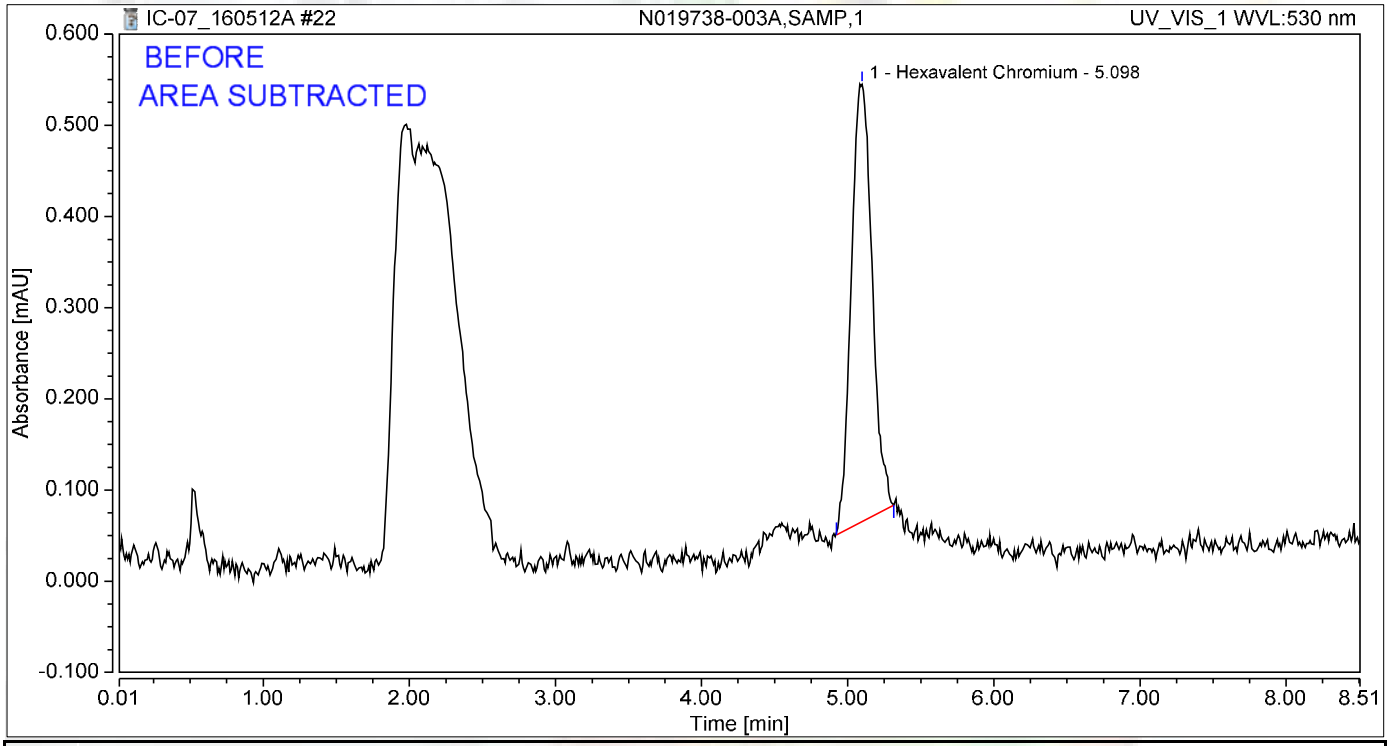
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019738-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.079	0.480	100.00	100.00	0.3375
Total:			**0.079**	**0.480**	**100.00**	**100.00**	

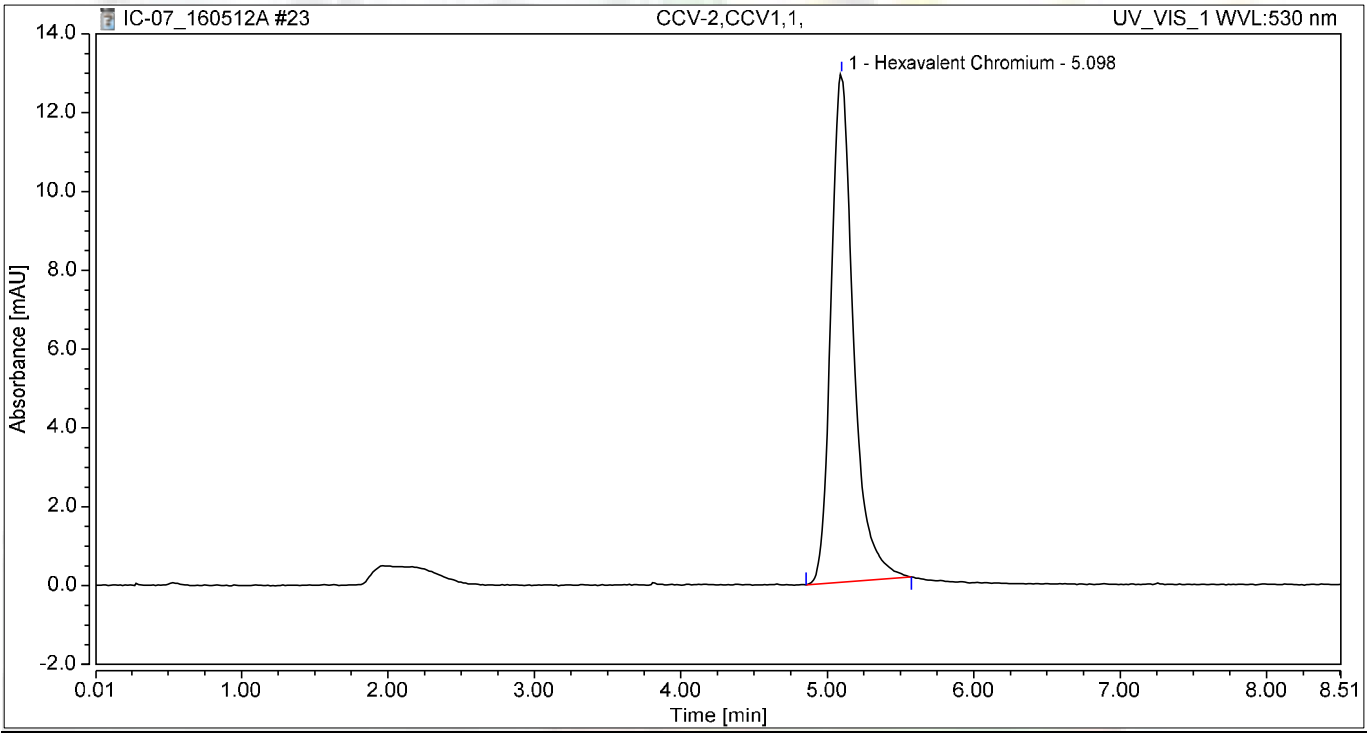
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

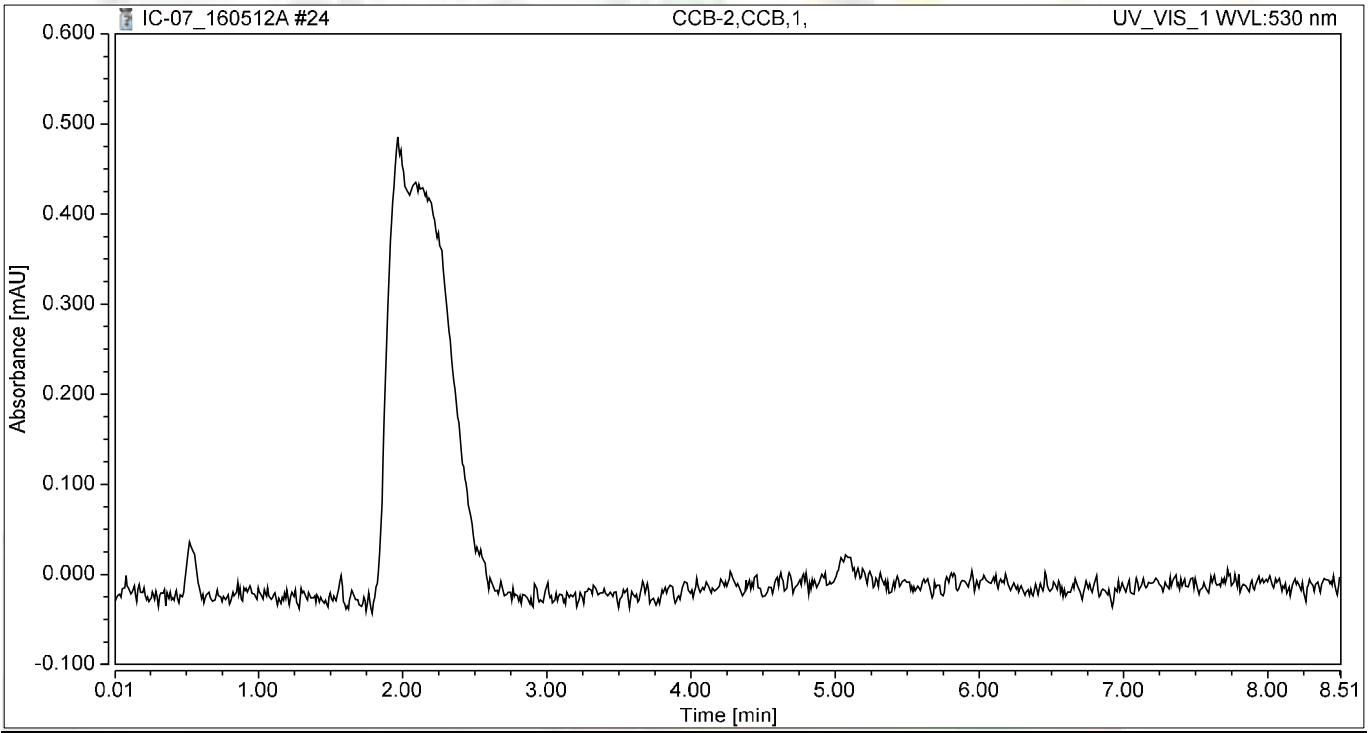
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	2.298	12.881	100.00	100.00	9.7622
Total:			**2.298**	**12.881**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

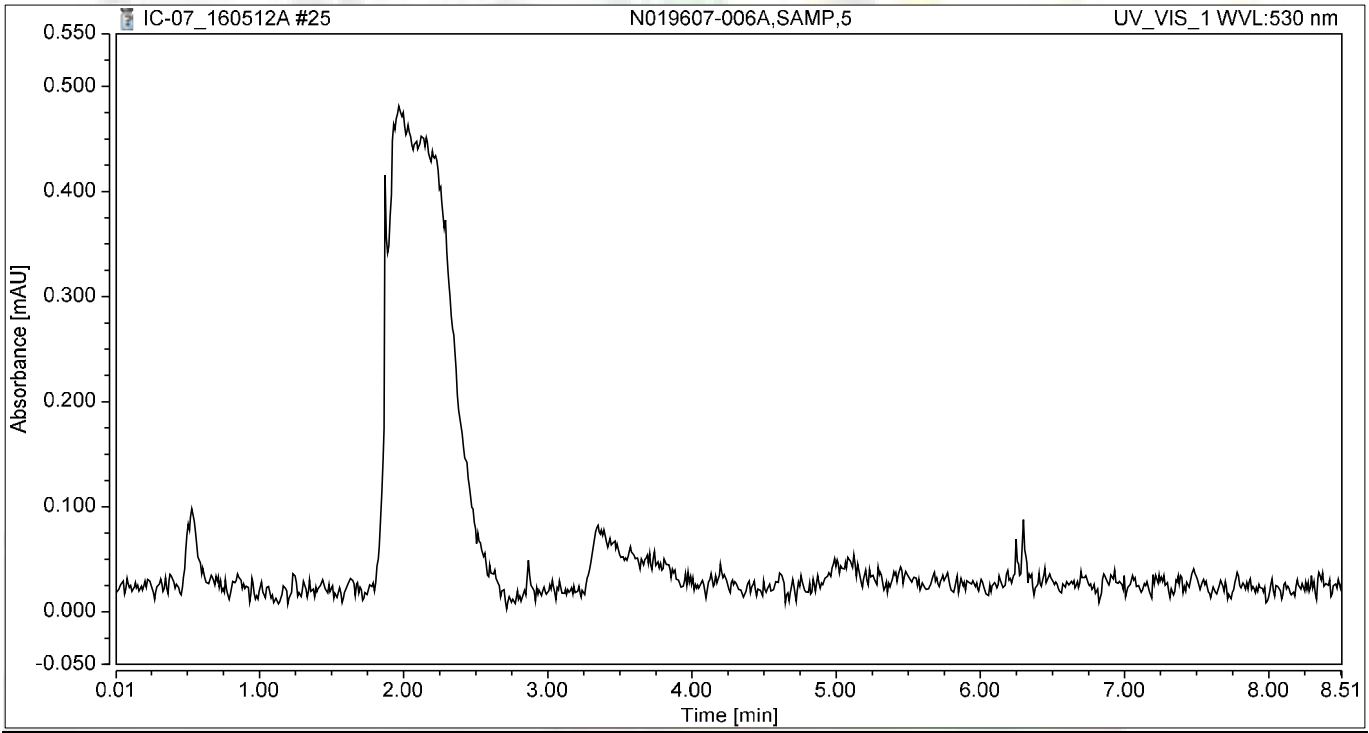
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

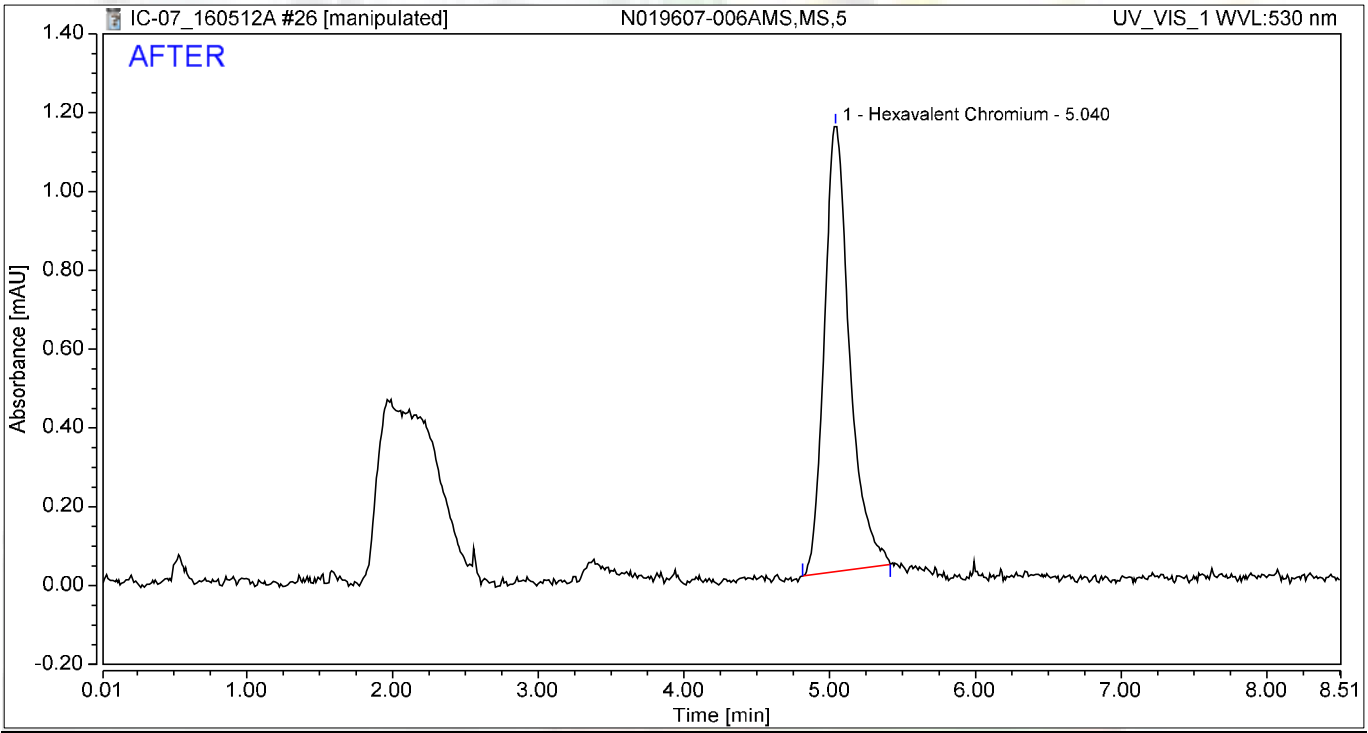
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	0.228	1.130	100.00	100.00	0.9665
Total:			**0.228**	**1.130**	**100.00**	**100.00**	

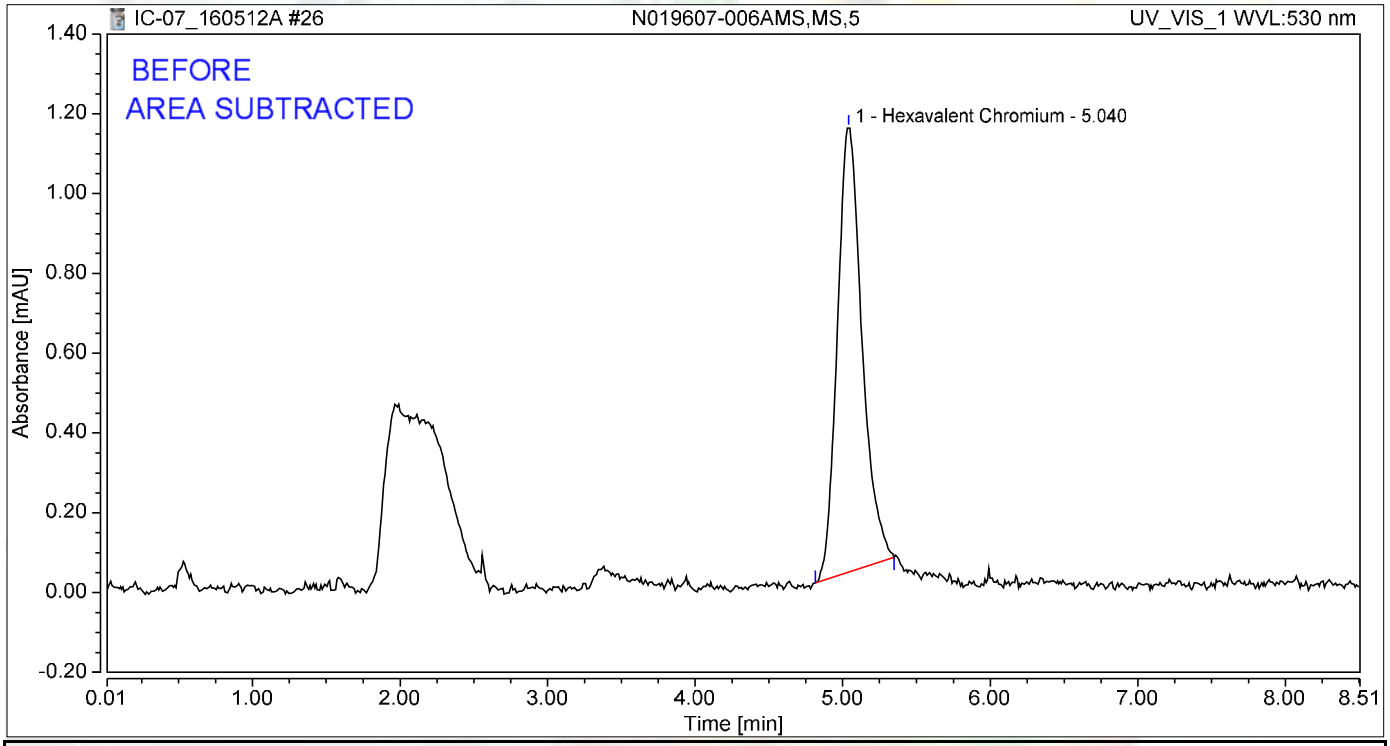
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	0.216	1.113	100.00	100.00	0.9154
Total:			**0.216**	**1.113**	**100.00**	**100.00**	

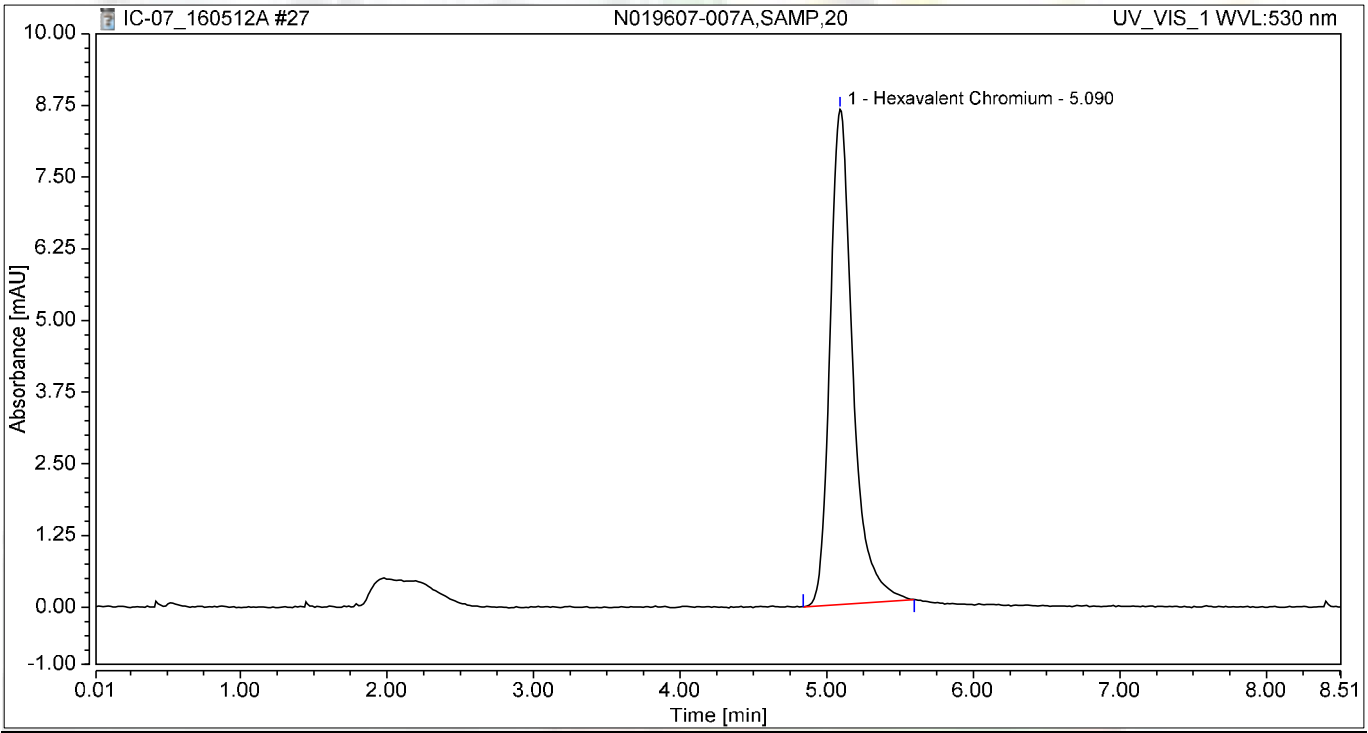
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-007A,SAMP,20**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

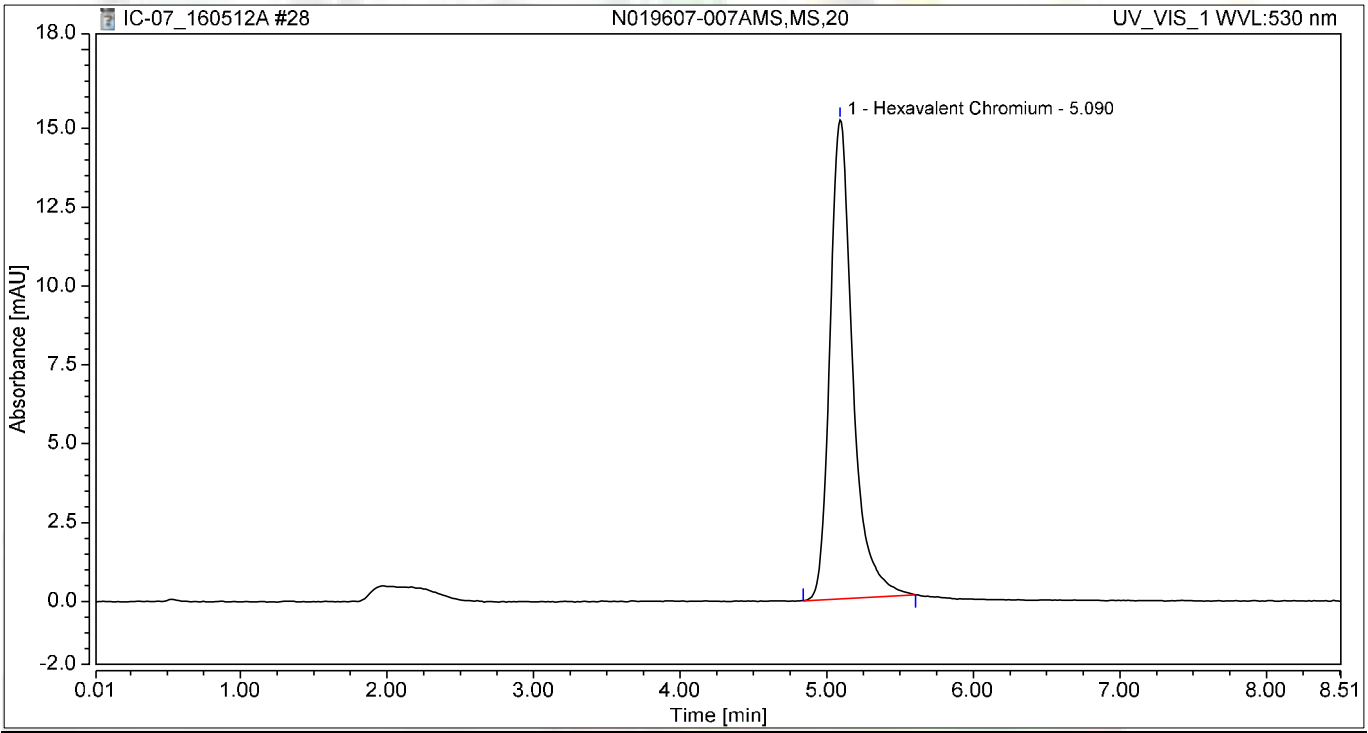
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.558	8.633	100.00	100.00	6.6156
Total:			**1.558**	**8.633**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-007AMS,MS,20**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

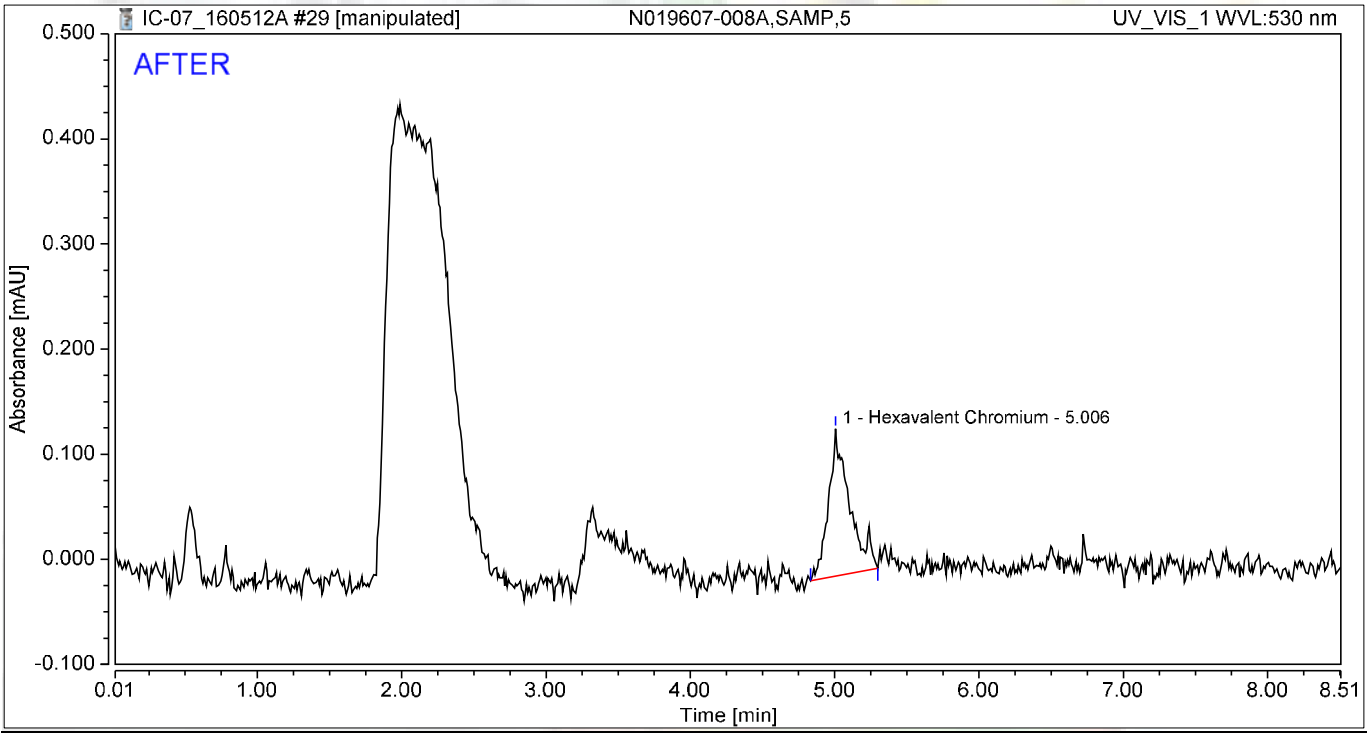
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.743	15.200	100.00	100.00	11.6522
Total:			**2.743**	**15.200**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.023	0.140	100.00	100.00	0.0994
Total:			**0.023**	**0.140**	**100.00**	**100.00**	

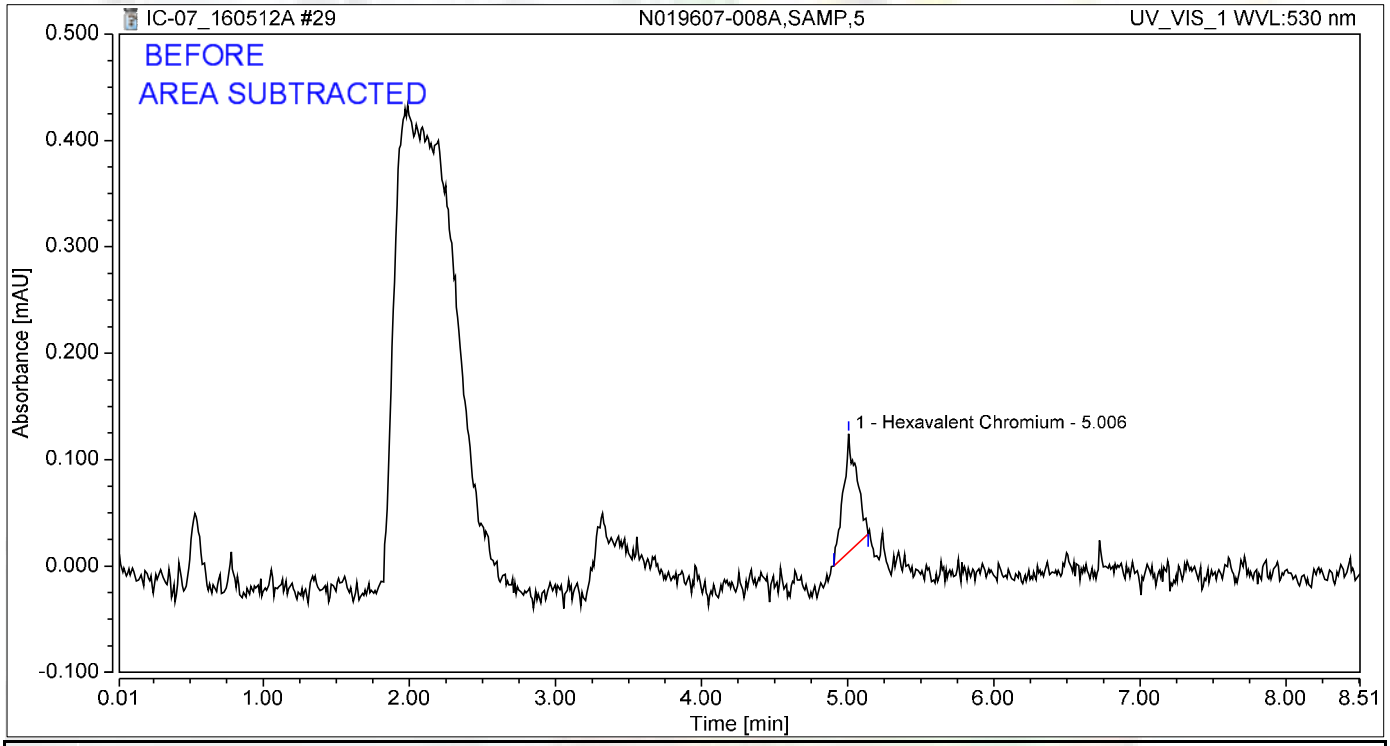
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.012	0.111	100.00	100.00	0.0502
Total:			**0.012**	**0.111**	**100.00**	**100.00**	

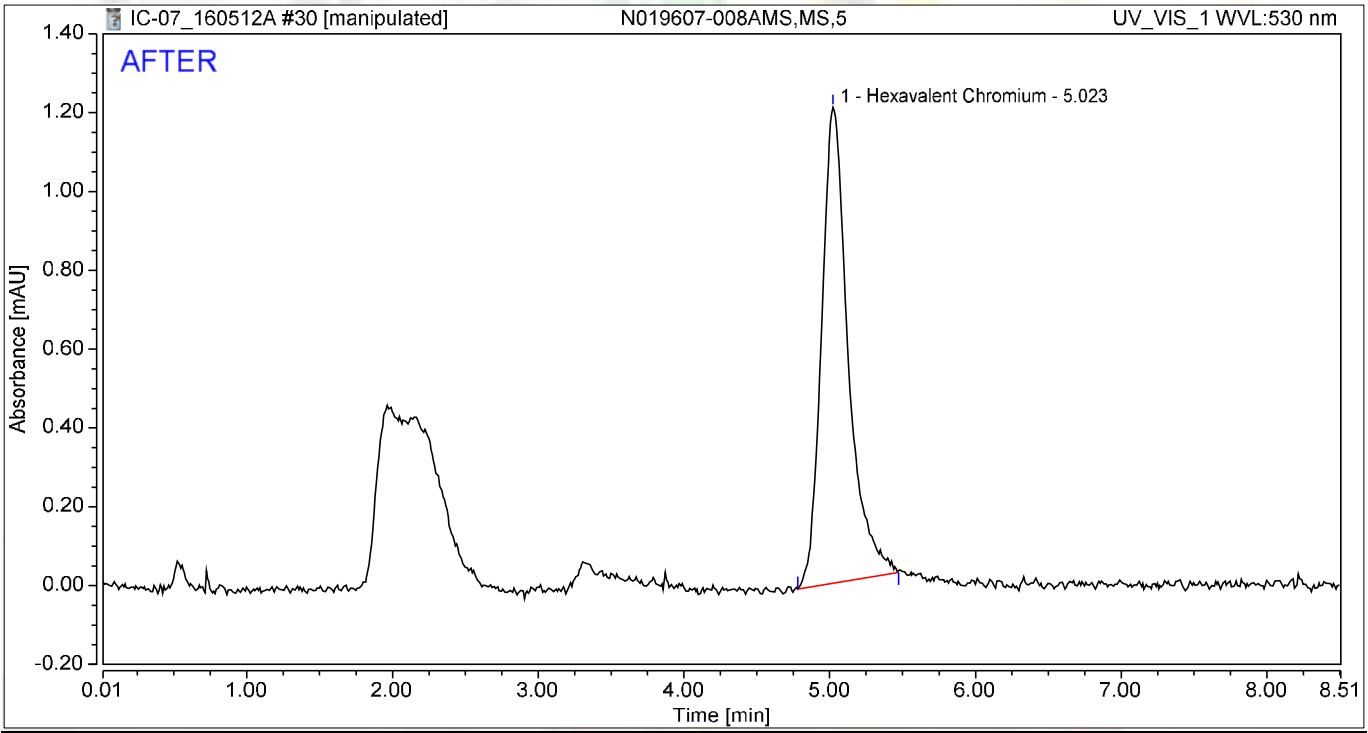
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.256	1.207	100.00	100.00	1.0883
Total:			**0.256**	**1.207**	**100.00**	**100.00**	

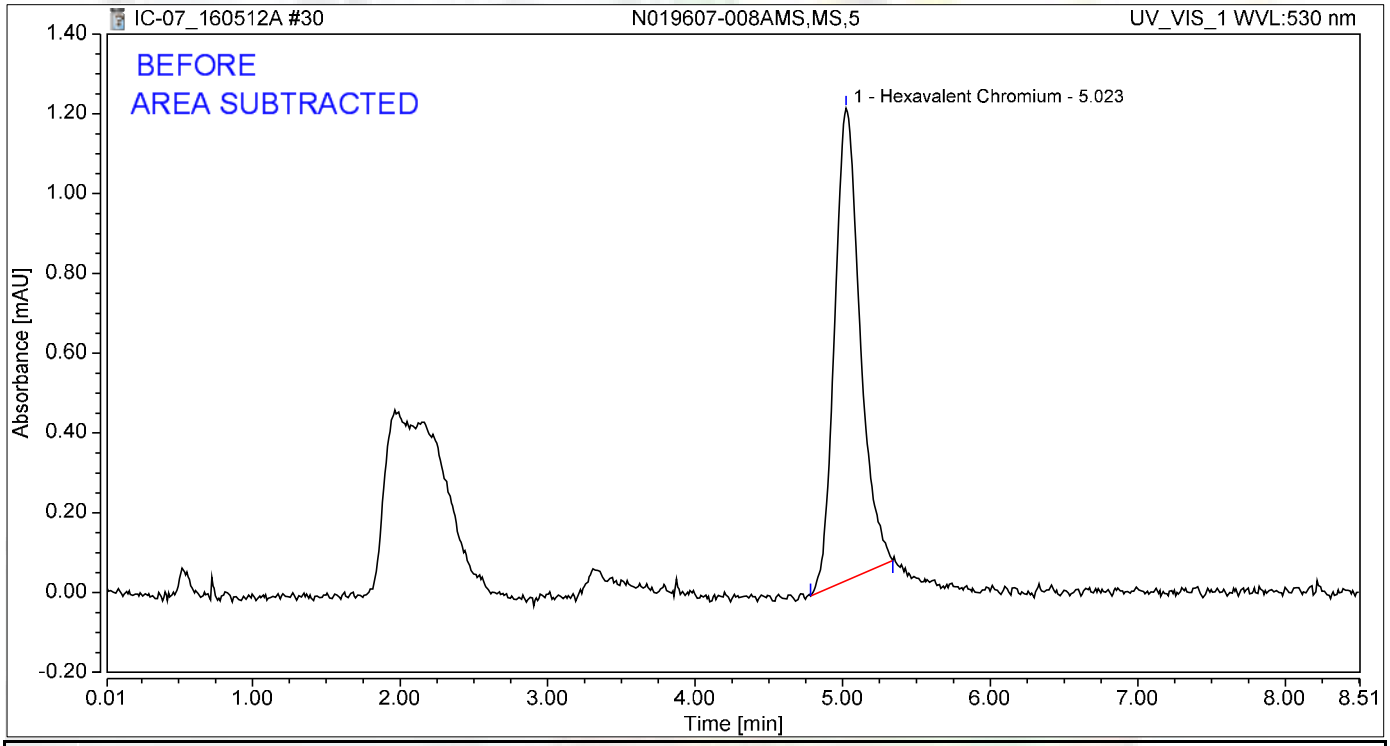
JAS 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-008AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	0.237	1.183	100.00	100.00	1.0051
Total:			**0.237**	**1.183**	**100.00**	**100.00**	

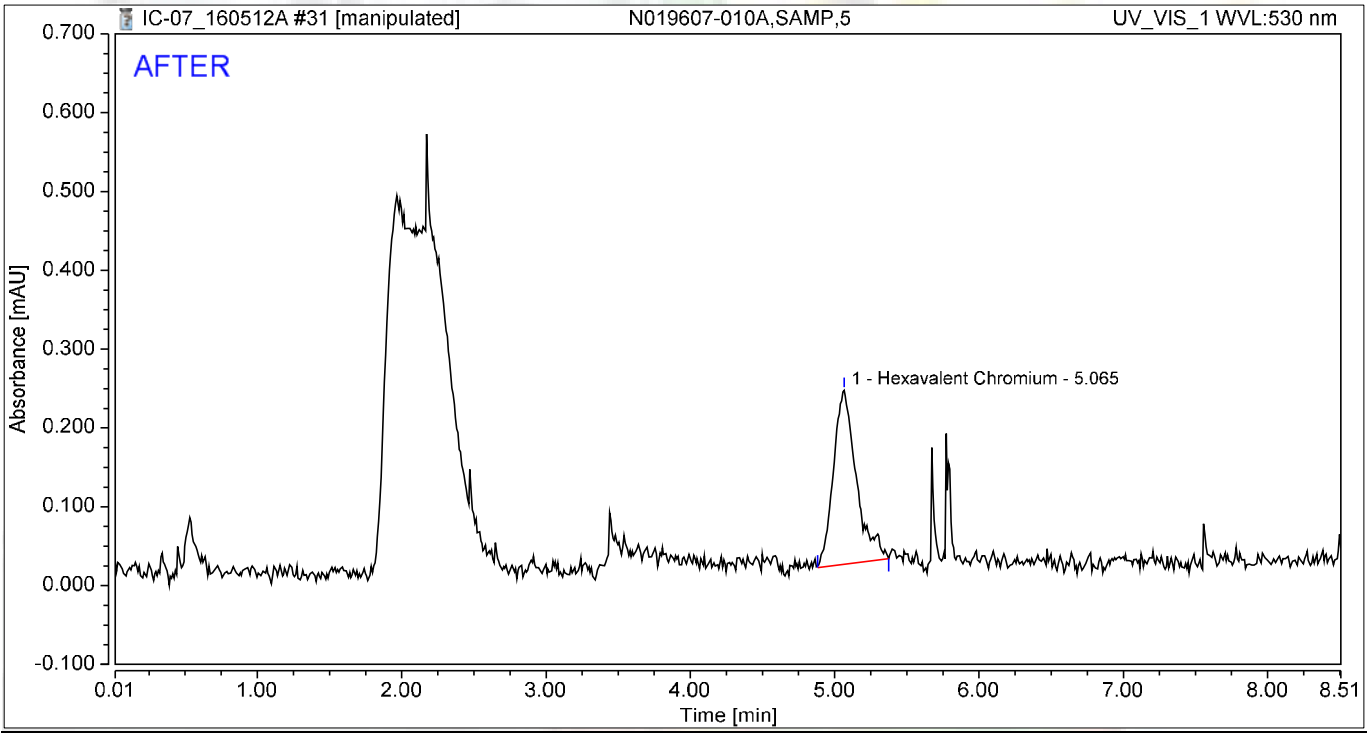
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.041	0.221	100.00	100.00	0.1733
Total:			**0.041**	**0.221**	**100.00**	**100.00**	

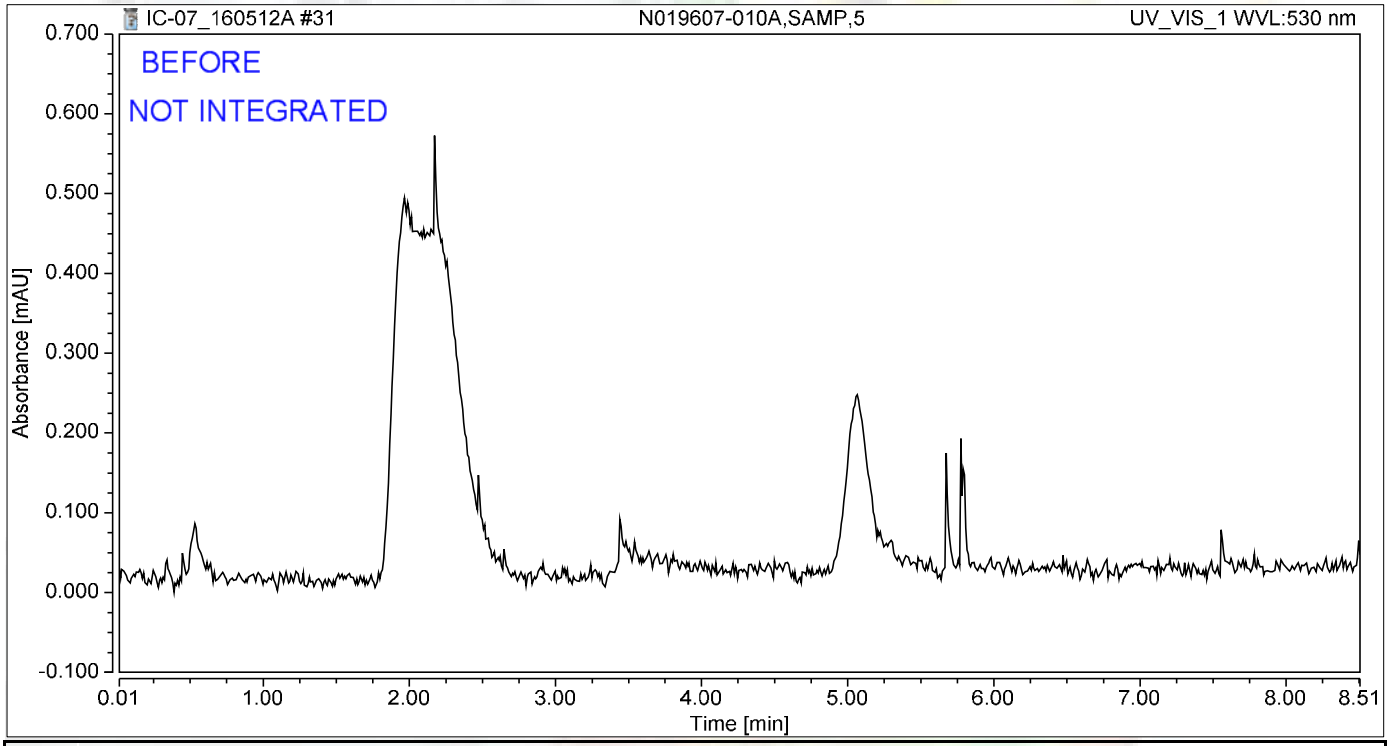
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

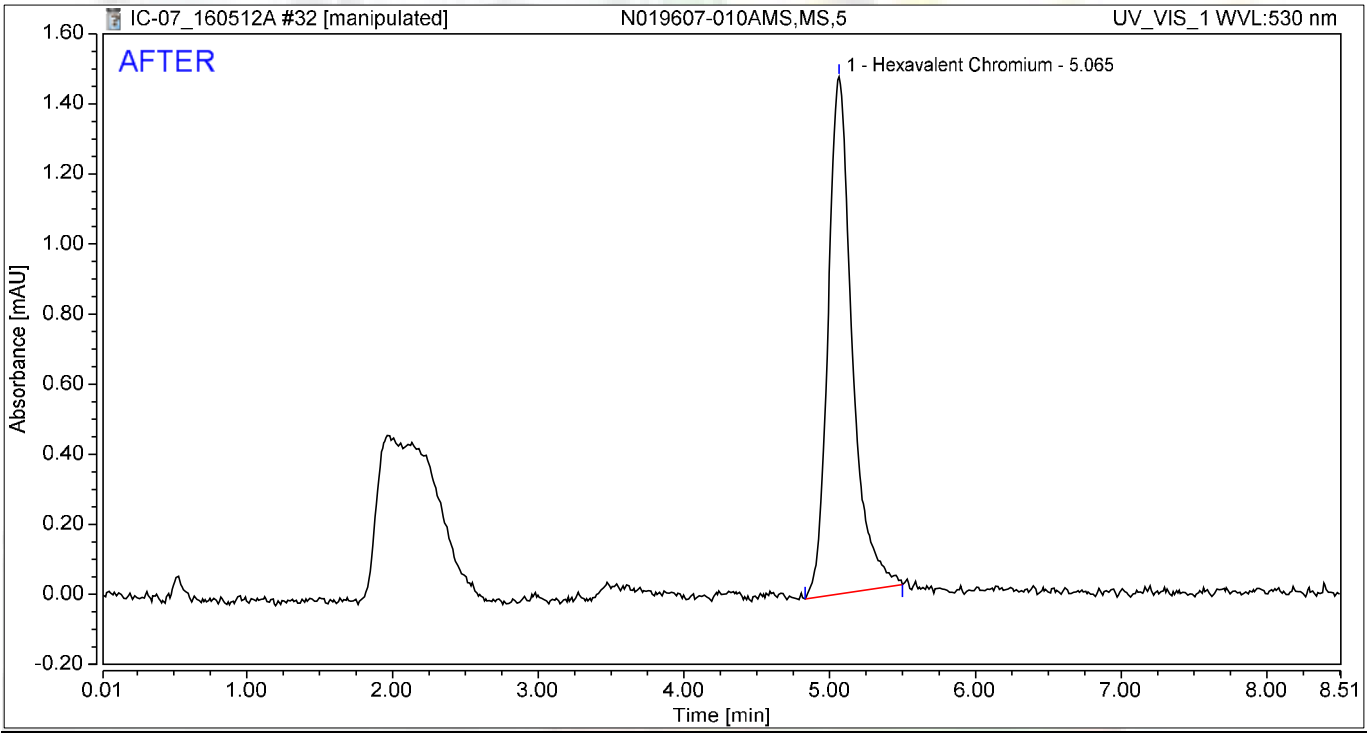
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.284	1.476	100.00	100.00	1.2050
Total:			**0.284**	**1.476**	**100.00**	**100.00**	

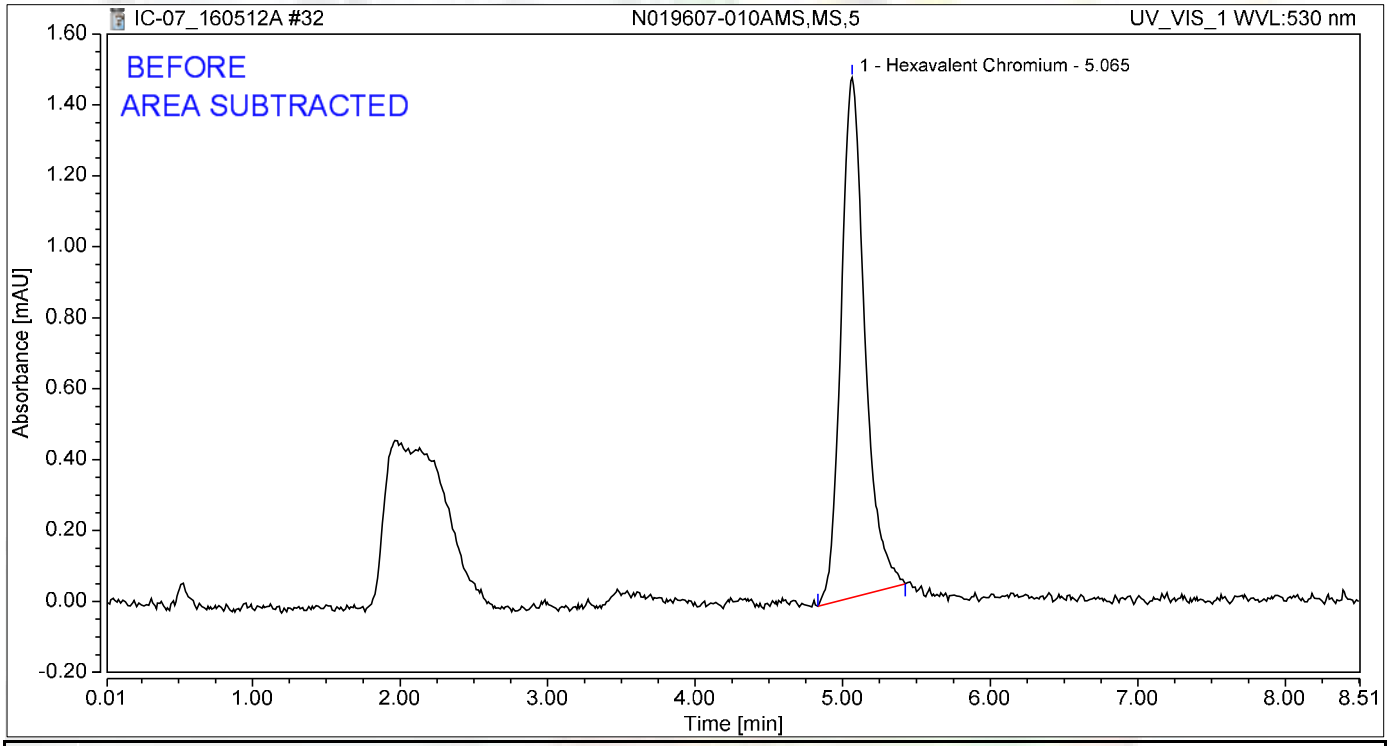
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019607-010AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.274	1.466	100.00	100.00	1.1650
Total:			**0.274**	**1.466**	**100.00**	**100.00**	

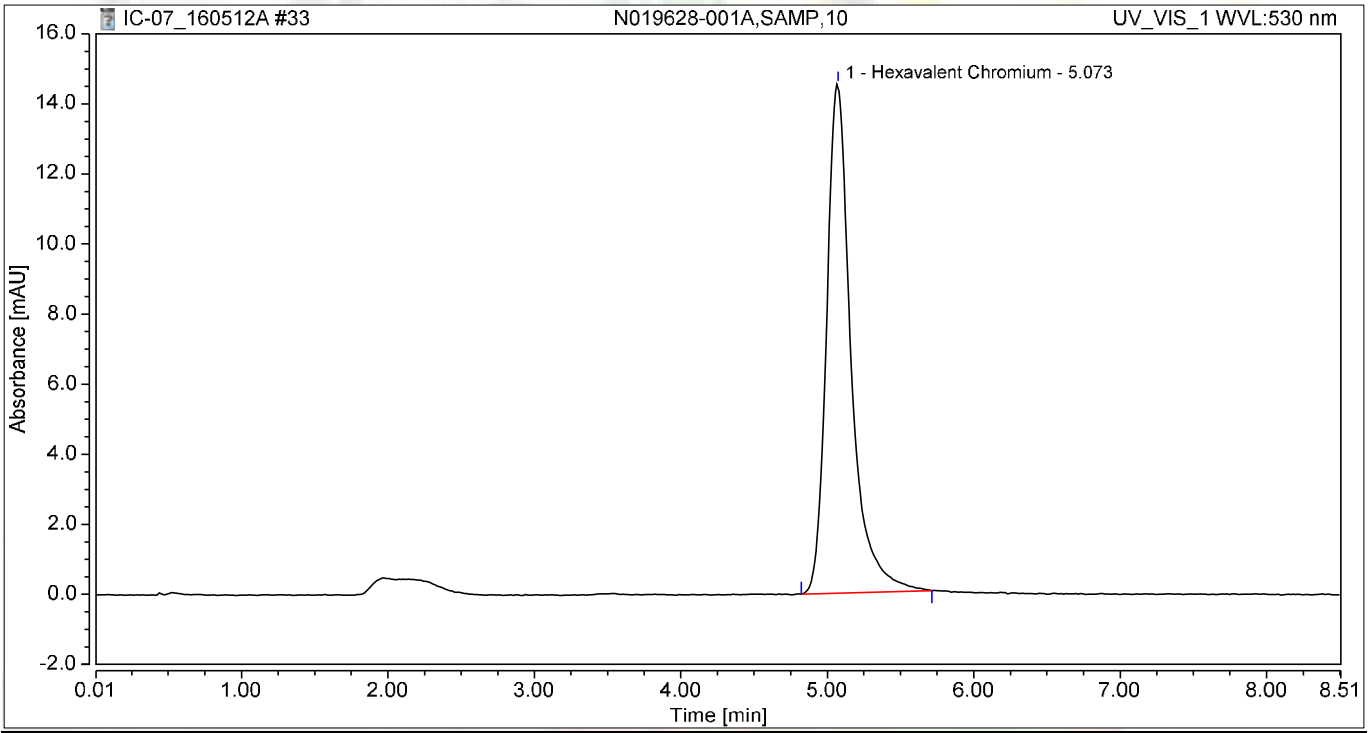
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-001A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

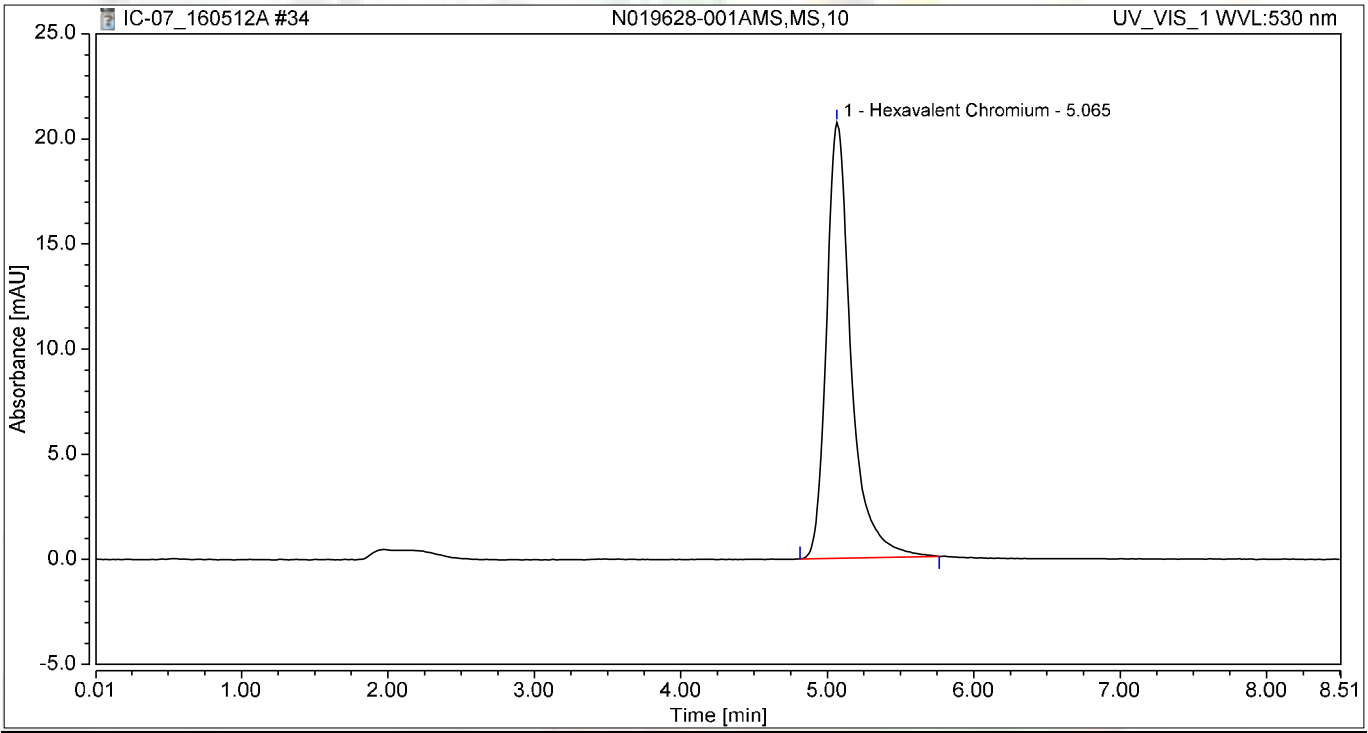
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	2.817	14.530	100.00	100.00	11.9650
Total:			**2.817**	**14.530**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-001AMS,MS,10**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

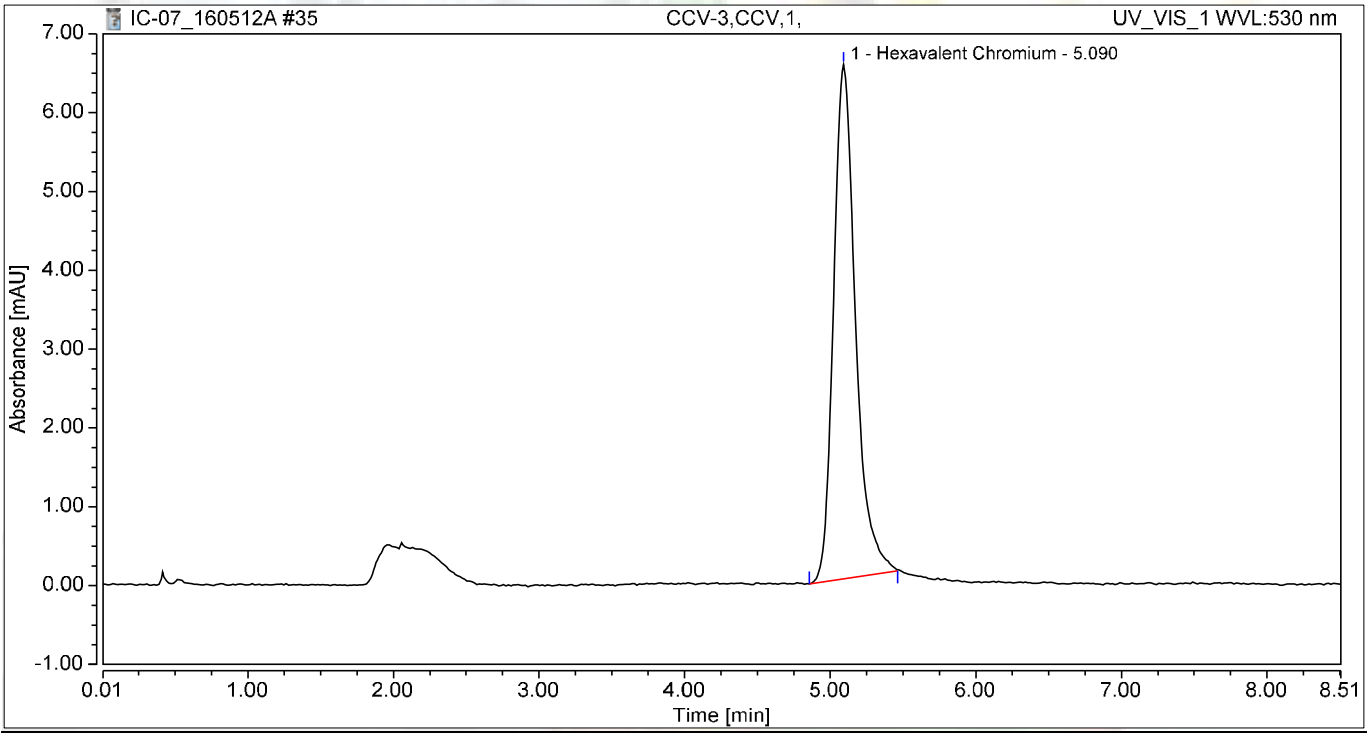
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	4.031	20.748	100.00	100.00	17.1216
Total:			**4.031**	**20.748**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

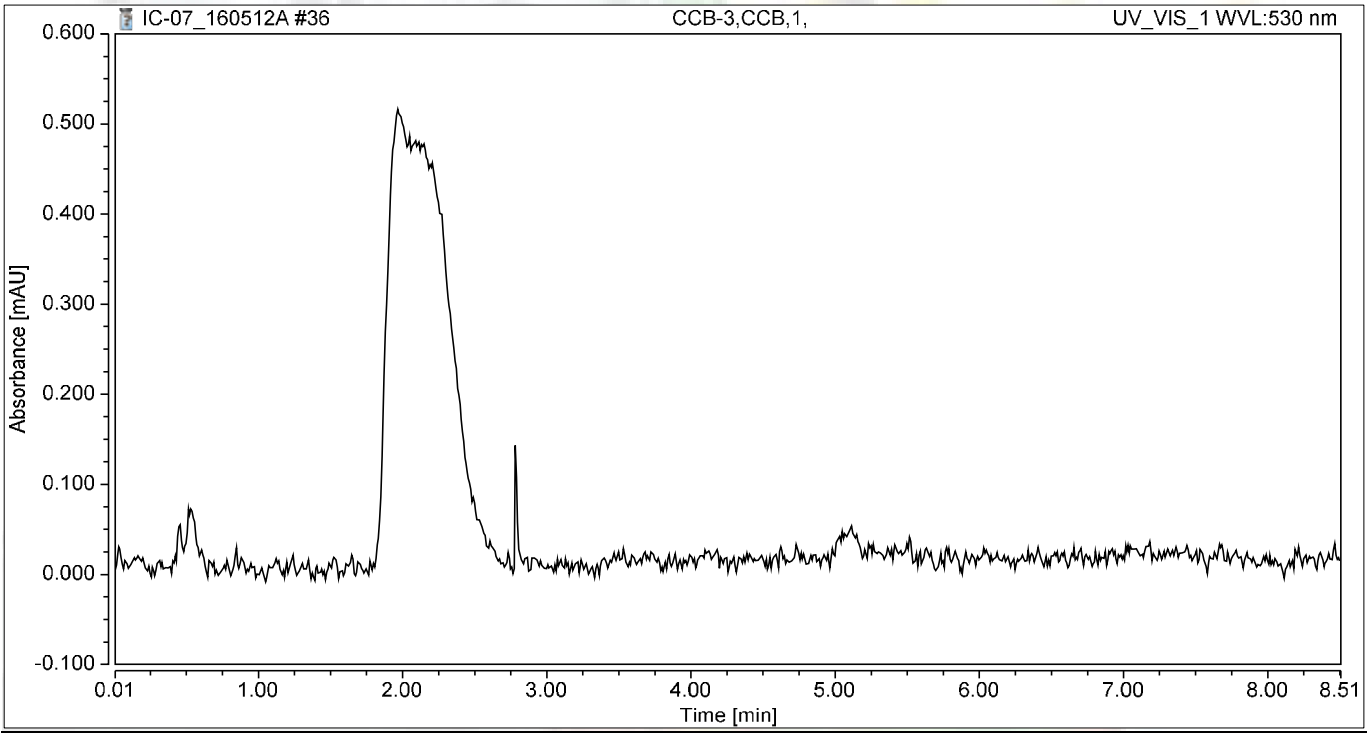
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.141	6.522	100.00	100.00	4.8457
Total:			**1.141**	**6.522**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

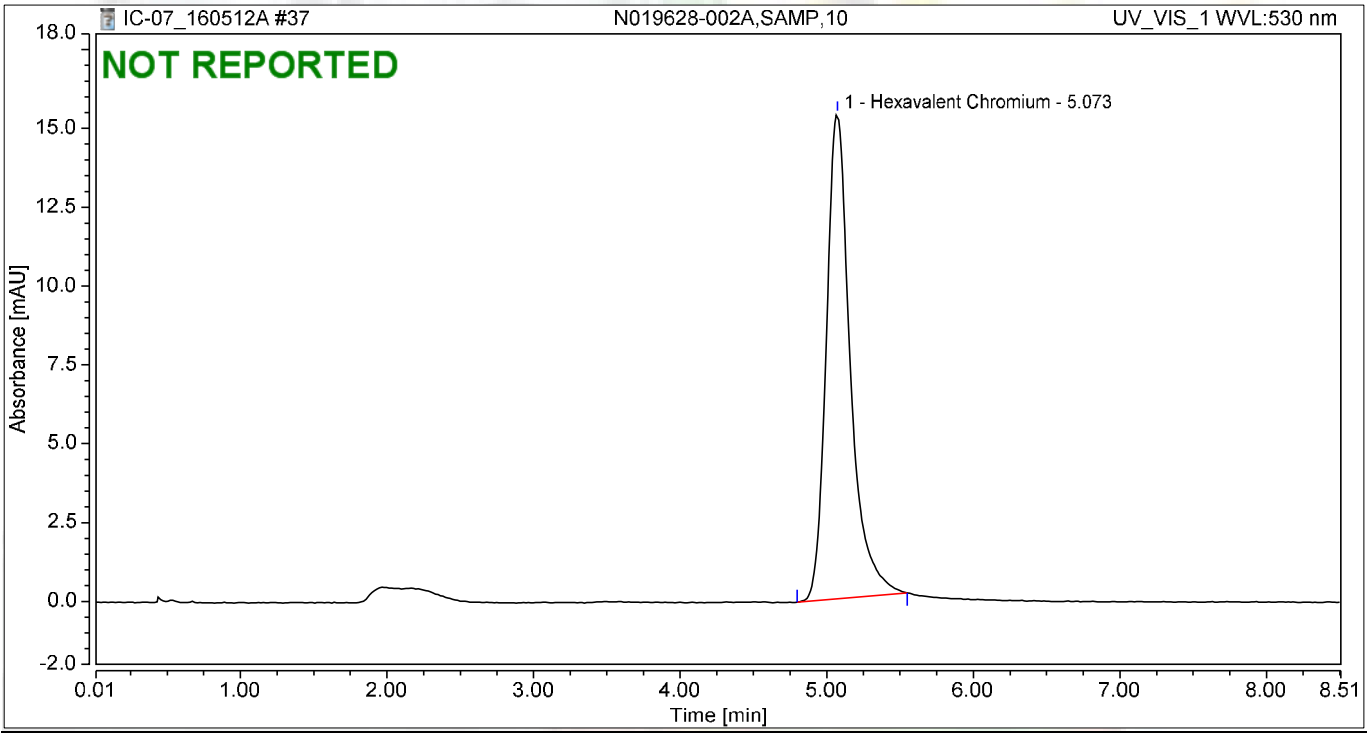
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-002A,SAMP,10**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

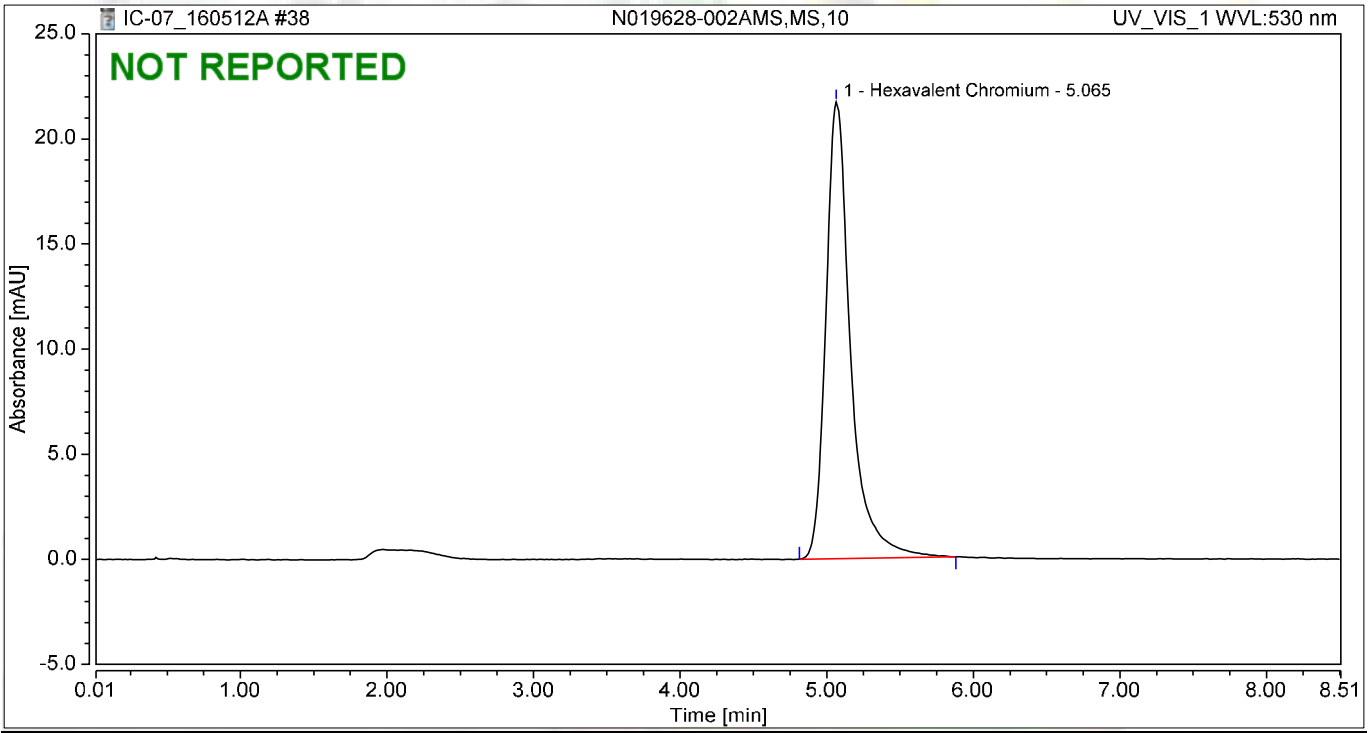
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	2.922	15.381	100.00	100.00	12.4106
Total:			**2.922**	**15.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-002AMS,MS,10**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

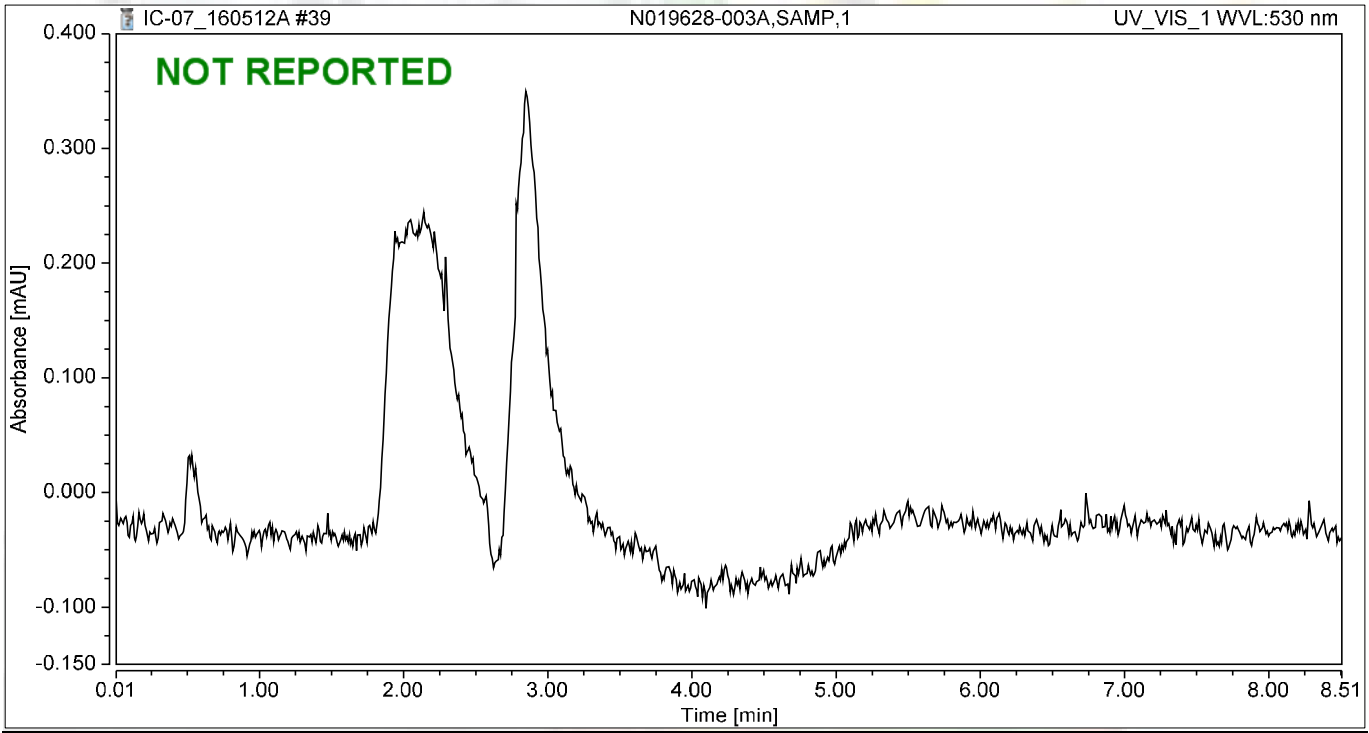
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	4.249	21.730	100.00	100.00	18.0467
Total:			**4.249**	**21.730**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

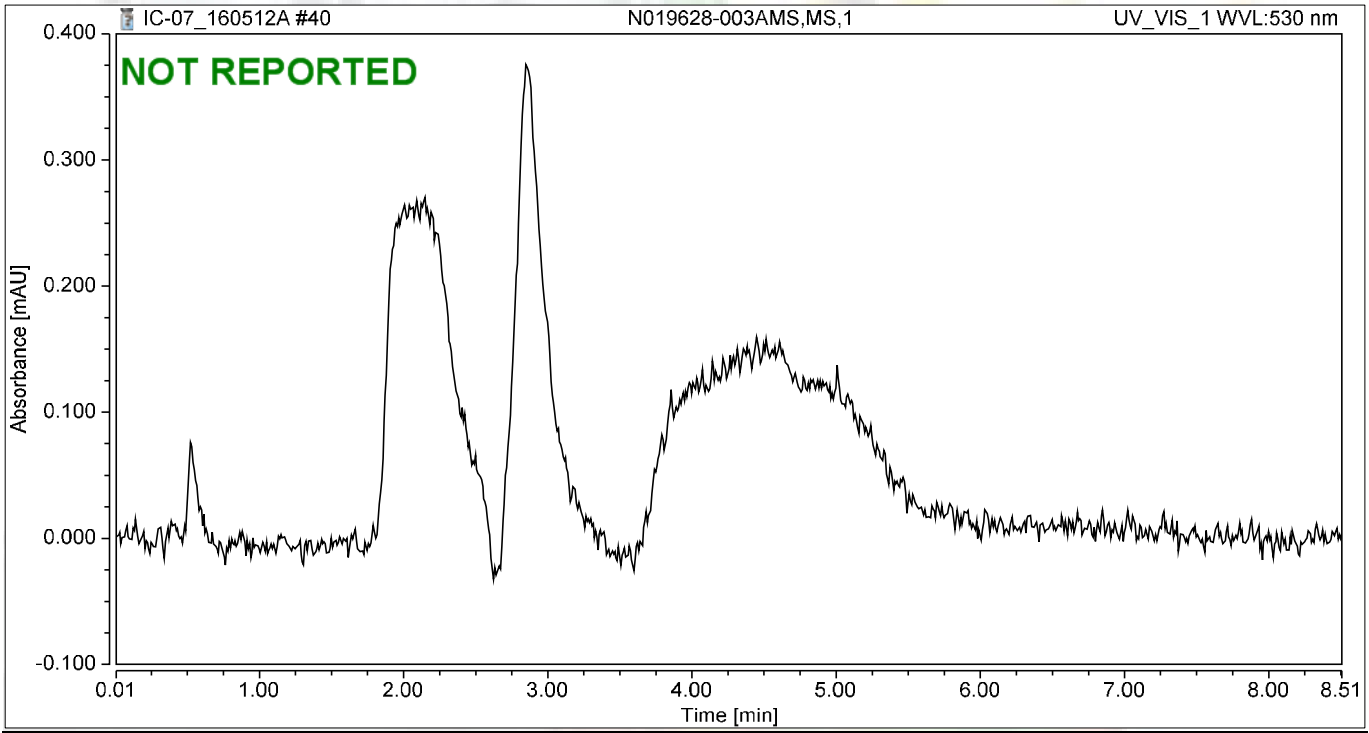
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

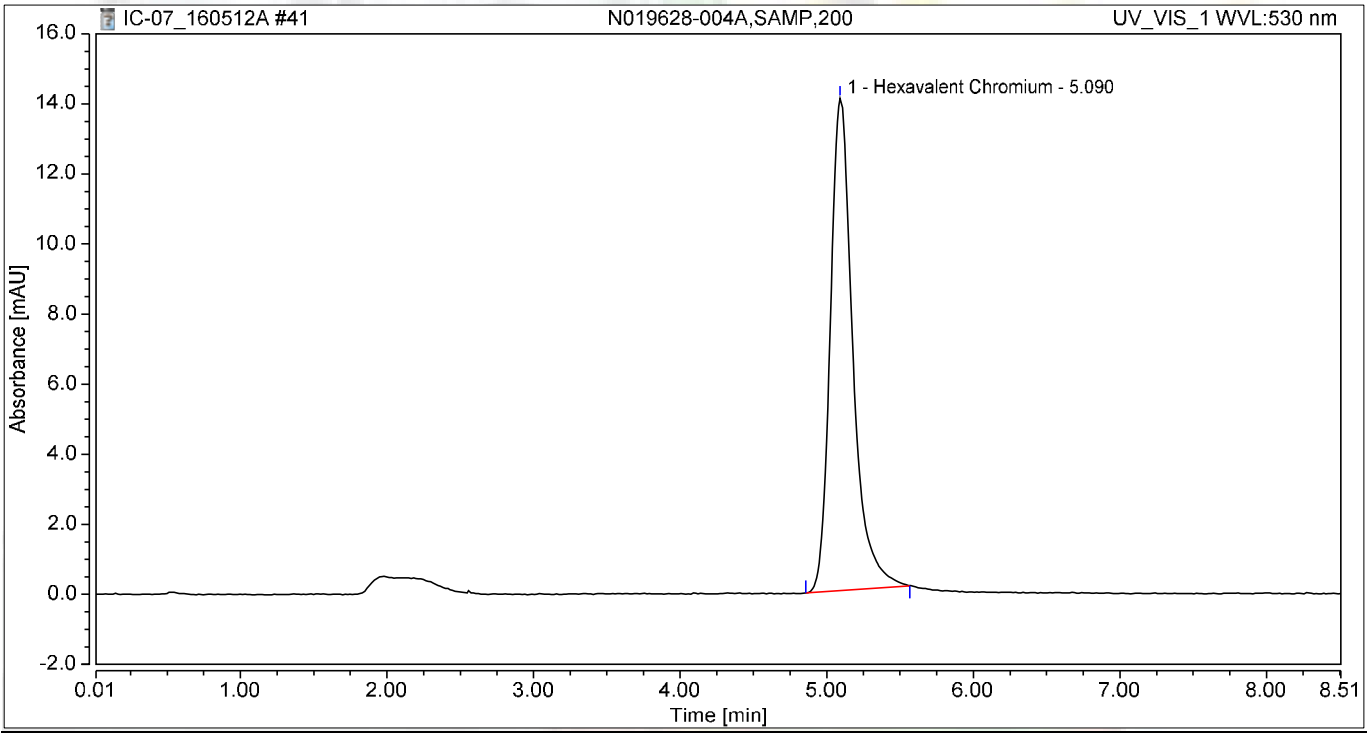
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-004A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

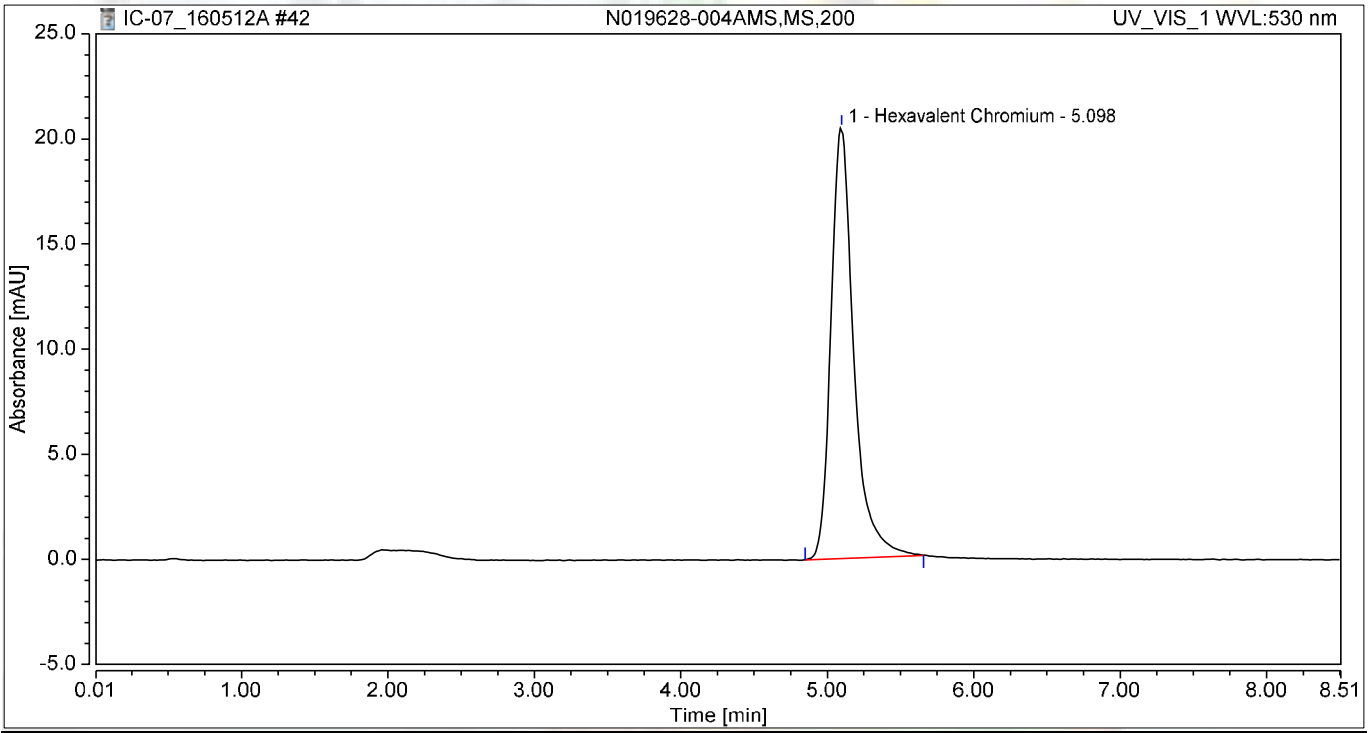
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.508	14.046	100.00	100.00	10.6519
Total:			**2.508**	**14.046**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-004AMS,MS,200**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

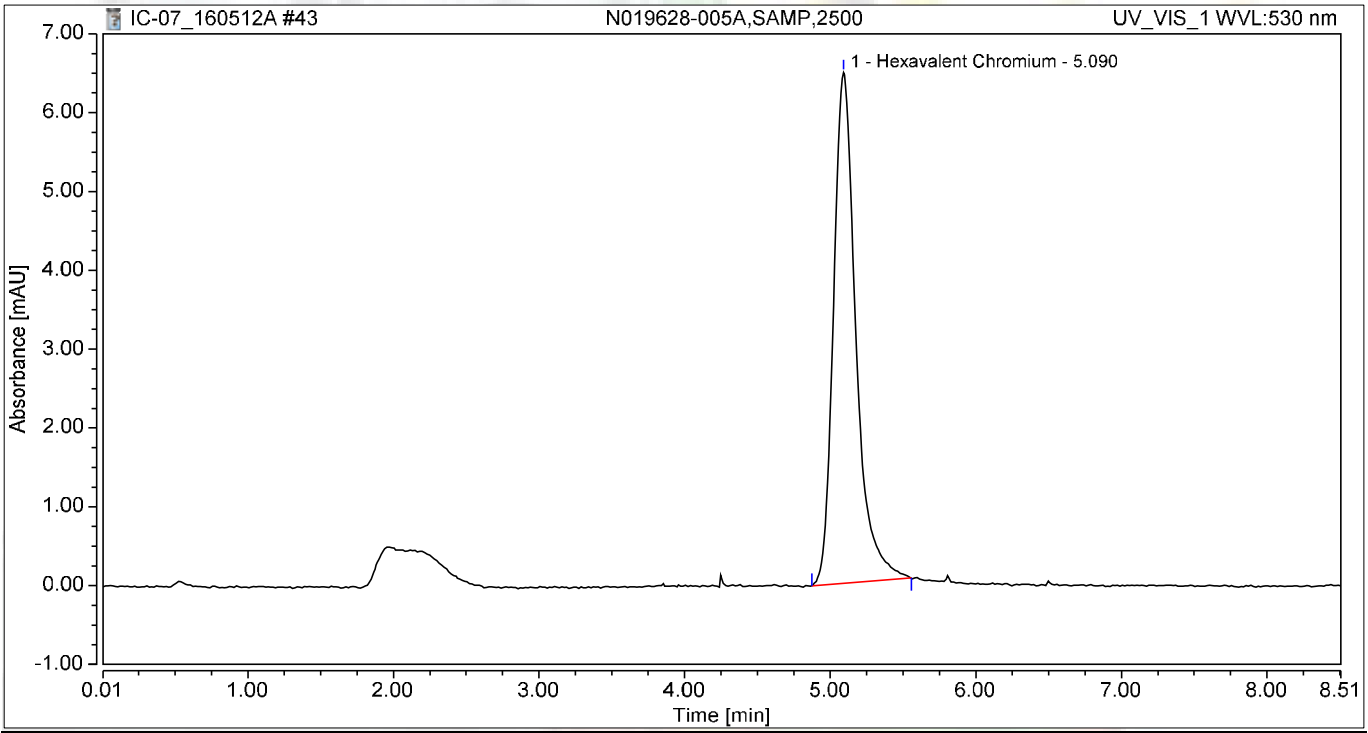
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	3.710	20.502	100.00	100.00	15.7575
Total:			**3.710**	**20.502**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-005A,SAMP,2500**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

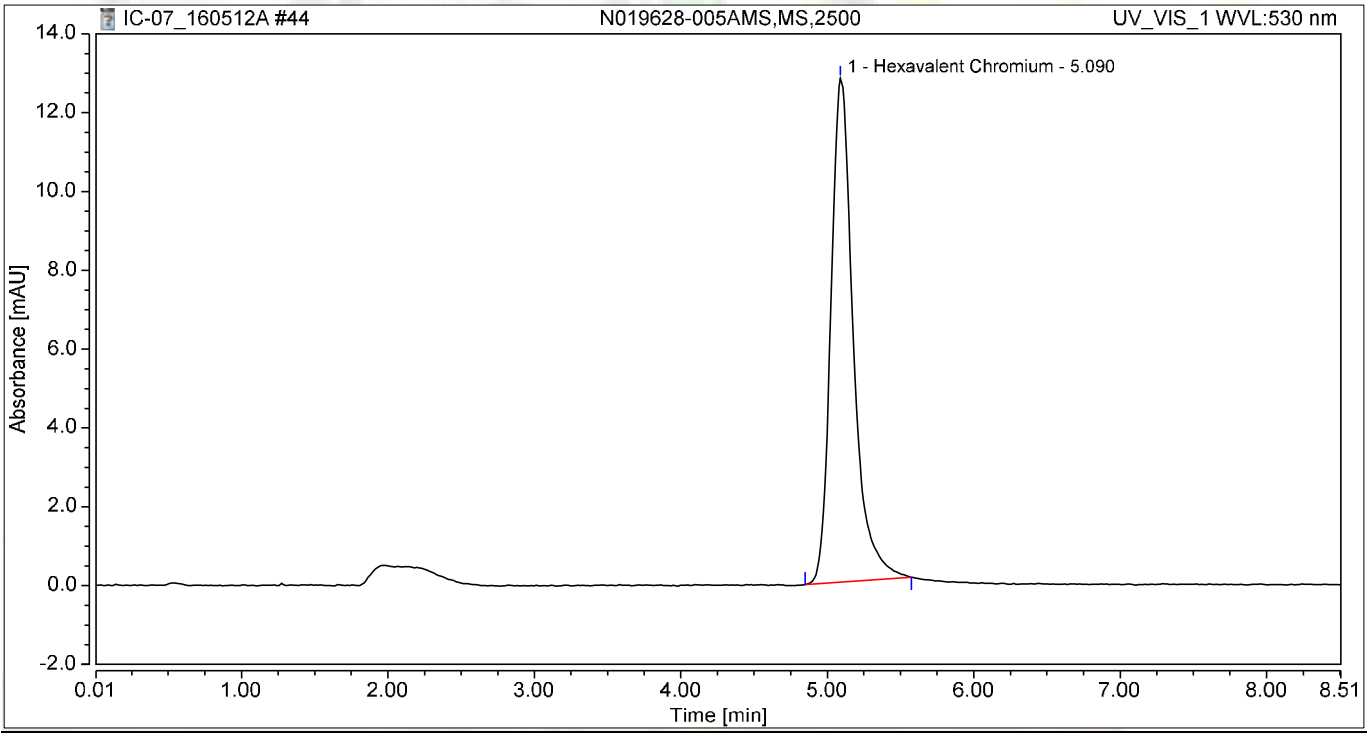
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.156	6.480	100.00	100.00	4.9105
Total:			**1.156**	**6.480**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-005AMS,MS,2500**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

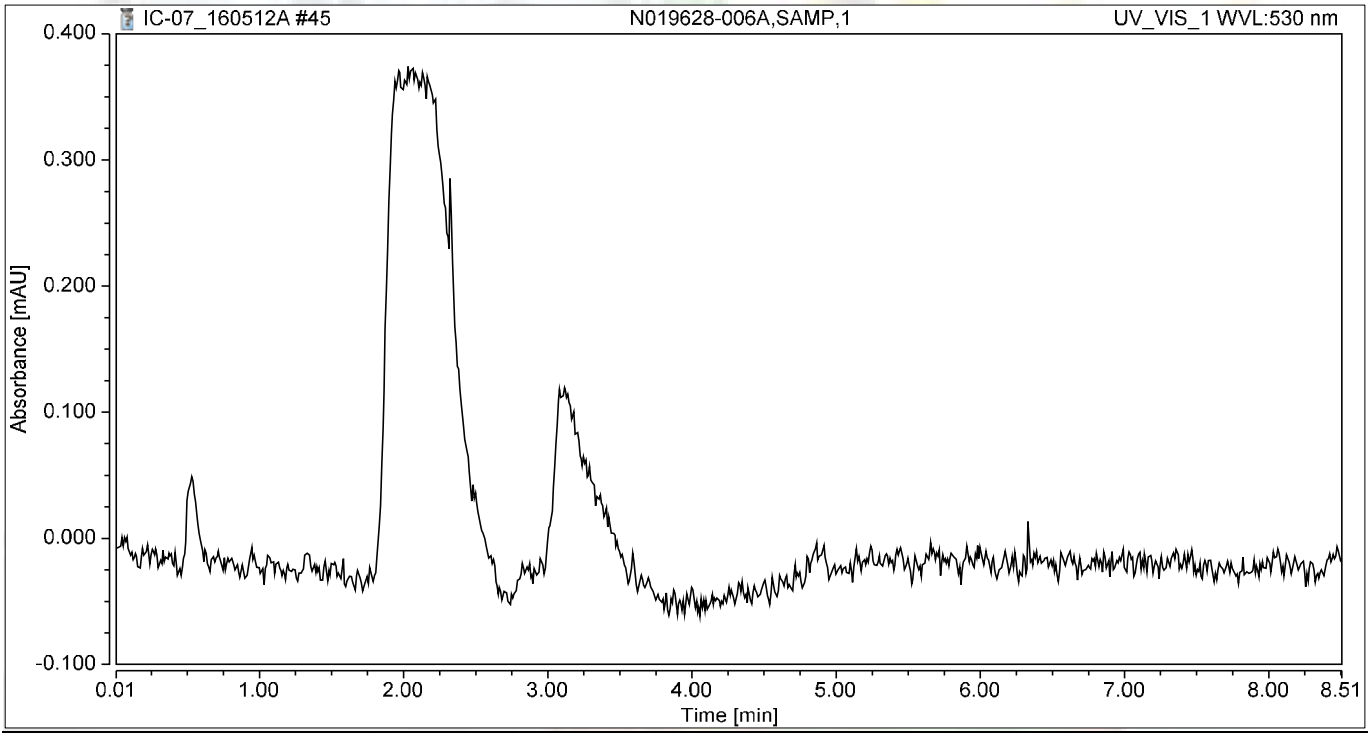
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.271	12.781	100.00	100.00	9.6444
Total:			**2.271**	**12.781**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

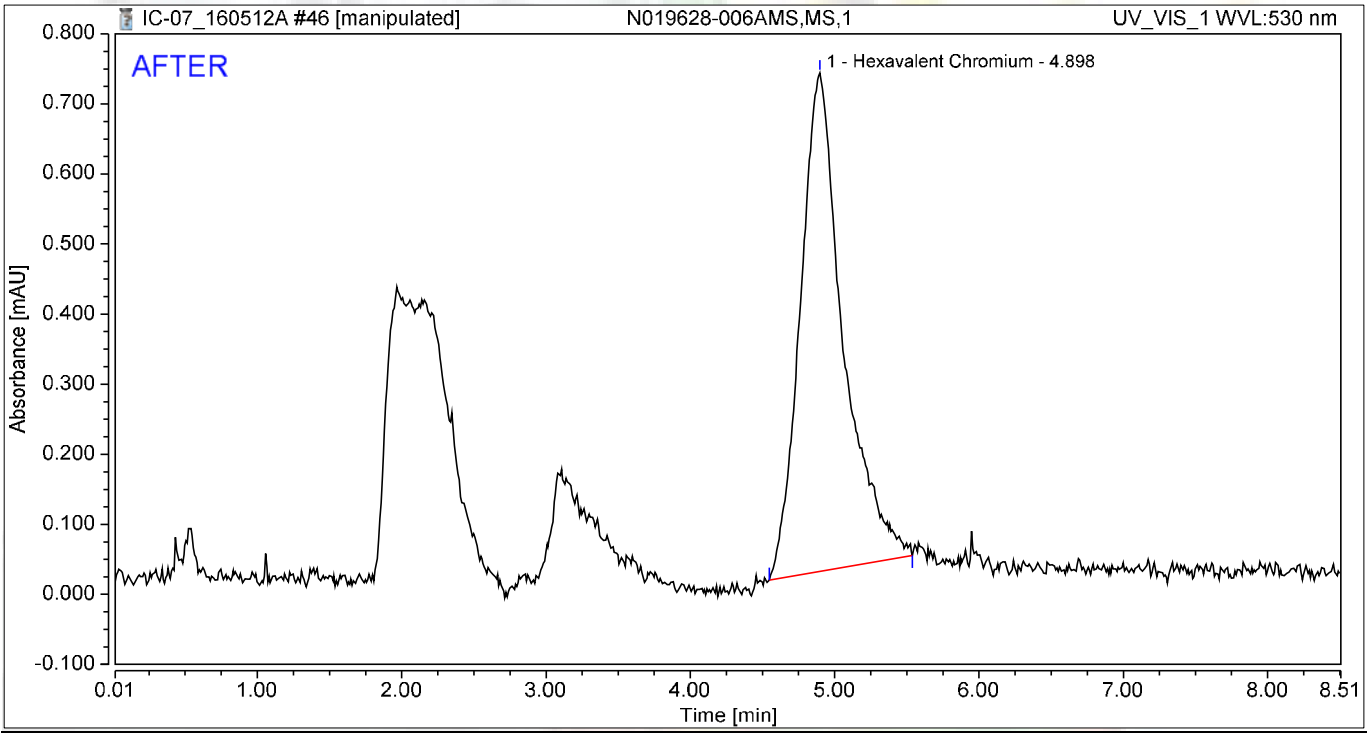
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.898	0.244	0.711	100.00	100.00	1.0379
Total:			**0.244**	**0.711**	**100.00**	**100.00**	

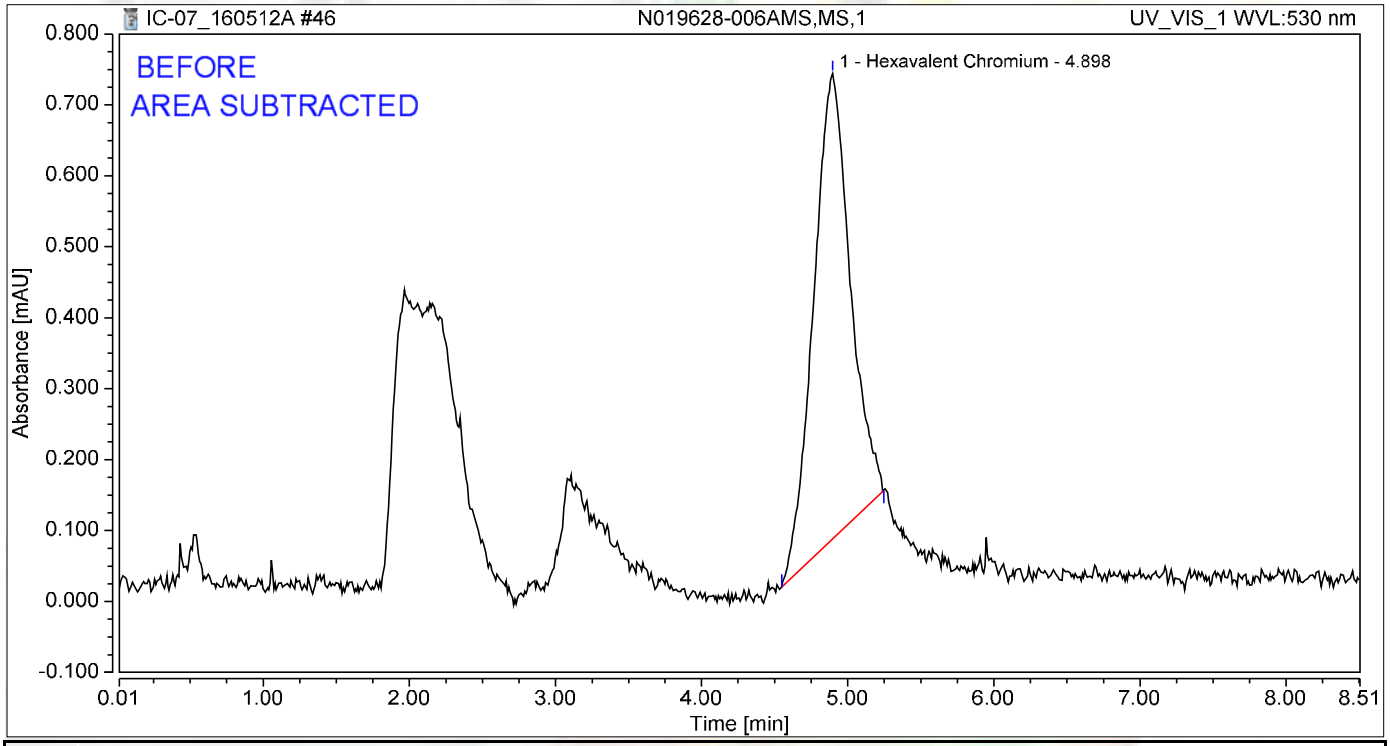
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.898	0.192	0.656	100.00	100.00	0.8143
Total:			**0.192**	**0.656**	**100.00**	**100.00**	

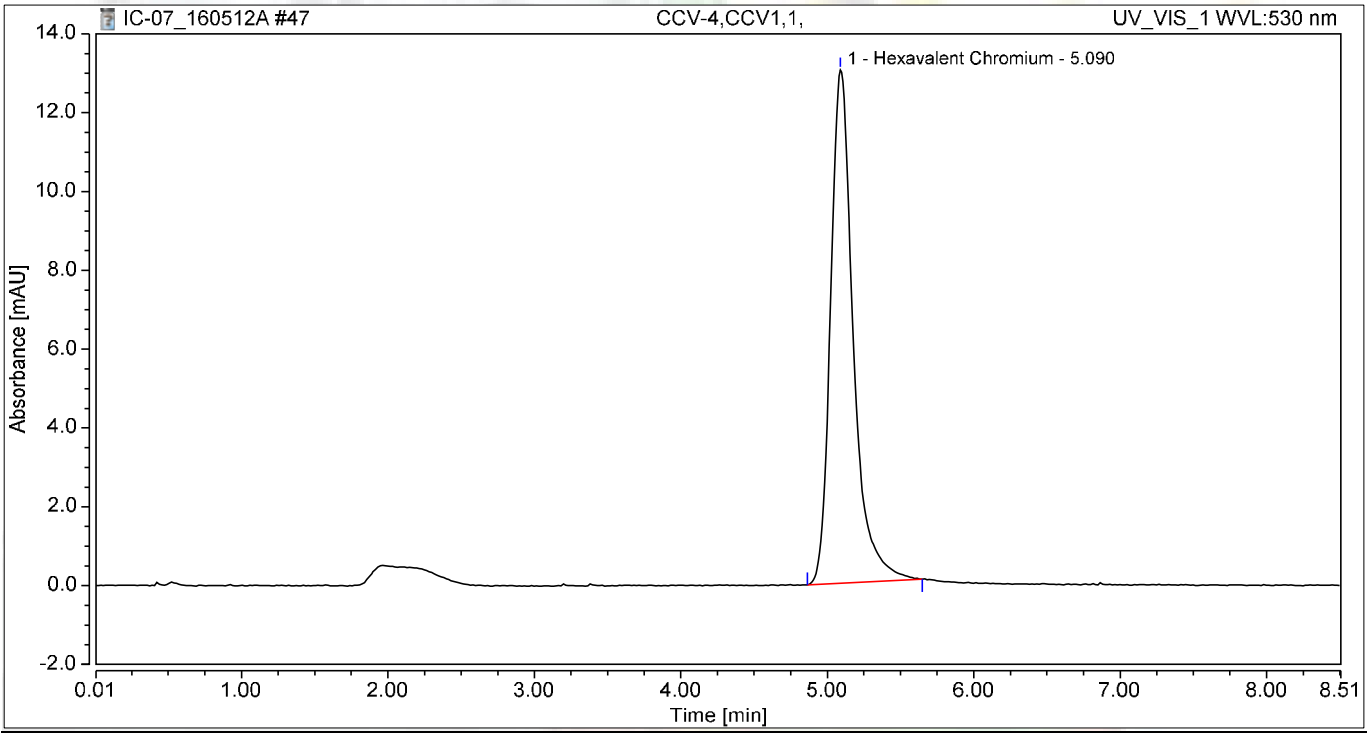
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

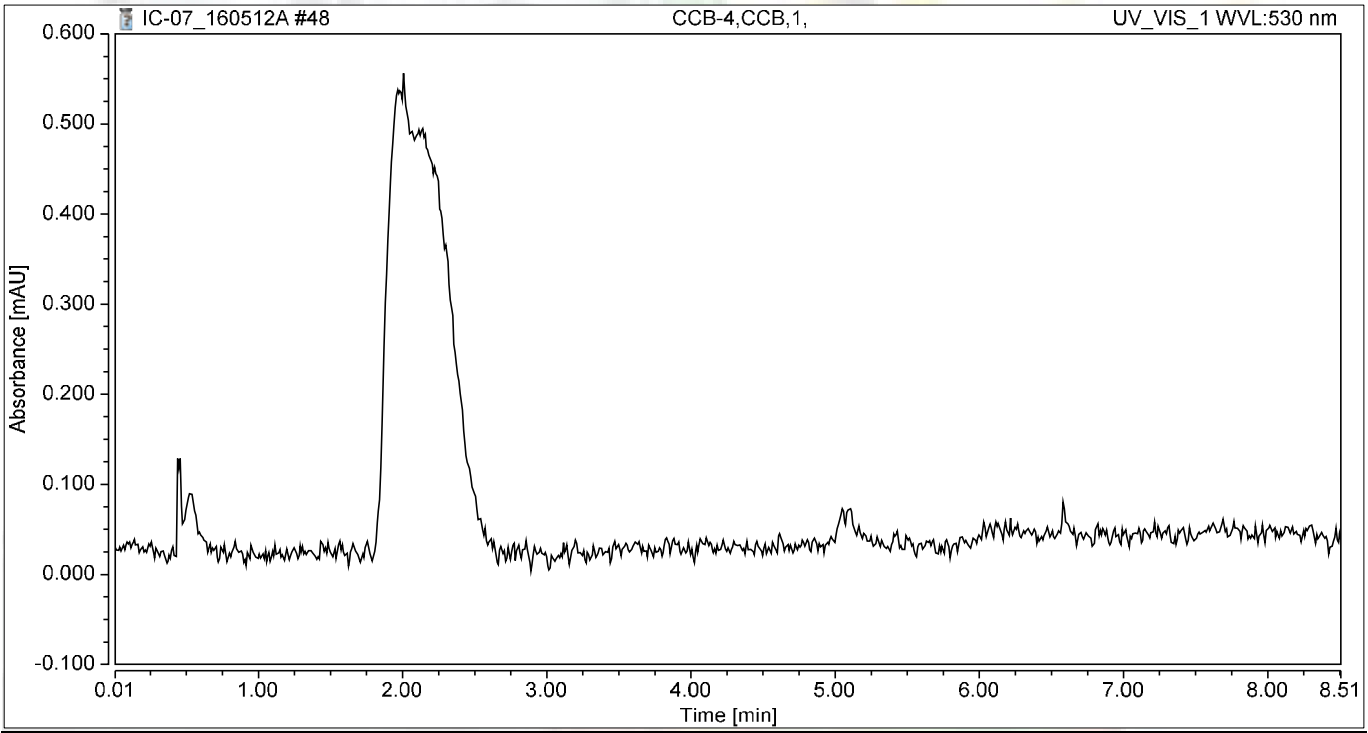
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.338	13.023	100.00	100.00	9.9287
Total:			**2.338**	**13.023**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

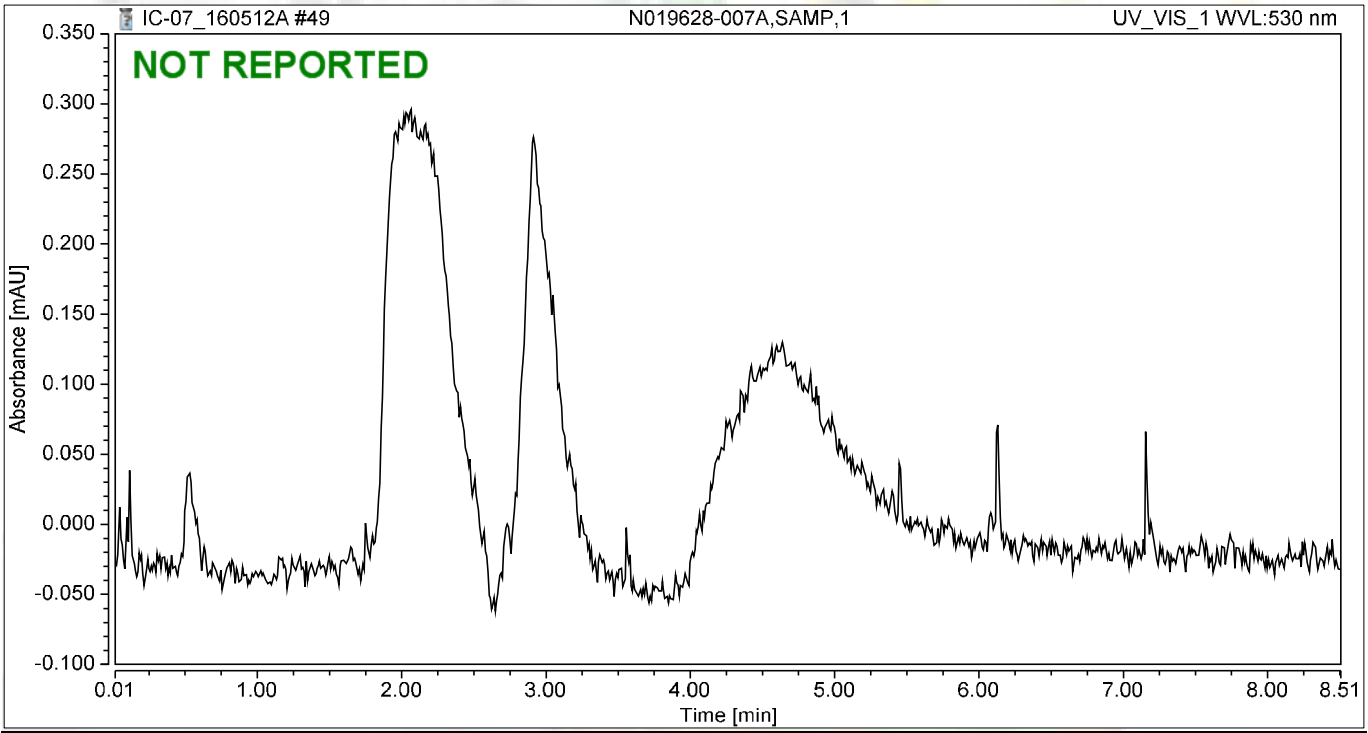
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

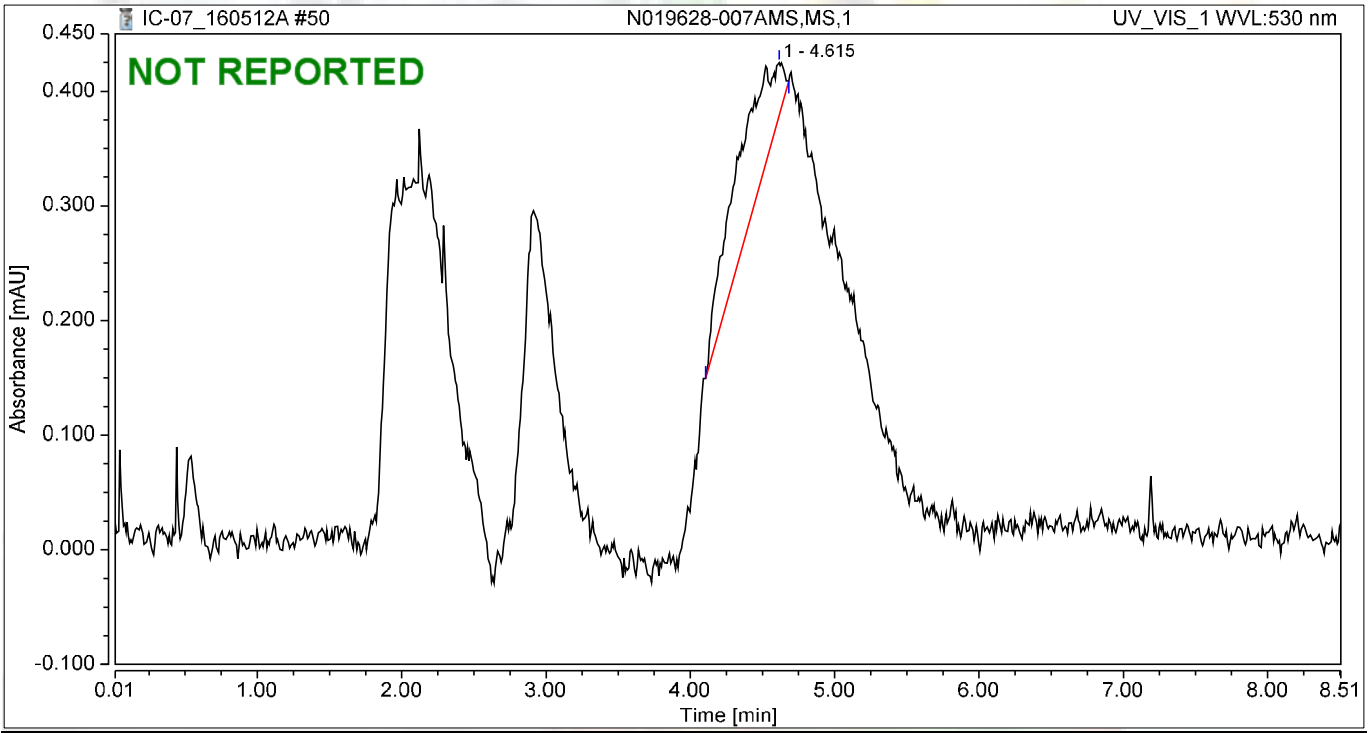
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

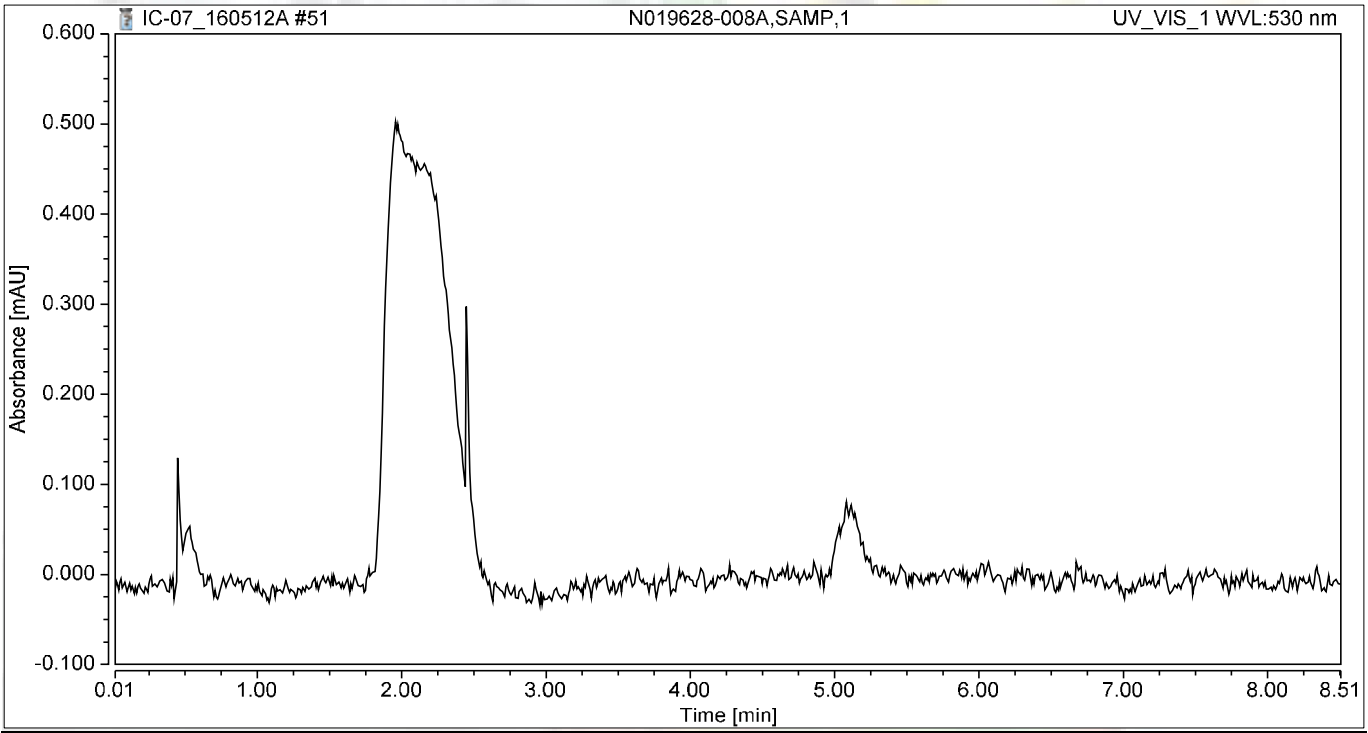
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.615	0.035	0.046	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.035**	**0.046**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

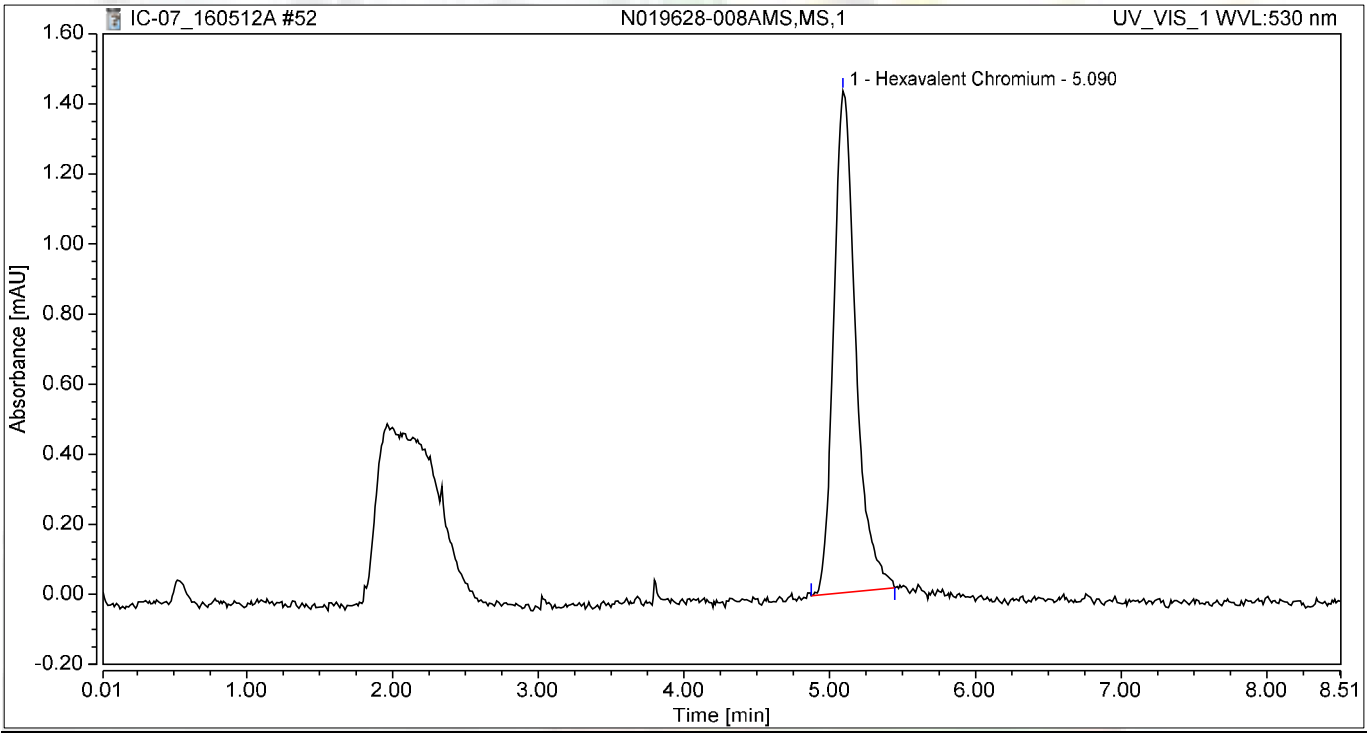
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-008AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

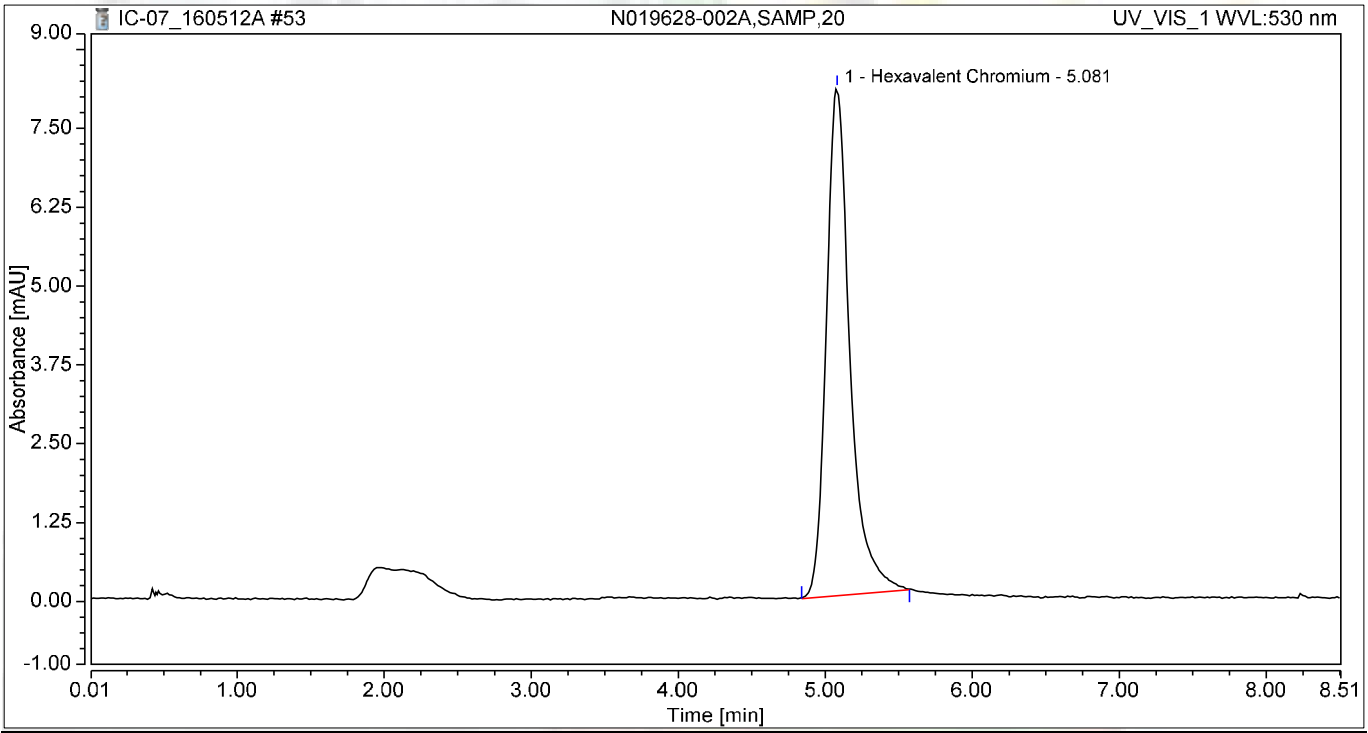
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.251	1.433	100.00	100.00	1.0660
Total:			**0.251**	**1.433**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-002A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

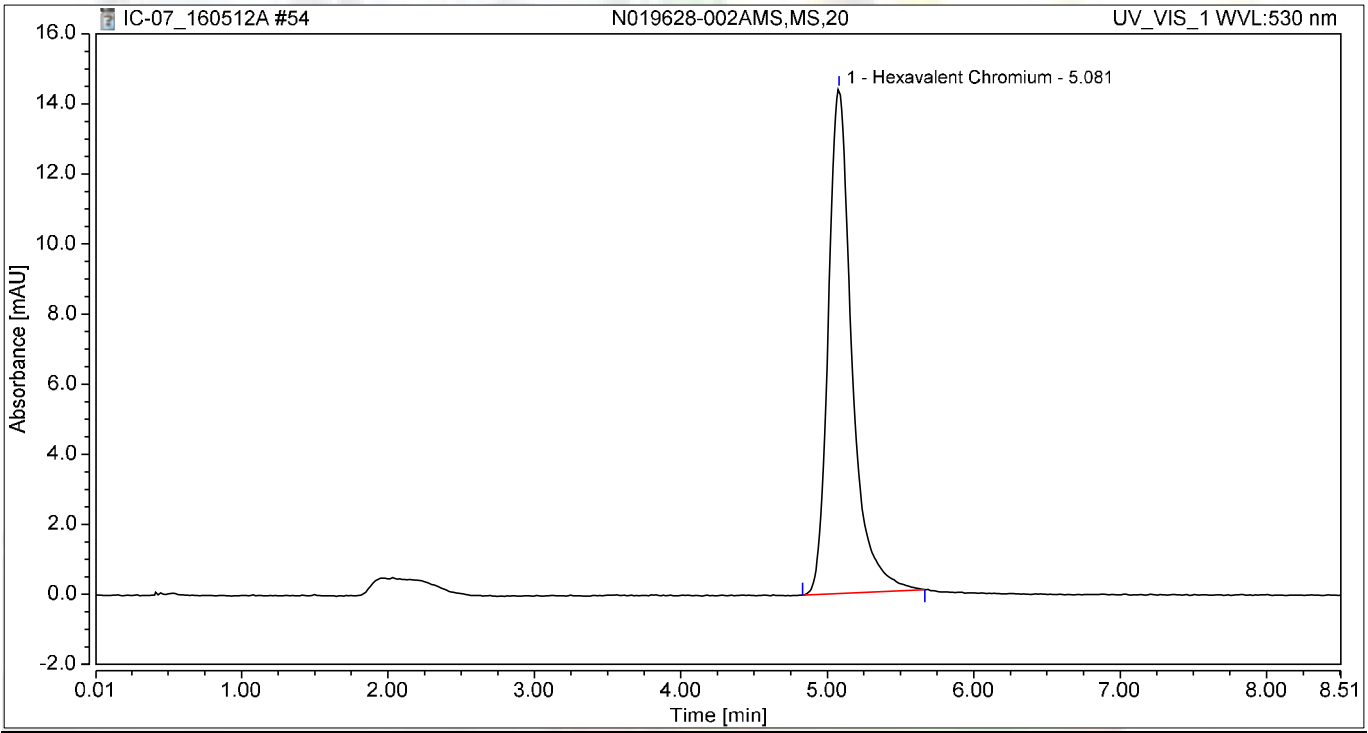
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	1.500	8.048	100.00	100.00	6.3713
Total:			**1.500**	**8.048**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-002AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

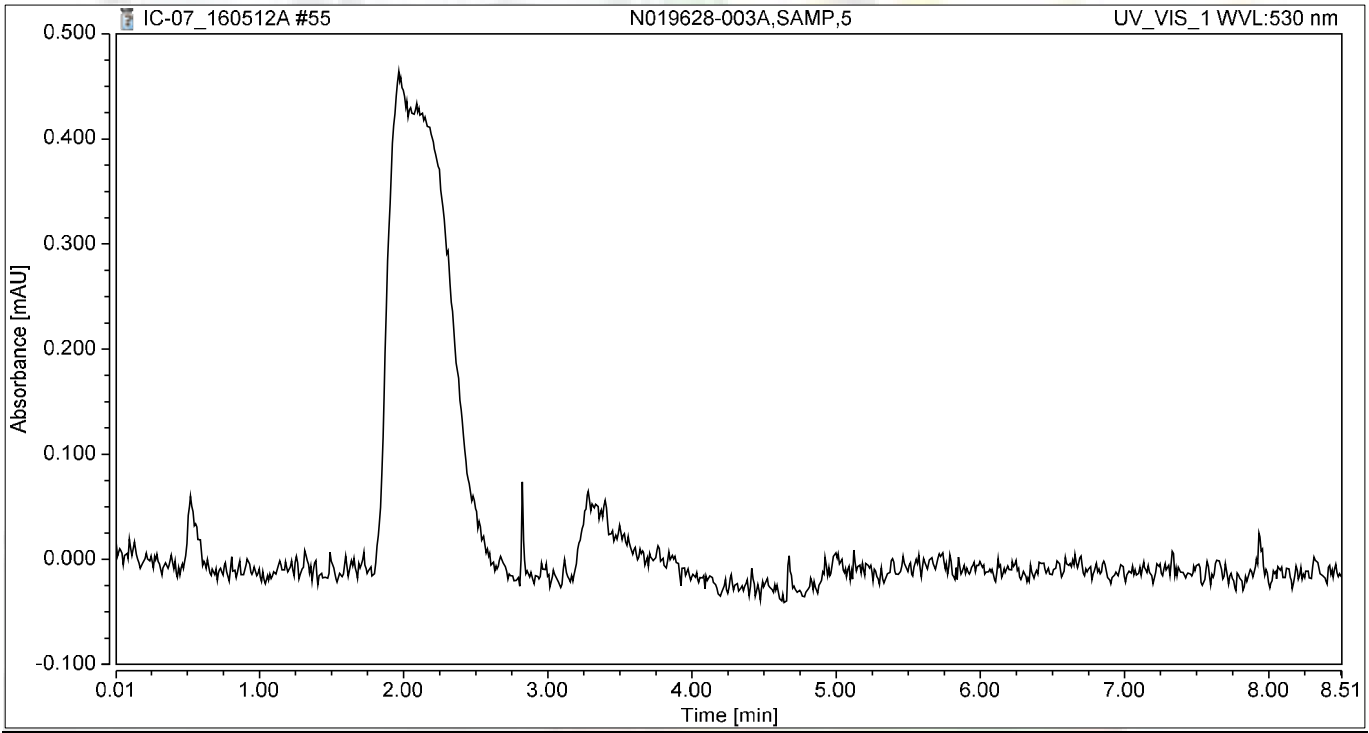
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	2.700	14.410	100.00	100.00	11.4662
Total:			**2.700**	**14.410**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

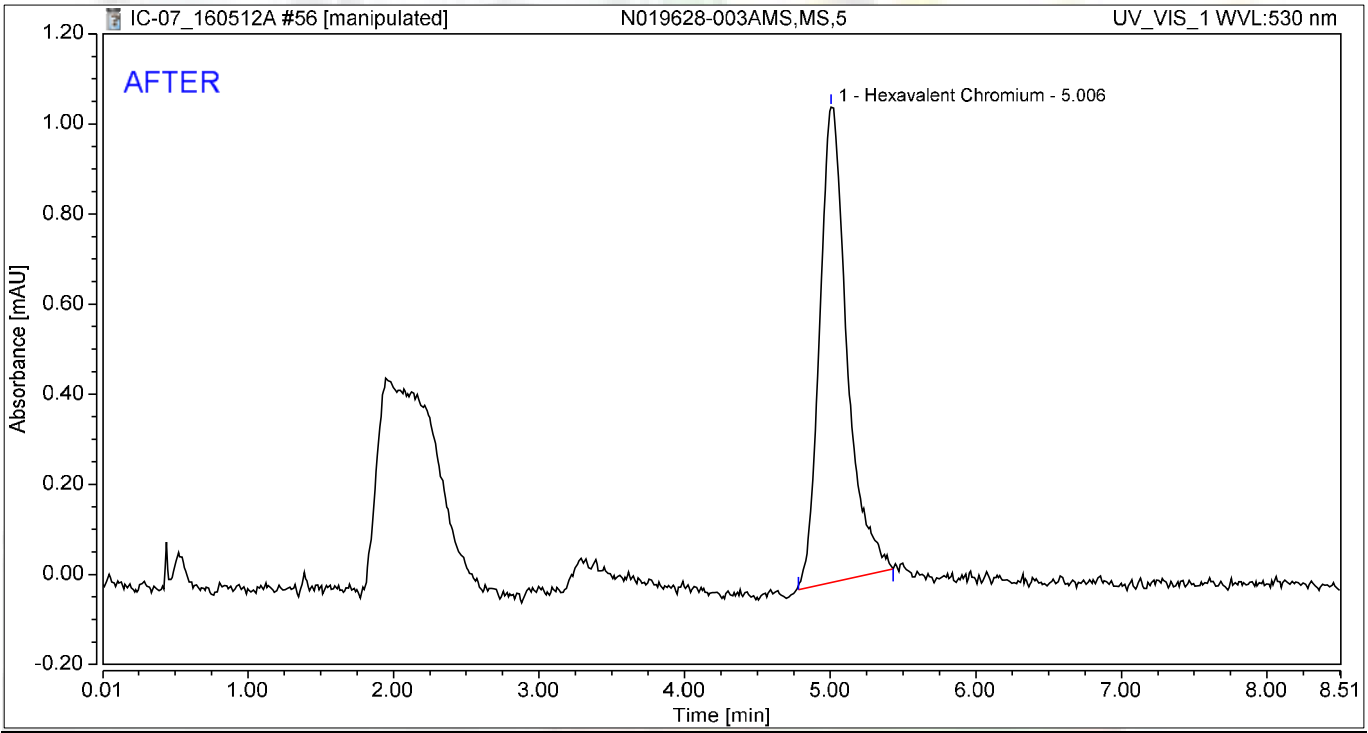
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.230	1.055	100.00	100.00	0.9790
Total:			**0.230**	**1.055**	**100.00**	**100.00**	

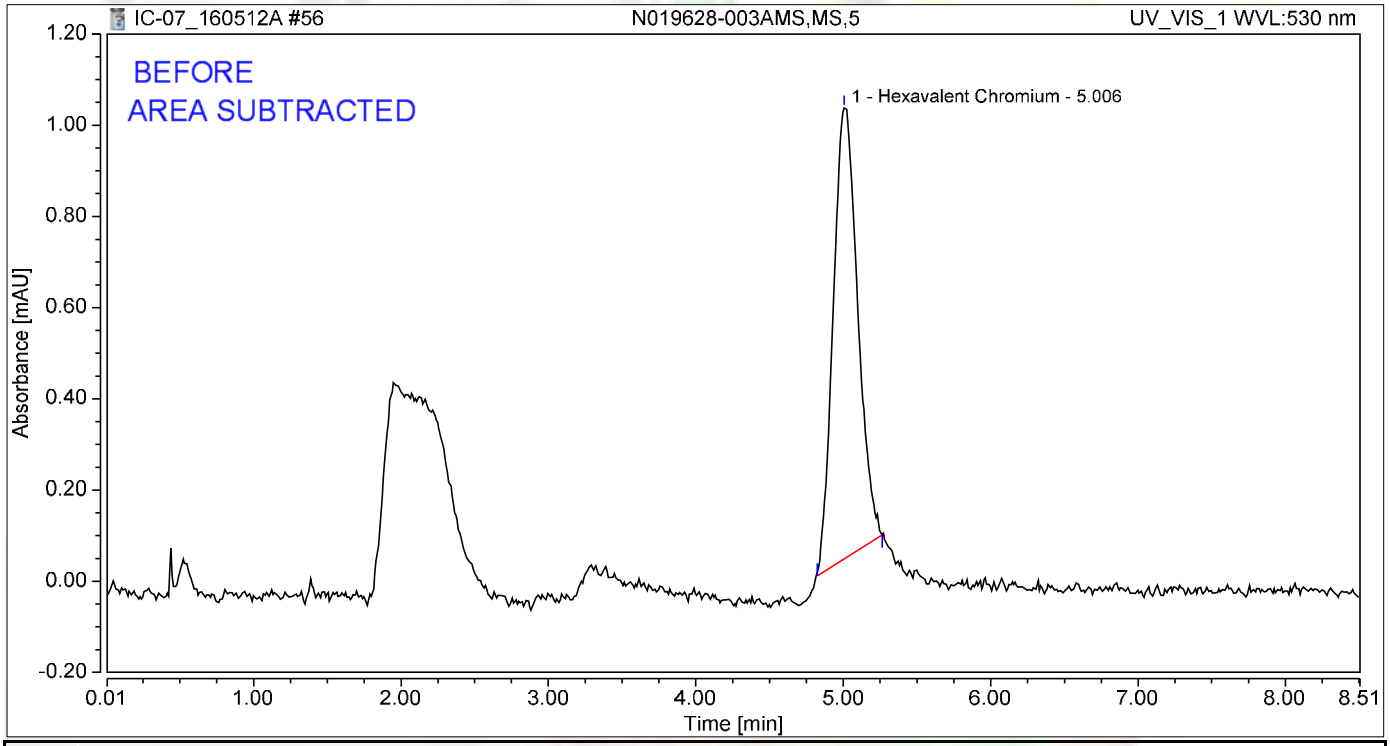
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.190	0.989	100.00	100.00	0.8057
Total:			**0.190**	**0.989**	**100.00**	**100.00**	

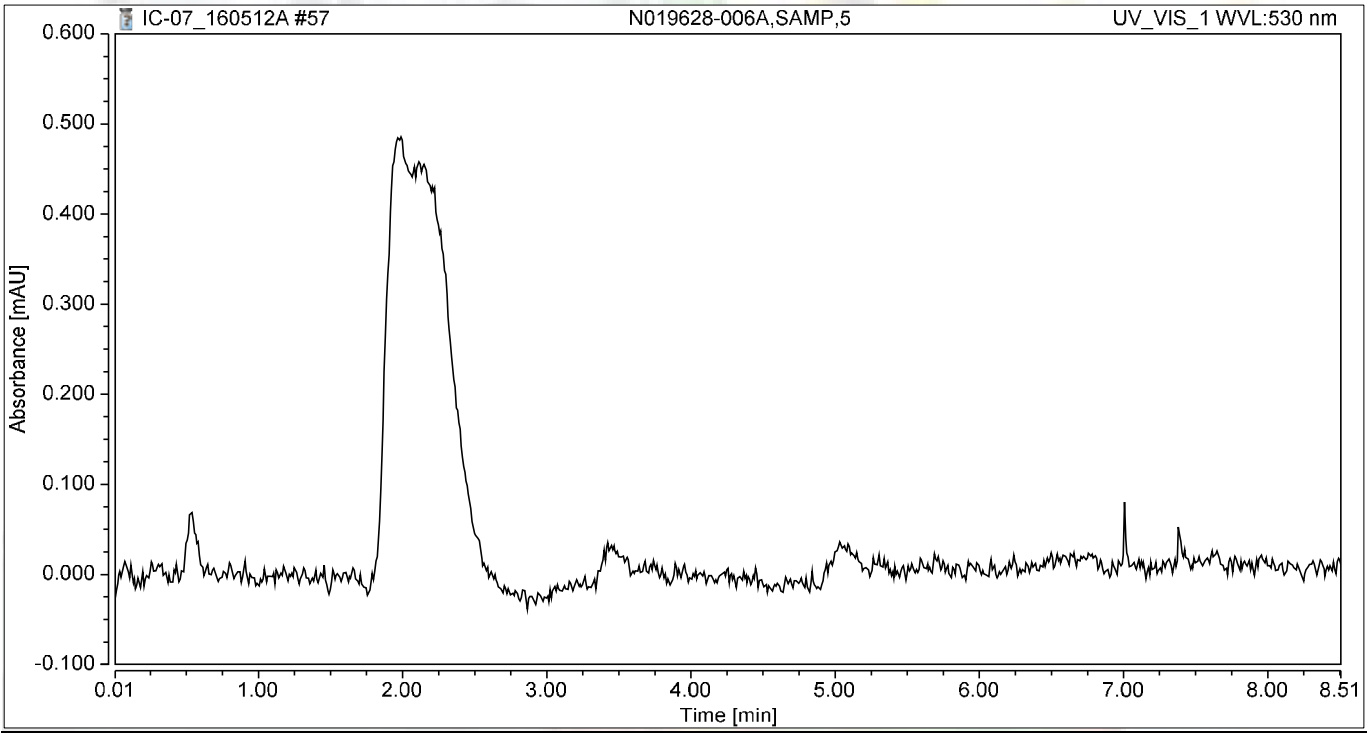
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 18:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

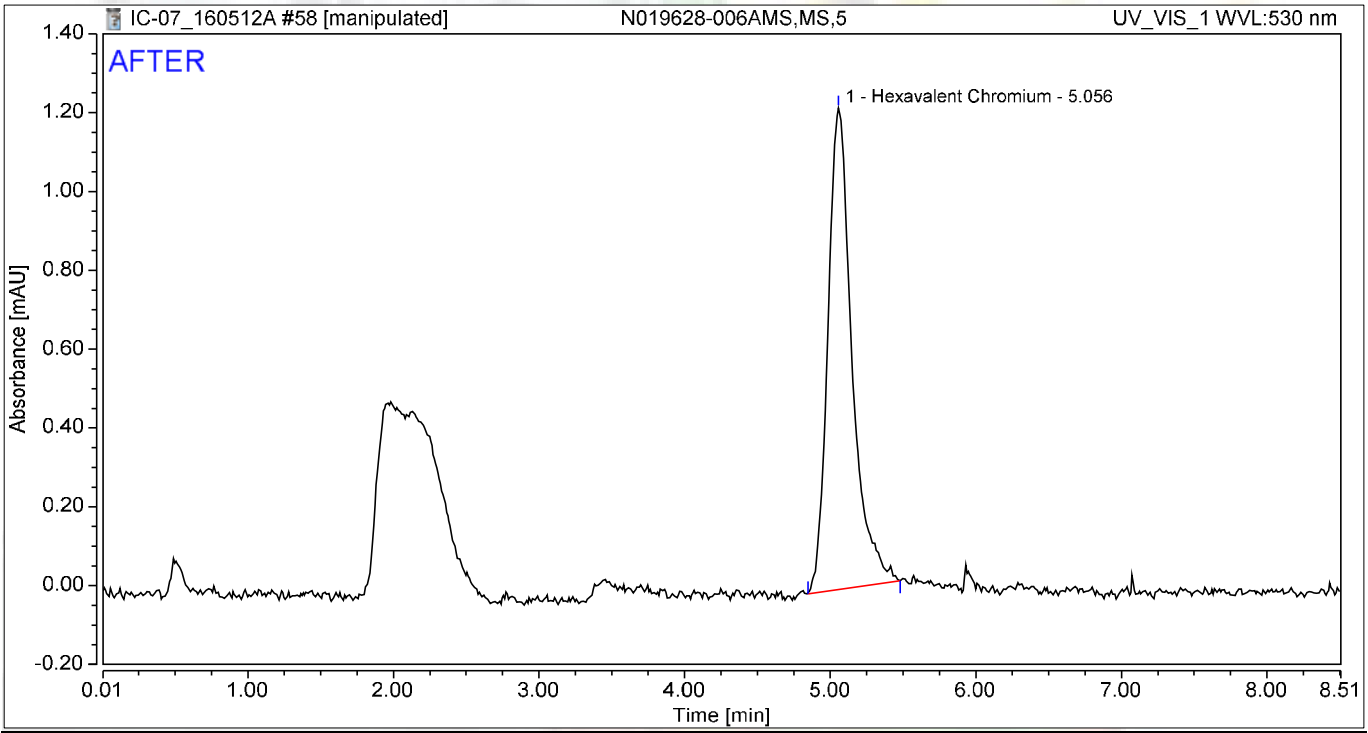
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.235	1.221	100.00	100.00	0.9985
Total:			**0.235**	**1.221**	**100.00**	**100.00**	

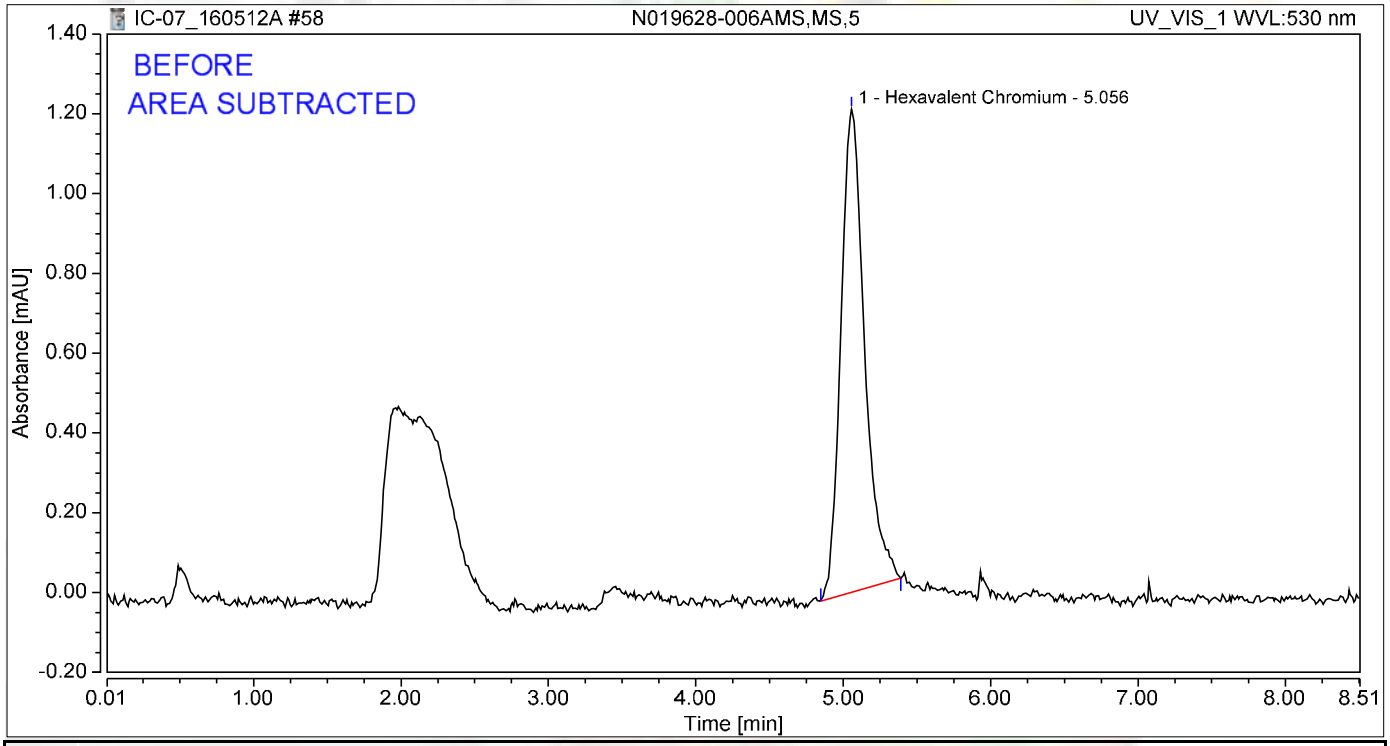
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-006AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	0.225	1.210	100.00	100.00	0.9577
Total:			**0.225**	**1.210**	**100.00**	**100.00**	

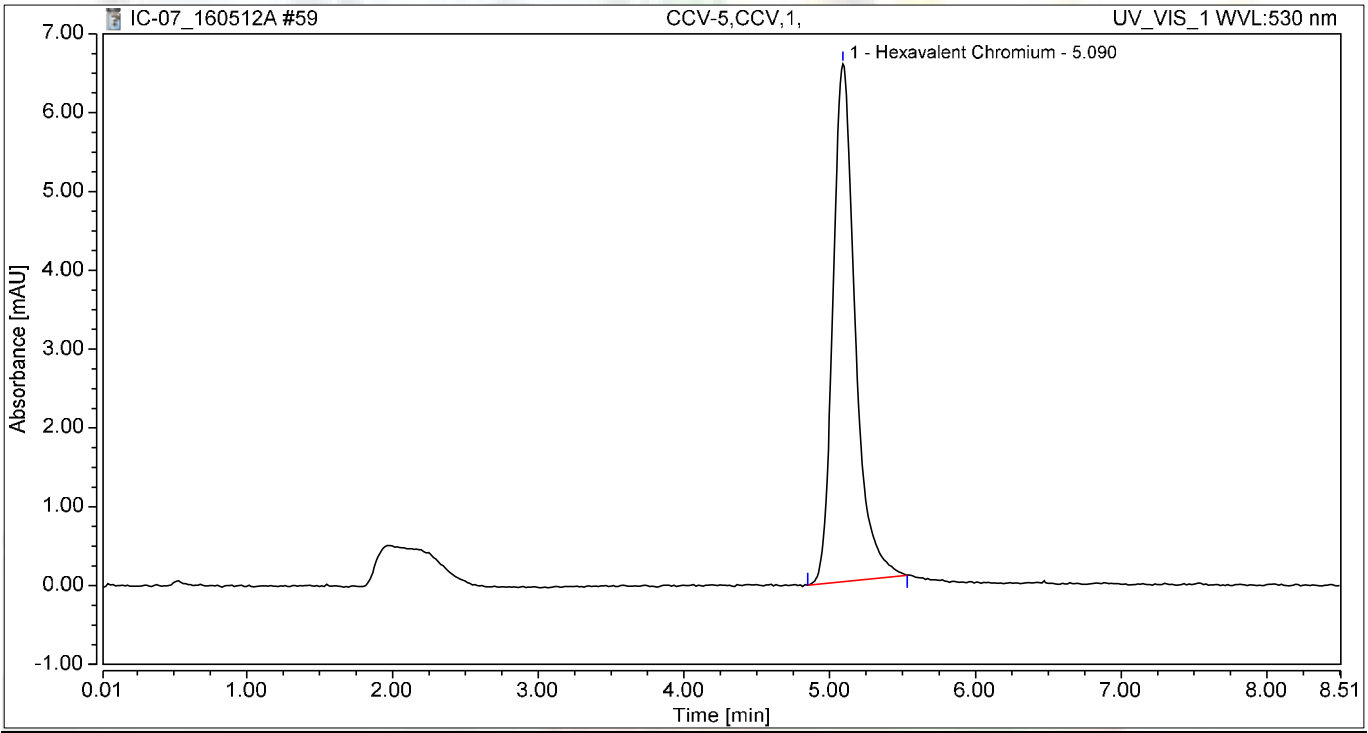
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

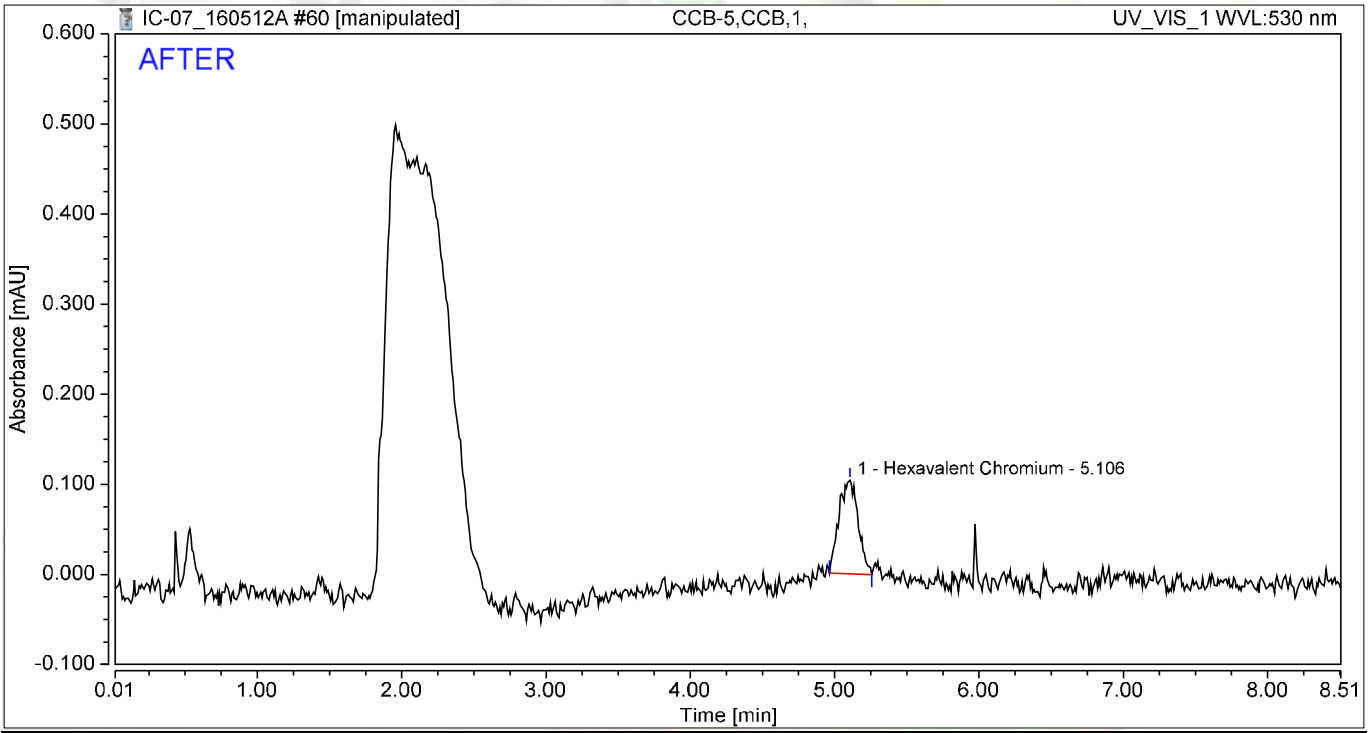
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	1.164	6.565	100.00	100.00	4.9455
Total:			**1.164**	**6.565**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.106	0.016	0.104	100.00	100.00	0.0681
Total:			**0.016**	**0.104**	**100.00**	**100.00**	

5/13/2016

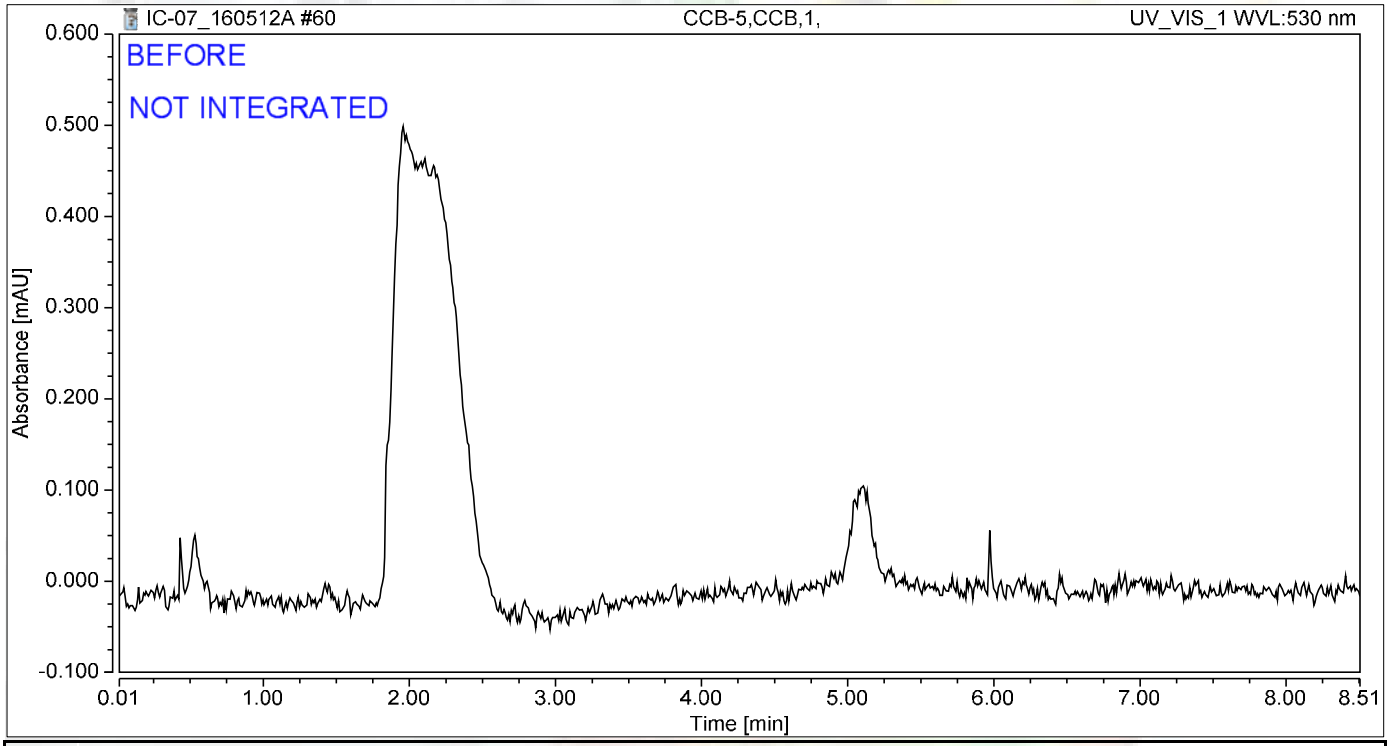
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

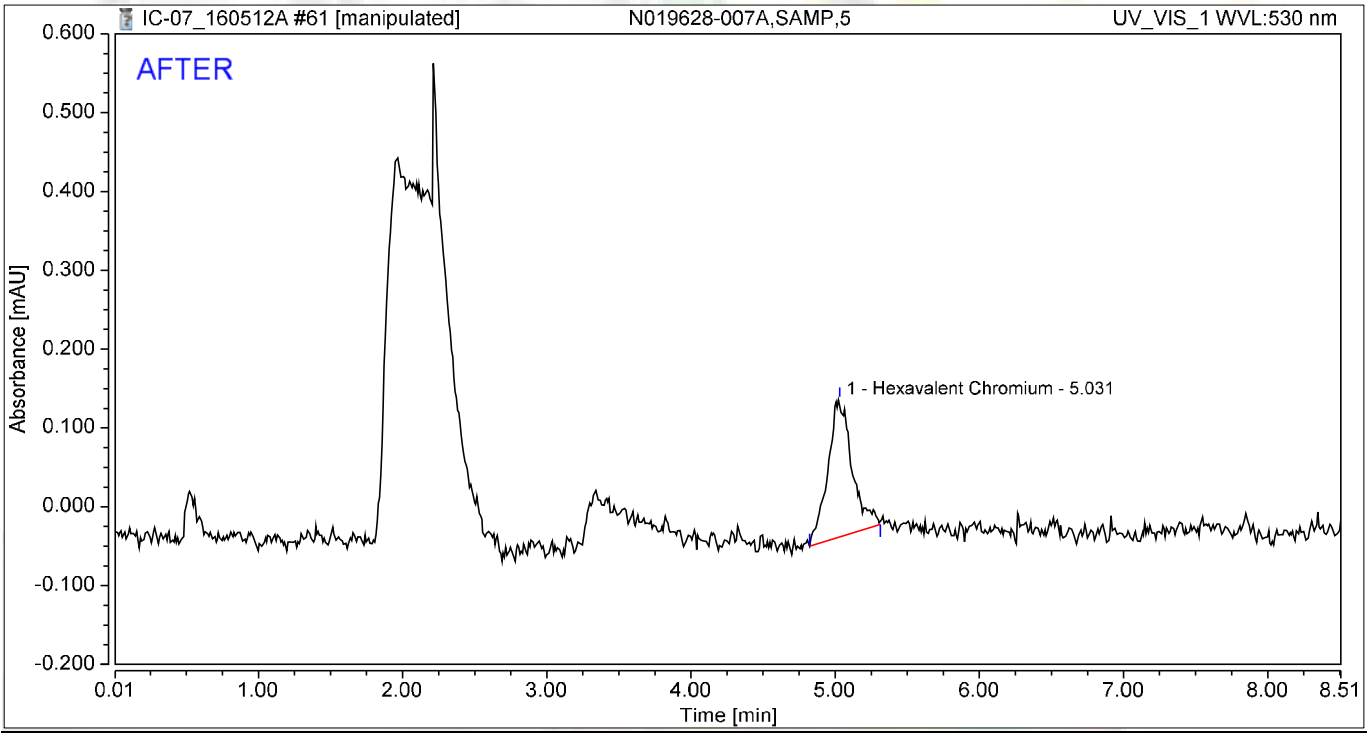
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.034	0.174	100.00	100.00	0.1442
Total:			**0.034**	**0.174**	**100.00**	**100.00**	

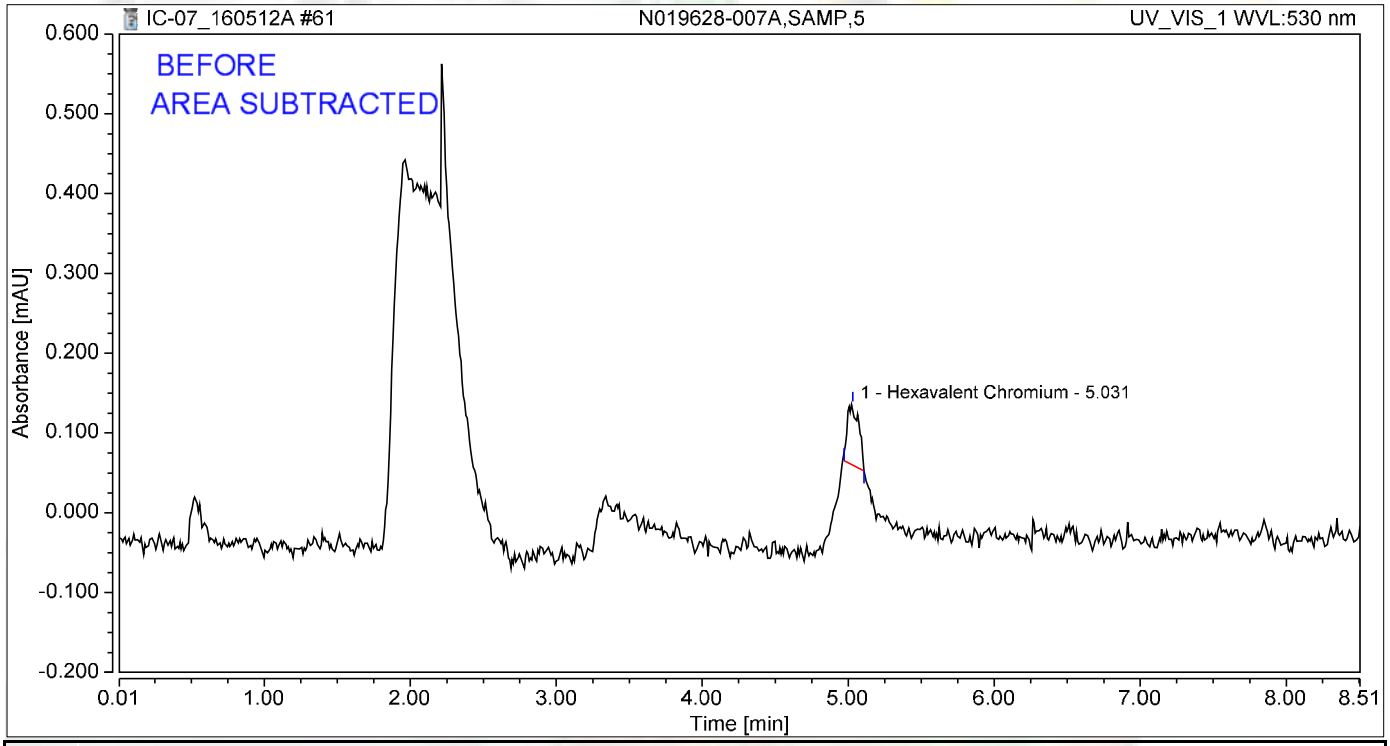
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.007	0.076	100.00	100.00	0.0289
Total:			**0.007**	**0.076**	**100.00**	**100.00**	

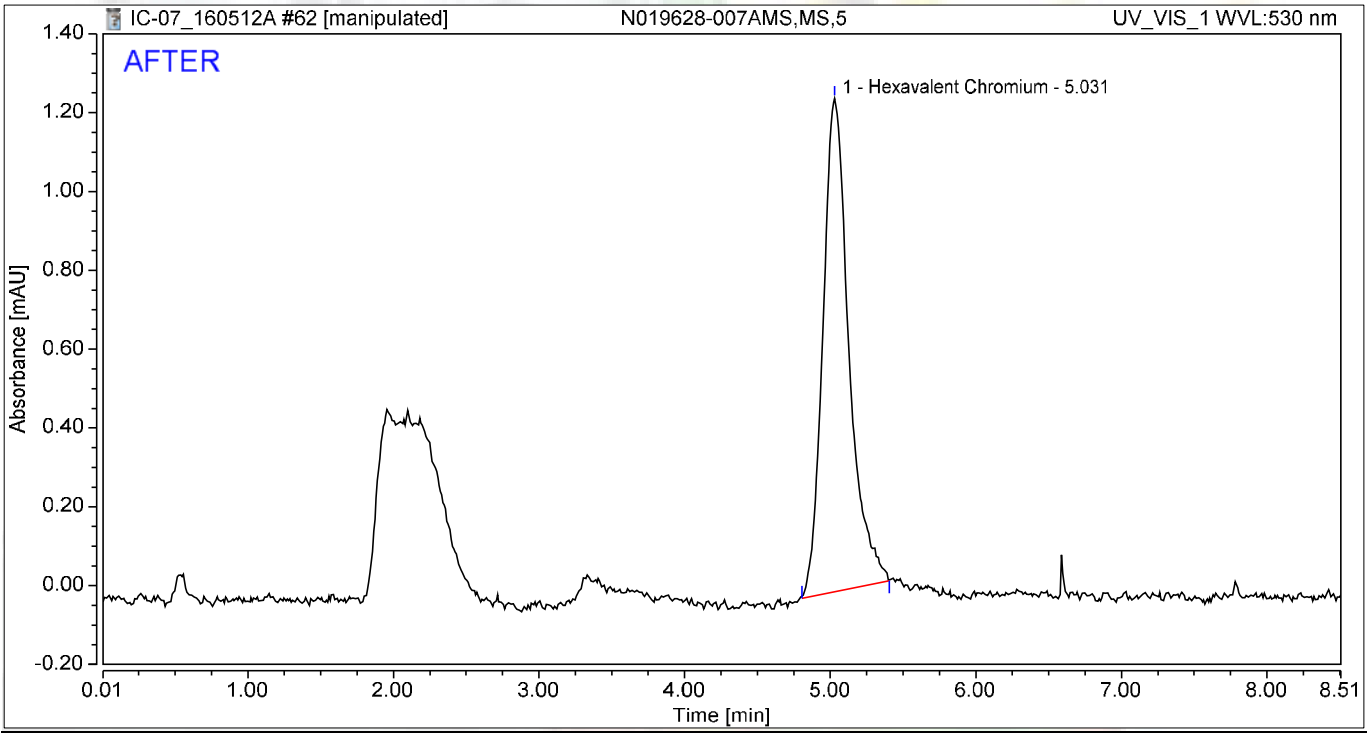
5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.259	1.251	100.00	100.00	1.1007
Total:			**0.259**	**1.251**	**100.00**	**100.00**	

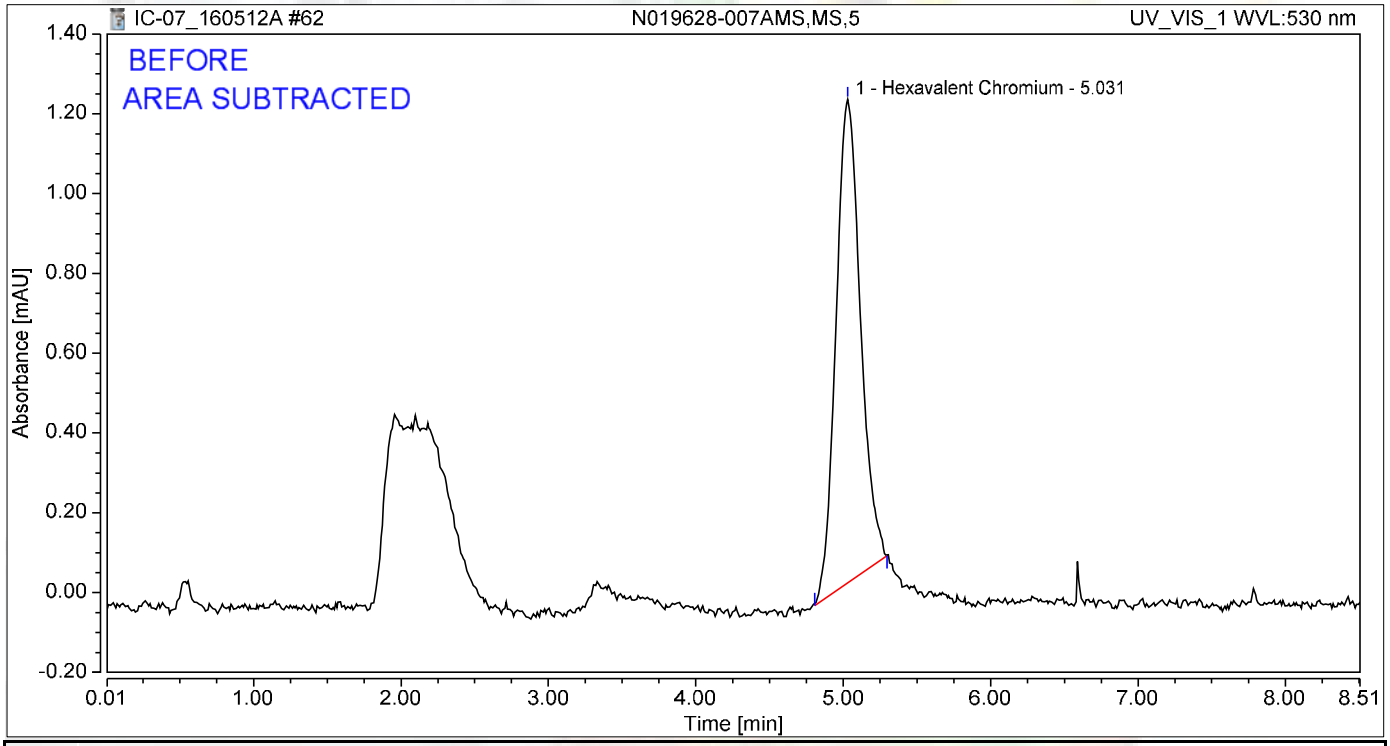
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.233	1.211	100.00	100.00	0.9876
Total:			**0.233**	**1.211**	**100.00**	**100.00**	

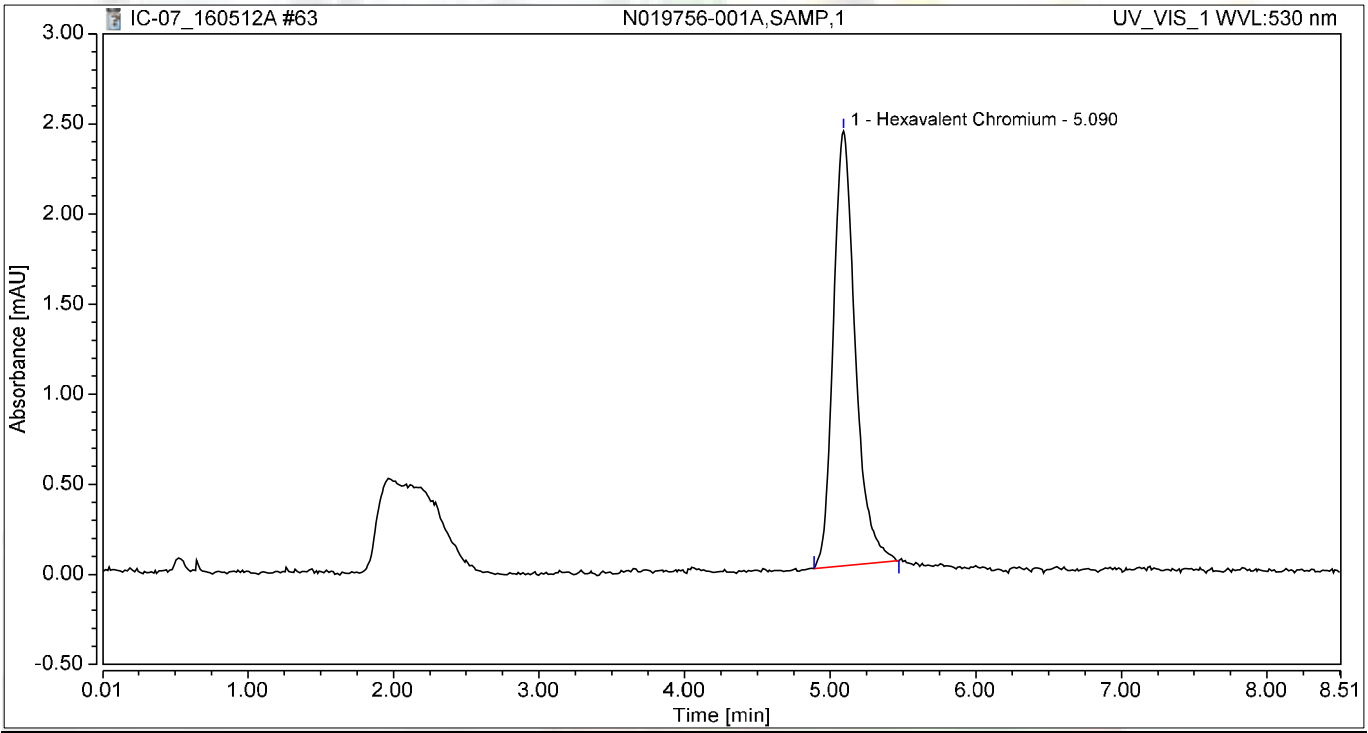
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019756-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

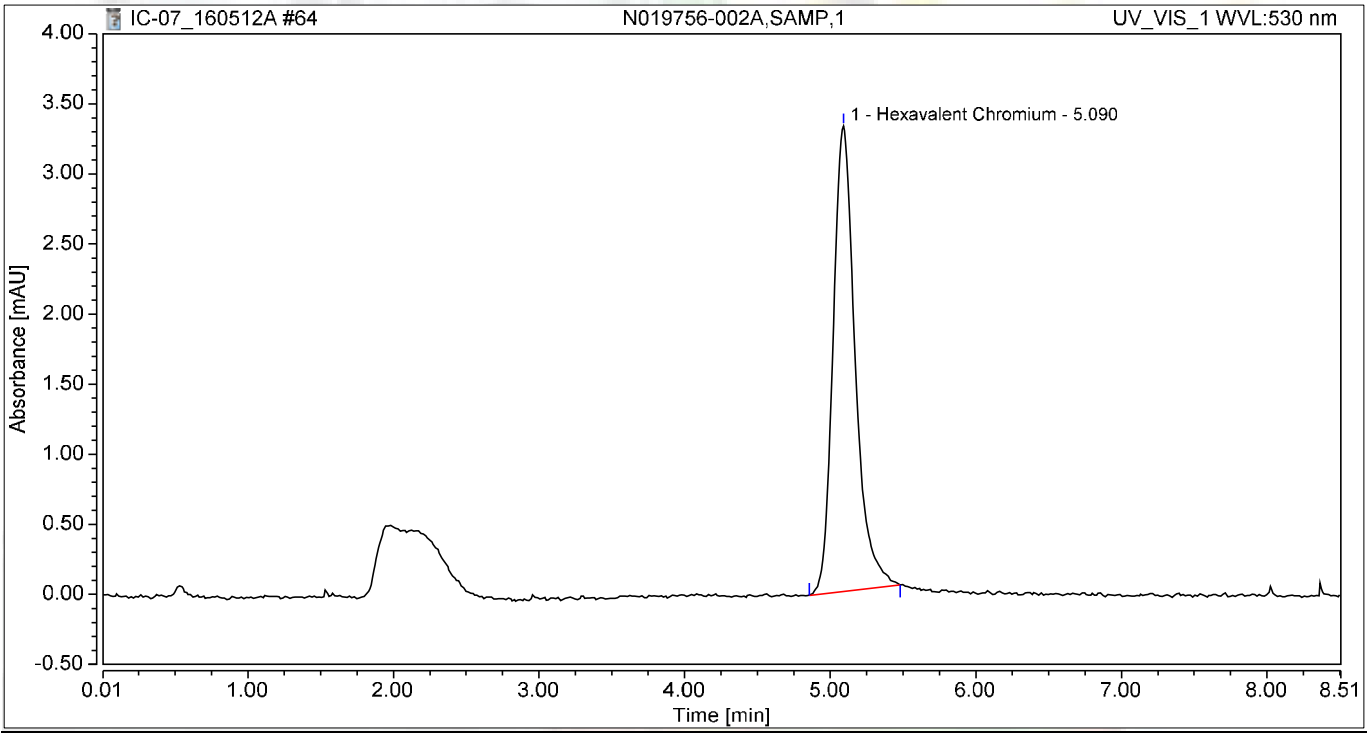
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.422	2.413	100.00	100.00	1.7929
Total:			**0.422**	**2.413**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019756-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 19:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

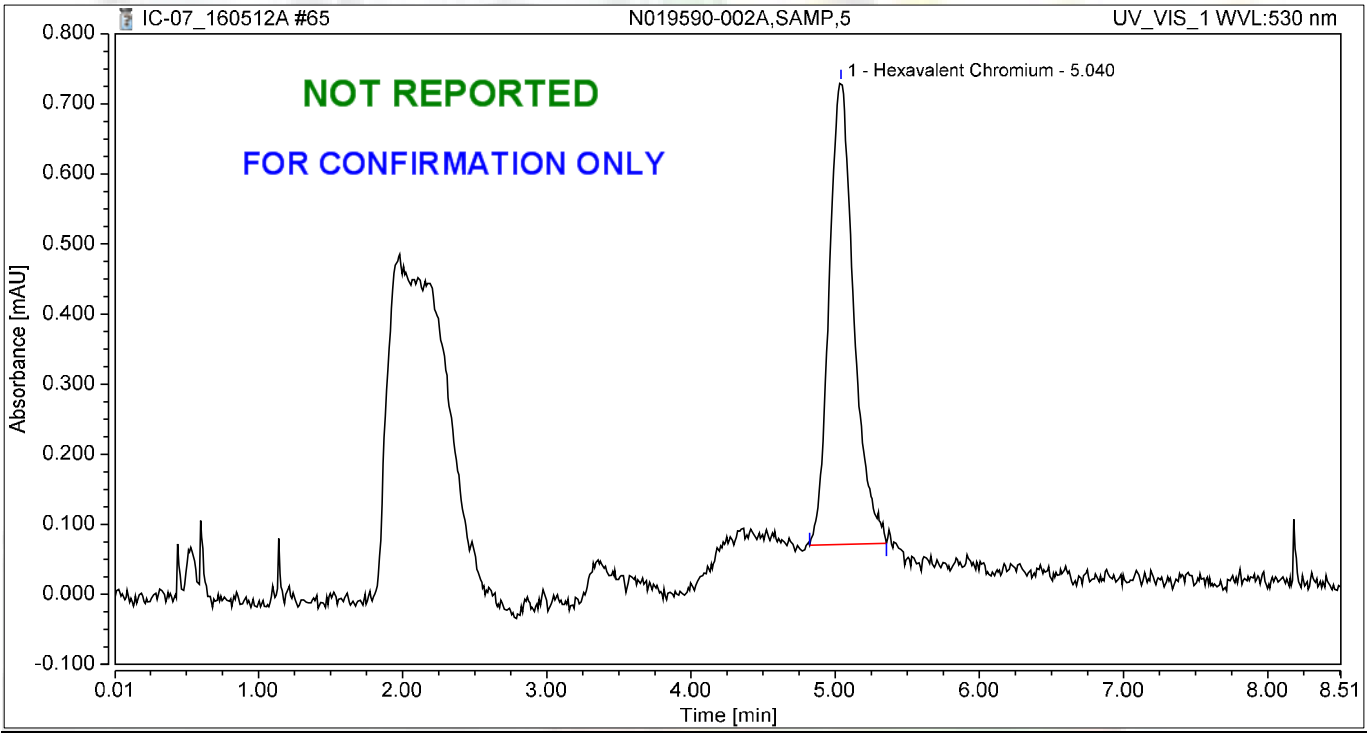
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.585	3.321	100.00	100.00	2.4850
Total:			**0.585**	**3.321**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019590-002A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

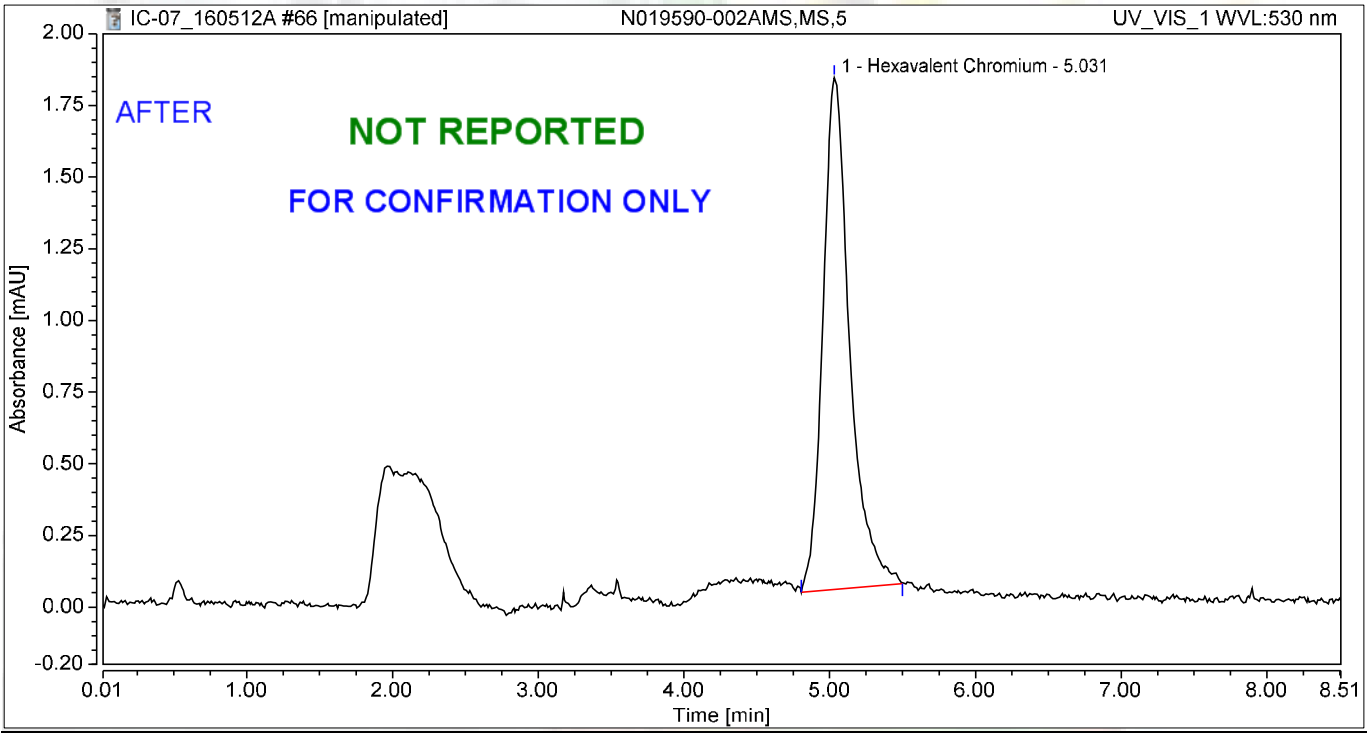
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	0.131	0.660	100.00	100.00	0.5573
Total:			**0.131**	**0.660**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019590-002AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.380	1.785	100.00	100.00	1.6152
Total:			**0.380**	**1.785**	**100.00**	**100.00**	

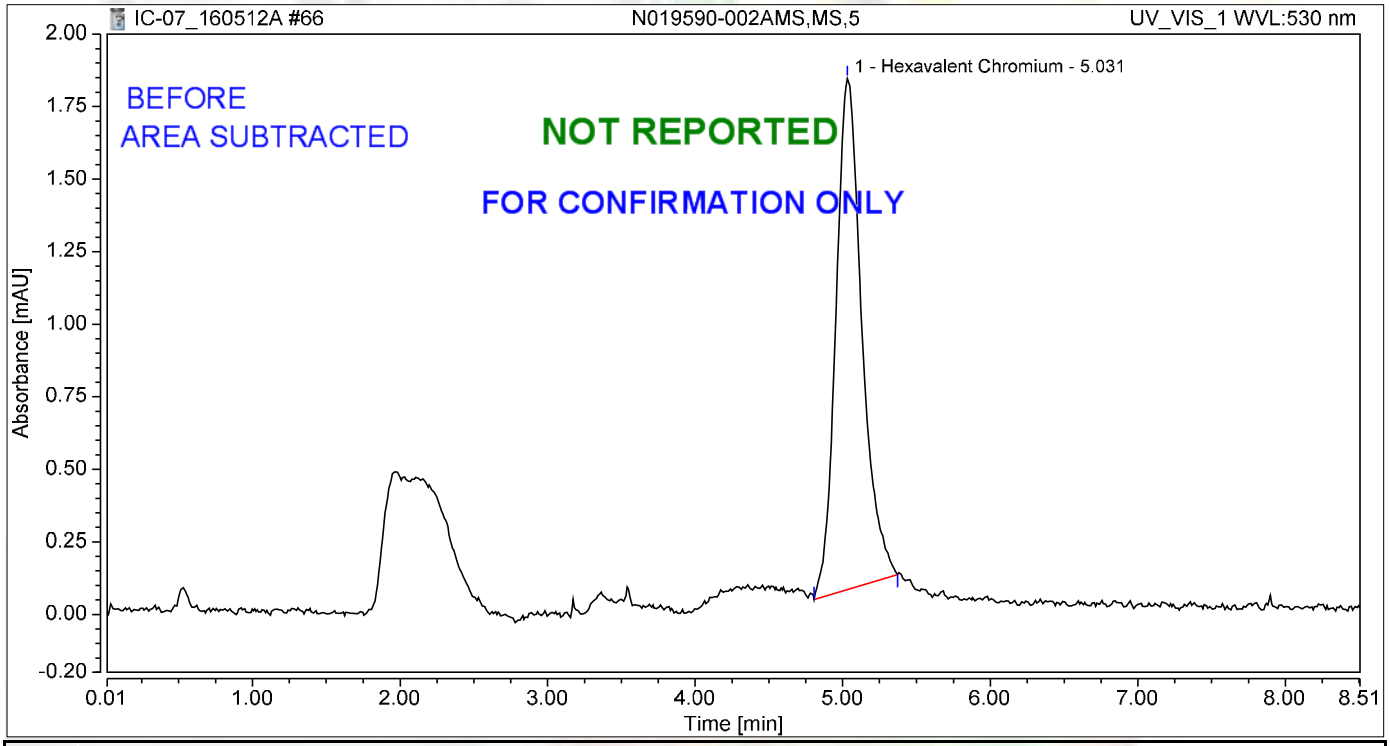
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019590-002AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.031	0.359	1.761	100.00	100.00	1.5232
Total:			**0.359**	**1.761**	**100.00**	**100.00**	

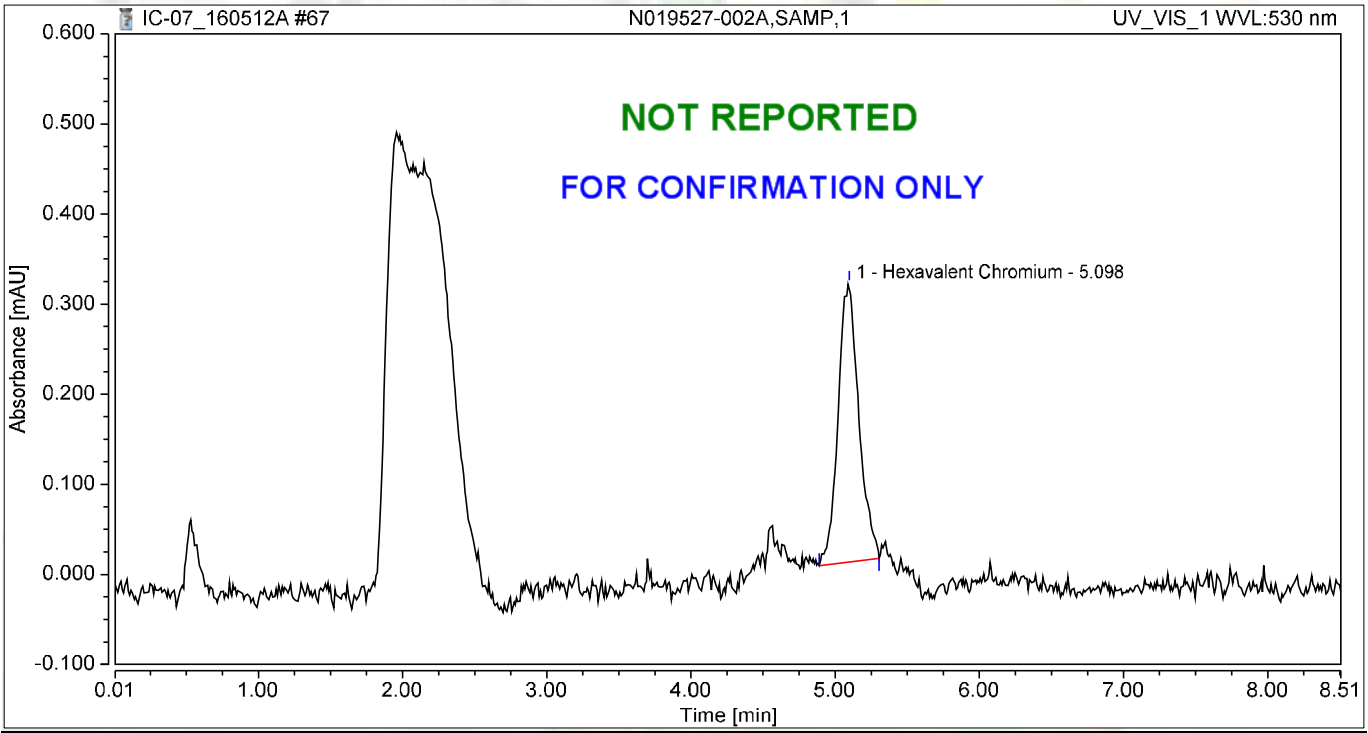
jas 5/13/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019527-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

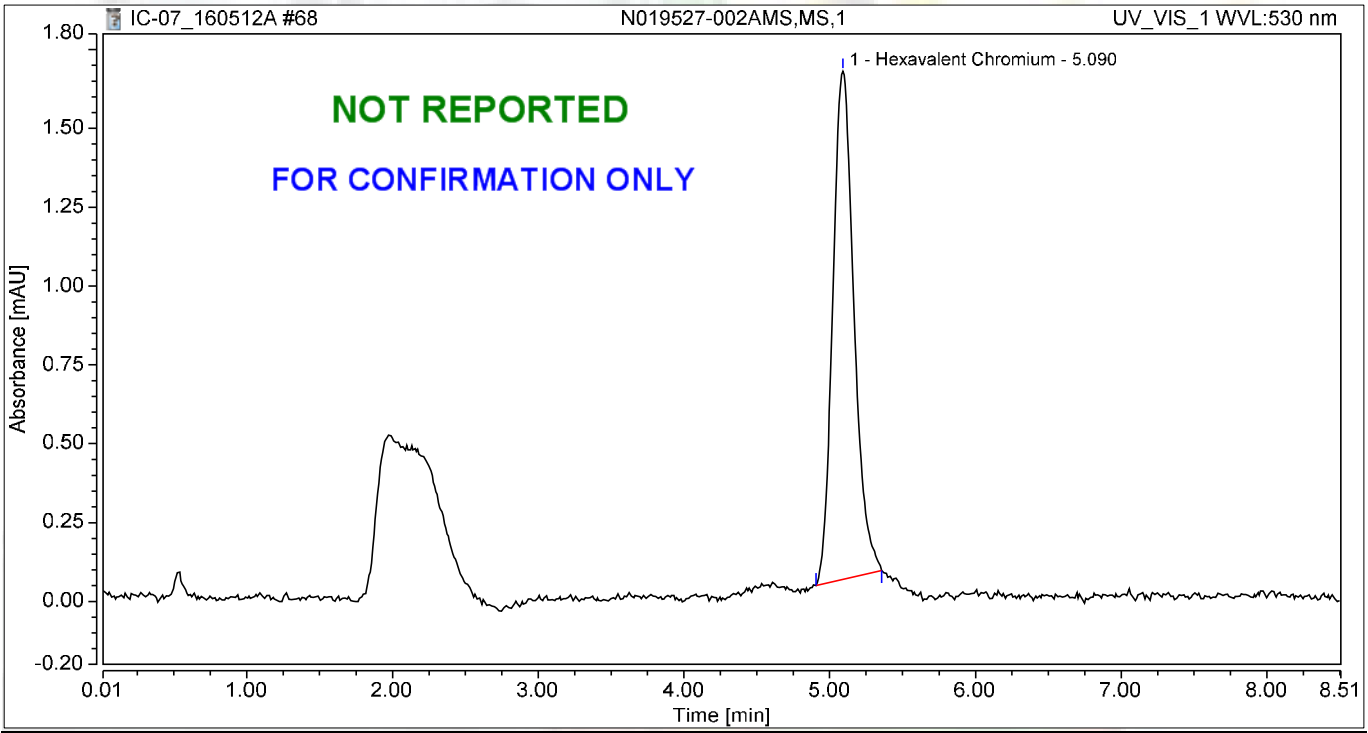
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.098	0.052	0.309	100.00	100.00	0.2191
Total:			**0.052**	**0.309**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019527-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

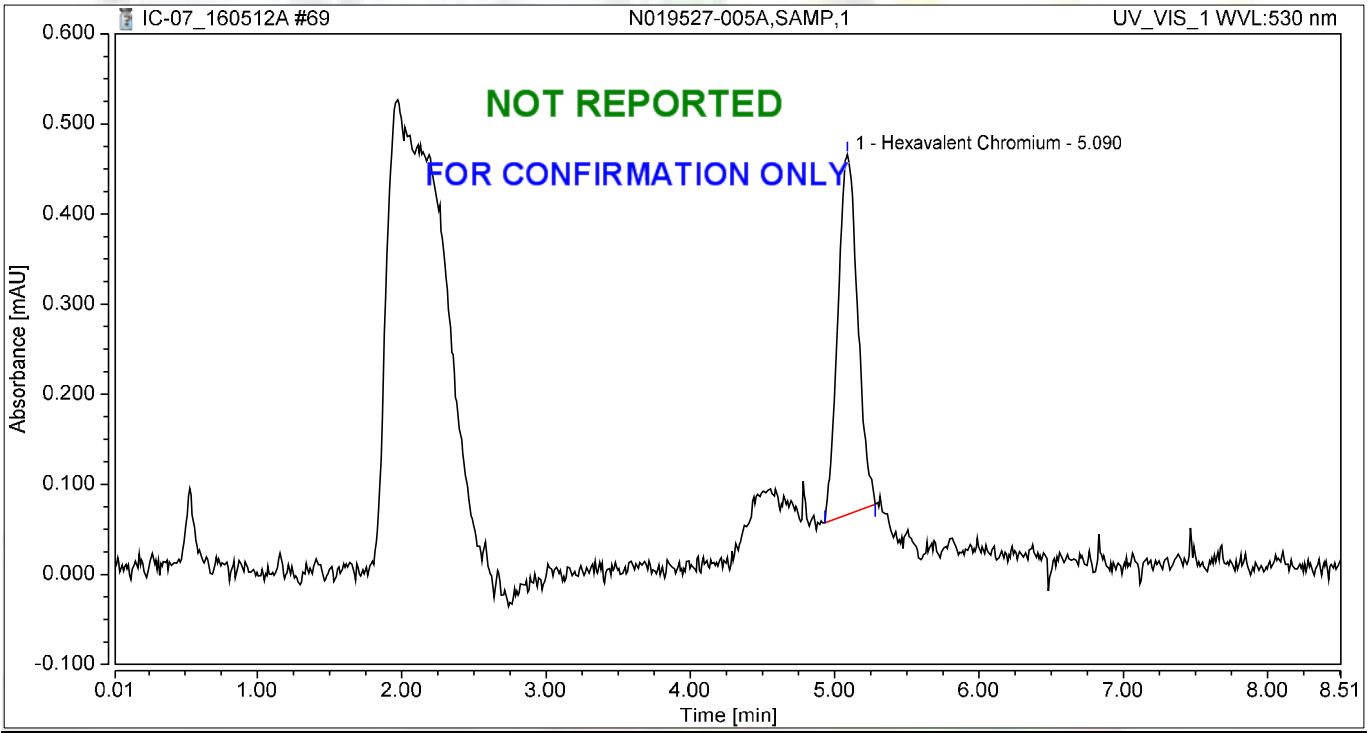
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.271	1.612	100.00	100.00	1.1512
Total:			**0.271**	**1.612**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019527-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

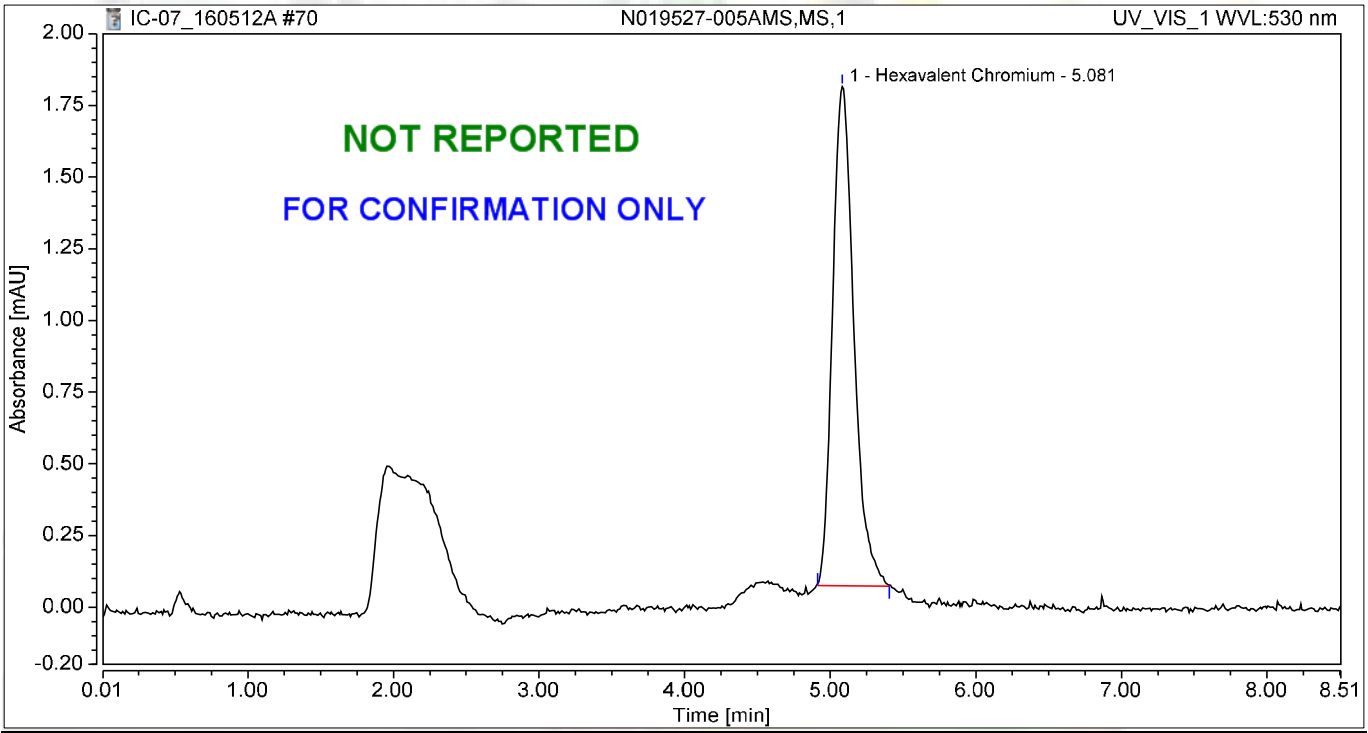
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.064	0.400	100.00	100.00	0.2711
Total:			**0.064**	**0.400**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019527-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 20:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

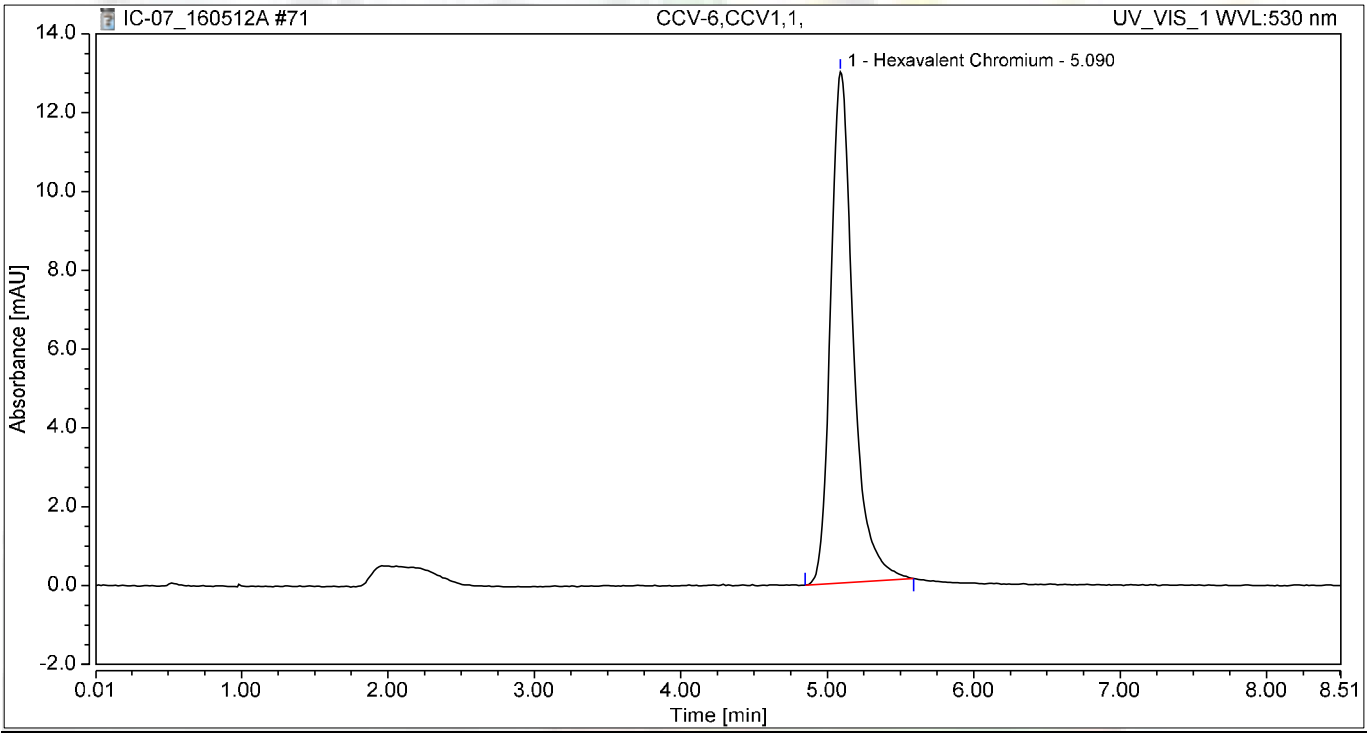
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.295	1.741	100.00	100.00	1.2535
Total:			**0.295**	**1.741**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 21:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

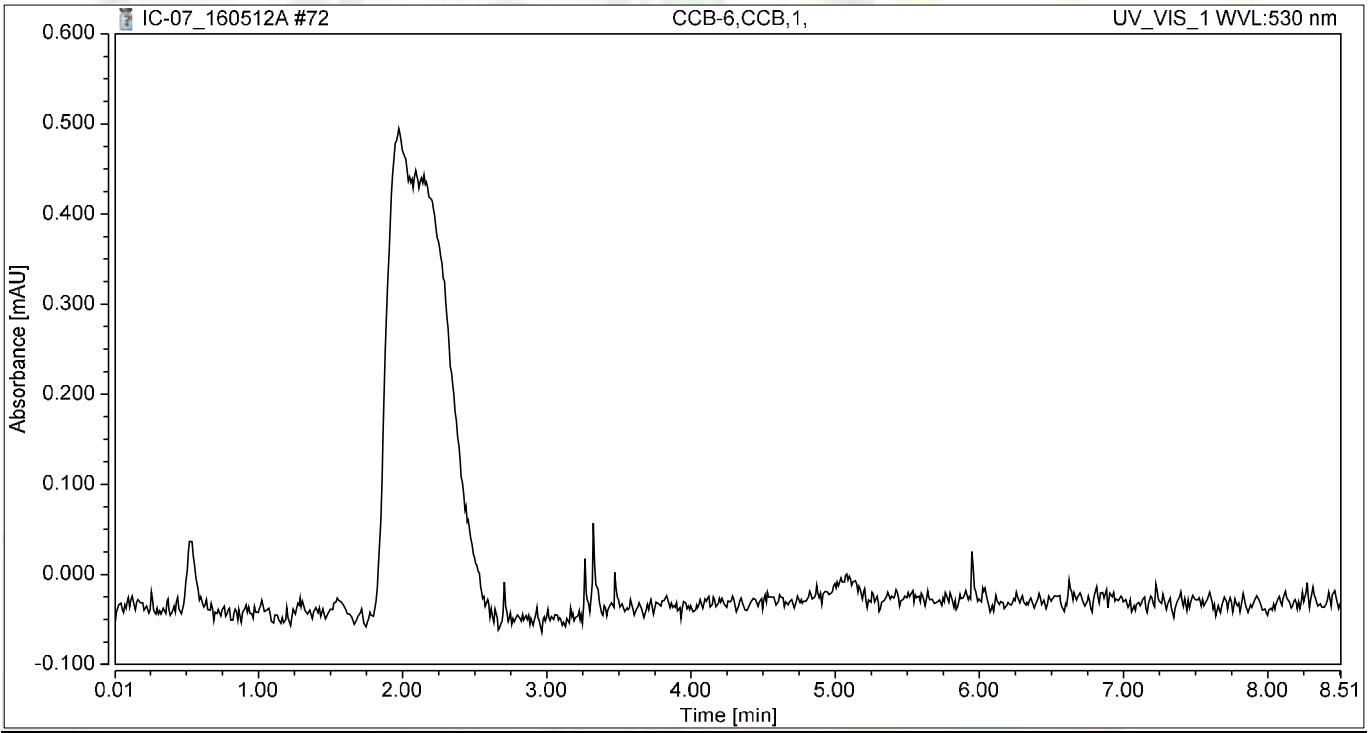
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	2.321	12.970	100.00	100.00	9.8597
Total:			**2.321**	**12.970**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160420_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/16 21:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

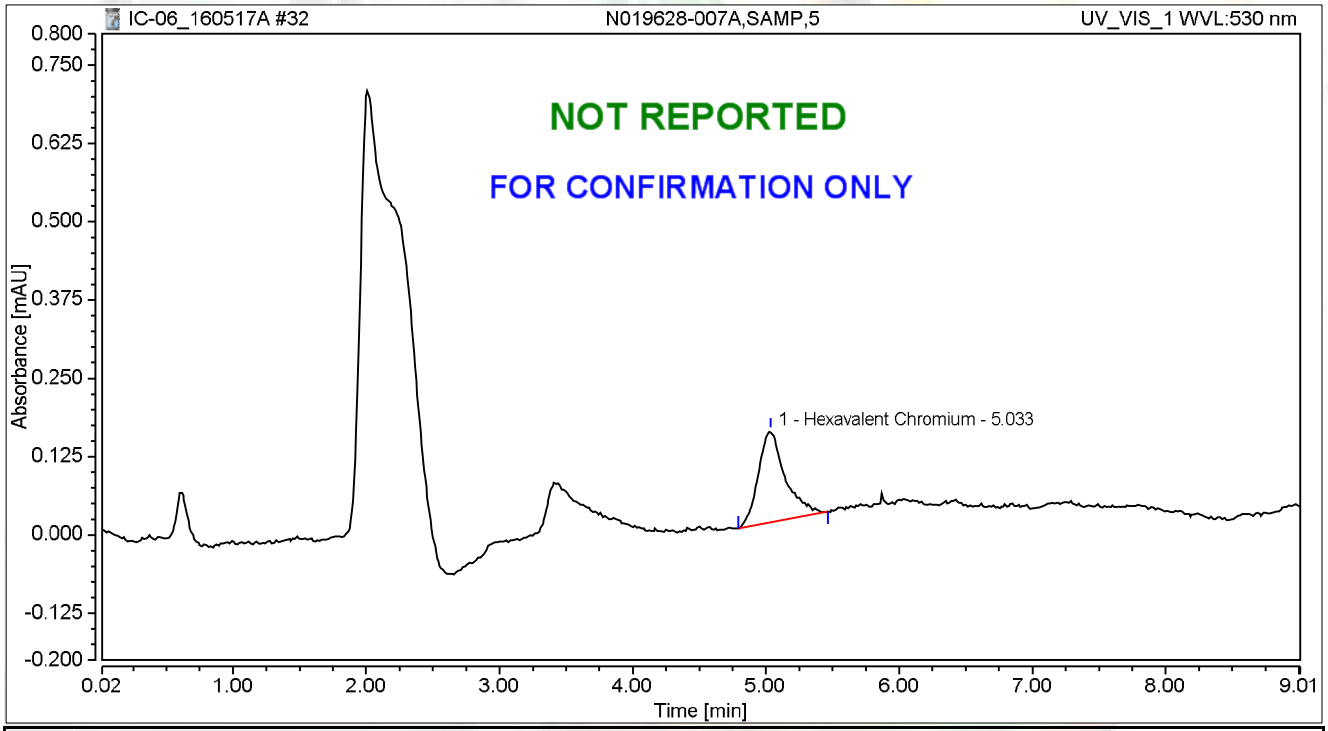
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 14:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

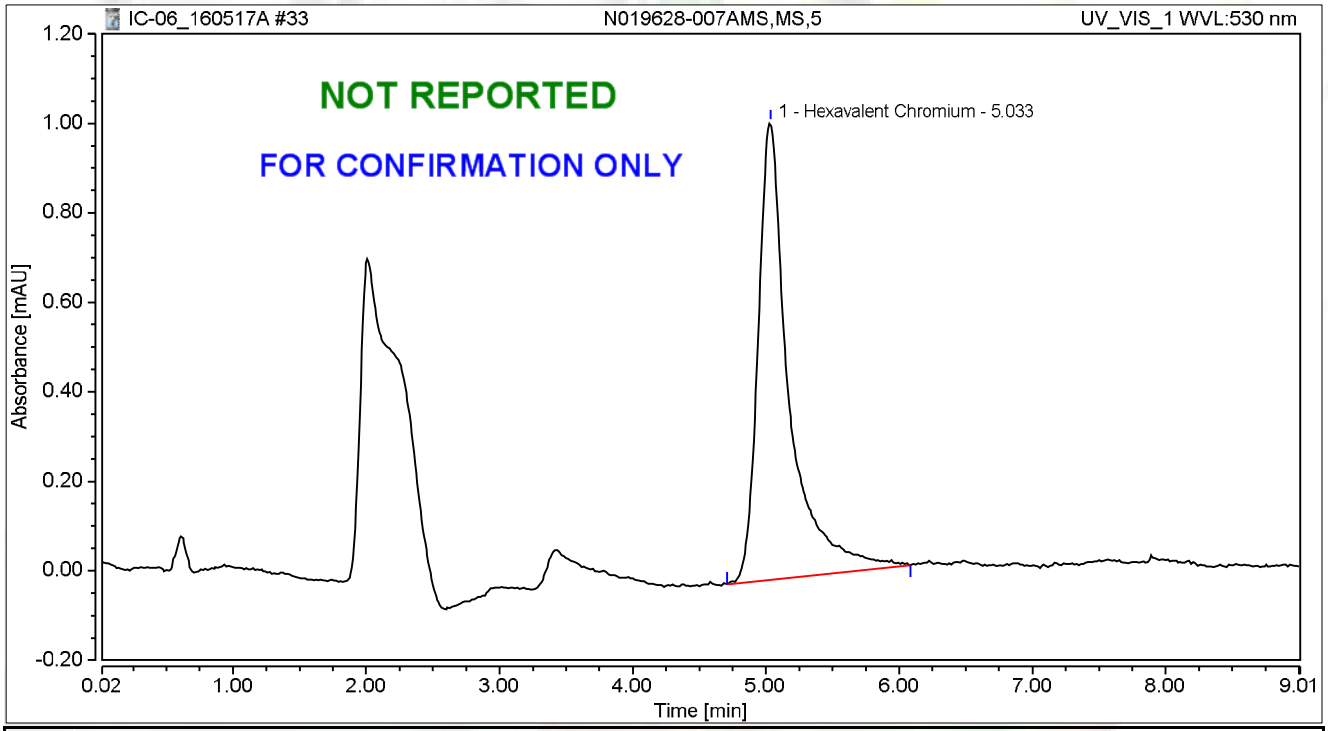
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.033	0.034	0.147	100.00	100.00	0.1281
Total:			**0.034**	**0.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 14:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.033	0.276	1.022	100.00	100.00	1.1617
Total:			**0.276**	**1.022**	**100.00**	**100.00**	

STANDARDS LOG

Inorganics Stock Standard Logbook

Stock STD								Exp Date	
Date	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
2/6/15	Phosphorus as P, 1000 mg/L	1SST150206E	1000 mg/L	Absolute Stds	011615	2/6/15	2/11/15	1/16/18	L
	Sulfate, 1000 mg/L	1 F	1	1	123014	1	1	12/30/17	1
2/6/15	EPA 1664 STANDARD (HEM/SGT-HEM)	1SST150206A	10000 mg/L	ULTRA SCIENTIFIC	CL-3509	2/6/15		10/31/2017	LSR
2/12/15	Hexadecane Sulfonic Acid	1SST150212A	40 mg/mL	ACCUSTANDARD	214101420	2/12/15	3/3/15	11/10/21	LSR
	↓	↓	B	↓	↓	↓	3/9/15	↓	↓
			C						
			D						
↓	↓	↓	E	↓	↓	↓		↓	
3/6/15	1000ppm HEXAVALENT Chromium	1SST150306A	1000 ppm	ERA	300014	3/6/15	3/9/15	06/2017	MB

Advanced Technology Laboratories-Las Vegas
Logbook #1

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	Initials
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	
9/14/15	Hexadecane & Stearic Acid Std	ISSTI509144D	4 mg/mL	ACCU STANDARD	215041058	9/14/15		4/8/25	LSR
↓	↓	↓ E	↓	↓	↓	↓		↓	↓
9/28/15	EPA 1664 STANDARD (MS/MSD)	ISSTI509284A	40000 µg/mL	ULTRA SCIENTIFIC	CM-4130	9/28/15	10/19/15	8/31/18	LSR
11/4/15	Nitrite as N	ISITI511041A	1000 ppm	Absolute Stds	102615	11/4/15	11/10/15	10/26/17	L
12/7/15	Hexadecane & Stearic Acid Std	ISSTI512074A	4 mg/mL	ACCU STANDARD	215041058	12/7/15	12/31/15	4/8/25	LSR
		B							
		C							
		D							
↓	↓	↓ E	↓	↓	↓	↓		↓	↓
12/8/15	EPA 1664 STD (MS/MSD)	ISSTI512084A	40000 µg/mL	ULTRA SCIENTIFIC	CM-4129	12/8/15	12/31/15	8/31/18	LSR
✓ 01/05/16	1000 ppm Hexavalent Chromium	ISST160105A	1000 ppm	HIGH-PURITY	1533405	01/05/16	01/07/16	06/30/17	MEB

Advanced Technology Laboratories-Las Vegas
Logbook #1

			STOCK INFORMATION		
Date	STD Name	Working STD Code	Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
2/9/16	1000 ppm NaCl	IWST160209A	Lims 8263	-	2.0g
2/15/16	1000 ppm Talc	IWST160215A	CINV-140317C	-	1.0g
2/16/16	0.05N Sodium Carbonate (Na_2CO_3)	IWST160216A	CINV-150202G	-	0.265g
↓	↓ Bicarbonate ($NaHCO_3$)	↓ B	CINV-150601A	-	0.8398g
2/23/16	1ppm ClO_4^- 1°	IWST160223A	ISST-150709A	1000	~~0.1~~ 100
	1ppm ClO_4^- 2°	↓ B	ISST-140729A	1000	100
3/3/16	0.05N Sodium Carbonate (Na_2CO_3)	IWST160303A	CINV-150202G	-	0.265g
↓	↓ Bicarbonate ($NaHCO_3$)	↓ B	CINV-150601A	-	0.8398g
3/7/16	1000 ppm TALC	IWST160307A	CINV-140317C	-	1.0g
3/10/16	50 ppm Cl	IWST160310A	ISST-150306A	1000	2500
3/16/16	1000 ppm NaCl	IWST160316A	Lims 8263	-	20g
3/17/16	0.05N Sodium Carbonate (Na_2CO_3)	IWST160317A	CINV-150202G	-	0.265g
↓	↓ Bicarbonate ($NaHCO_3$)	↓ B	CINV-150601A	-	0.8398g
3/21/16	Inorganic Carbon 1000ppm 1°	IWST160321A	CINV-160125B	-	0.8781
↓	Inorganic Carbon 1000ppm 2°	↓ B	CINV-150601A	-	0.6995
3/18/16	20 ppm Phosphate as P	IWST160318A	ISST150730F	1000	1000
4/1/16	1 PPM HEXAVALENT CHROMIUM (1°)	IWST-160401A	~~ISST~~ ISST-150306A	1000	100
↓	1 PPM HEXAVALENT CHROMIUM (2°)	IWST-160401B	ISST-160105A	1000	100
4/4/16	1000 ppm TALC	IWST160404A	CINV 140317C	-	1.0g

	PREPARATION INFORMATION								
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
			Solvent	Supplier	Lot #	Working STD	Manufacturer		
1	2000	1,000	H_2O	-	-	2/9/17	2/4/19		LSR
	1000	1,000	H_2O	-	-	2/15/17	5/9/17		LSR
	100	0.05N	H_2O	-	-	2/23/16	2/13/18		LR
	1	1	1	-	-	1	6/9/18		LSR
5	100	1ppm	H_2O	-	-	7/10/16	7/10/16		[illegible]
	100	1ppm	1	-	-	8/23/16	01/17/17		1
	100	0.05N	H_2O	-	-	3/10/16	2/13/18		LSR
	1	1	1	-	-	1	6/9/18		LSR
	1000	1000	H_2O	-	-	3/7/17	5/9/17		LSR
10	50	5N	H_2O	-	-	9/10/16	c/n		2
	2000	1000 ppm	H_2O	-	-	3/16/17	2/4/19		LSR
	100	0.05N	H_2O	-	-	3/24/16	2/13/18		LR
	1	1	1	-	-	3/24/16	6/9/18		LSR
	100	1000ppm	H_2O	-	-	3/21/17	3/22/19		[illegible]
15	1	1	1	-	-	3/21/17	6/9/18		1
	50	20	H_2O	-	-	8/14/16	8/14/16		2
	100	1 ppm	H_2O	-	-	10/1/16	6/30/17		JAS
	100	1 ppm	H_2O	-	-	10/1/16	6/2017		JAS
	1000	1000 ppm	H_2O	-	-	4/4/17	5/9/17		LSR
20									[illegible]

ASSET Laboratories

* Working std expiration date must not exceed the manufacturer's expiration date.

CALIFORNIA
Suite C, Cerritos, CA 90703
P: 562.219.7435 F: 562 219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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Logbook #2
Inorganics WK Std Log

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CIW-160111 C	Buffer, pH 7	Thermo Scientific	TP2		1/11/16		11/2017	LSR	
D	↓, pH 10	VWR	1509B50		1/11/16		3/2017	LSR	
E	CONDUCTIVITY STD, 1413 ms/cm	Metteler Toledo	1511260009		1/11/16		8/24/17	LSR	
CIW-160112A	HEXANES	EMD Chemicals	55219		1/12/16	1/12/16	1/12/18	LSR	8147
B						1/19/16	1/19/18	LSR	8148
C						1/28/16	1/28/18	LSR	8149
D						2/17/16	2/17/18	LSR	8150
CIW-160125A	SODIUM CARBONATE	MACRON	109514		1/25/16	2/12/16	2/12/19	REB	
CIW-160125B	↓	↓	↓		↓	3/22/16	3/22/19	↓	
C	Ammonium hydroxide	BDH	7215070		1/25/16	2/24/16	2/24/18	REB	
CIW-160125 ~~A~~ D REB 1/25/16	Ammonium sulfate	JT. BAKER.	126292	≥99%	1/25/16	1/25/16	1/25/19	REB	
E						02/01/16	02/01/19		
F						2/10/16	2/10/19		
G						2/23/16	2/23/19		
CIW-160125 H	1,5 diphenyl carbazide	J-T	125086		1/25/16	3/10/16	3/10/19	REB	
CIW-160125 ~~I~~ 5 I LSR 1/25/16	Turbidity, 5.0 NTU	AMCO Clear	C585117	–	1/25/16	2/1/16 2/27/16	1/2017	LSR	
CIW-160219 A	Zinc acetate	RICCA	1601D42	—	2/19/16		01/2018	YRJ	
CIW-160219 B	METHANOL	J-T BAKER	121483	99.8%	2/19/16	2/20/16	2/20/18	REB	
C	Magnesium chloride	Omni Pur	15K18008		↓	3/10/16	3/10/19	↓	
D	Ammonium persulfate	BDH	2455C516	≥98%	↓	3/14/16	3/14/19	↓	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

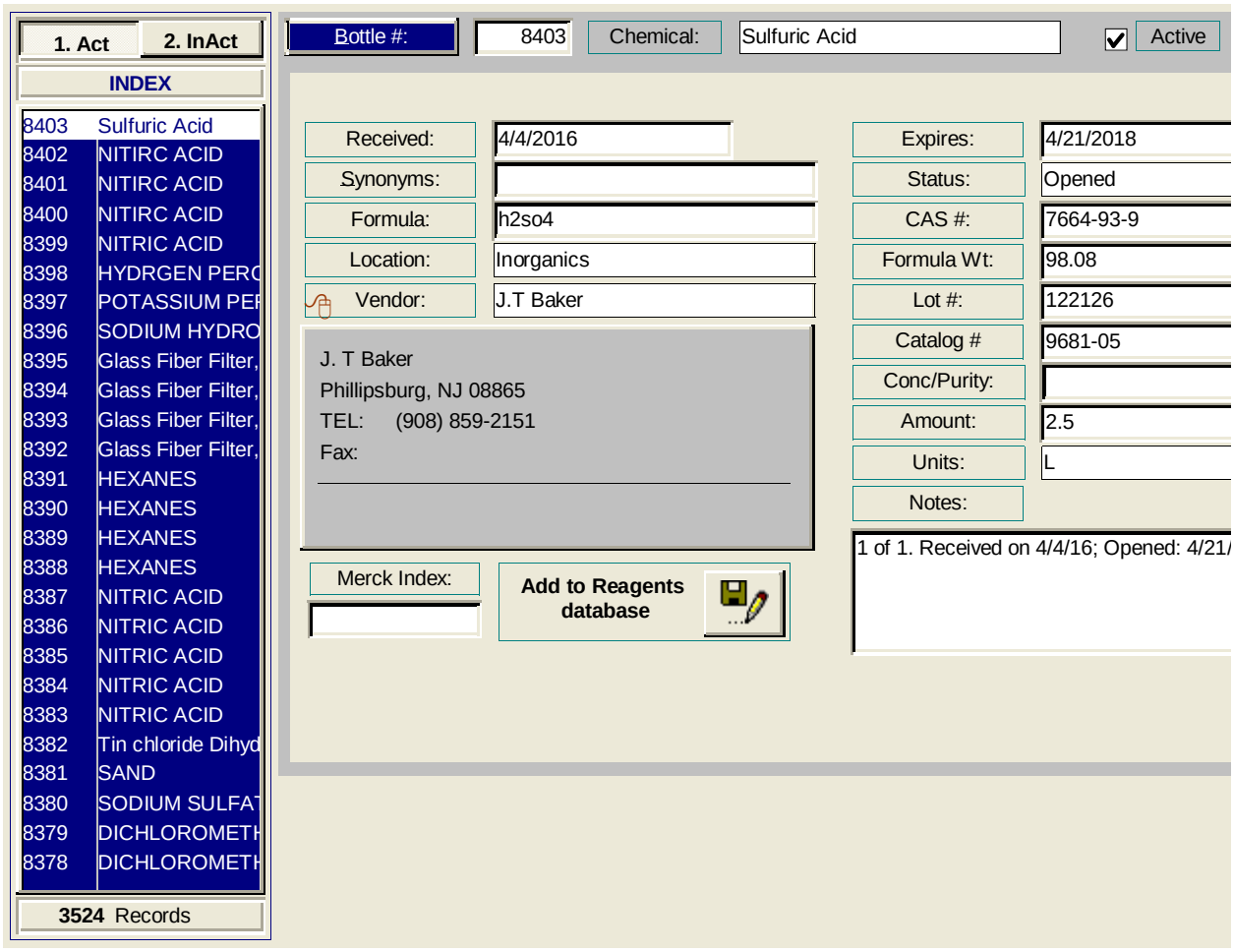
Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CIW-160219 E	Ammonium sulfate	J.T BAKER	12~~6292~~	≥99%	2/4/16	3/7/16	3/7/19	MEG	
F	"	"	"	"	"	3/24/16	3/24/19	"	
G	"	"	"	"	"	4/7/16	4/7/19	"	
H	"	"	"	"	"	4/14/16	4/14/19	"	
CIW-160309A	Buffer, pH 7	BDH	15128S4	-	3/9/16		11/2017	LSR	
B	Sodium Chloride	JT Baker	36-24-19	-	3/9/16			LSR	
C	Boiling Stones	Chemware	5071-6B010	-	3/9/16			LSR	
CIW-160322A	Buffer pH 4	~~BDH~~ VWR	15124A49	-	3/22/16		11/2017	LSR	
B	Conductivity Std, 10000 uS/cm	VWR	CC14097	-	3/22/16		9/23/16	LSR	
C	HEXANES	EMD	SS294	-	3/22/16	4/15/16	4/15/18	LSR	8388
D	"	"	"	-	"			LSR	8389
E	"	"	"	-	"			LSR	8390
F	"	"	"	-	"			LSR	8391
CIW-160405A	Sulfanilamide	J.T Baker	123377	-	4/5/16	4/6/16	4/6/19	MEG	
CIW-160406A	Ammonium Sulfate	J.T Baker	126292	≥99%	4/6/16	4/20/16	4/20/19	MEG	
B	"	"	"	"	"	5/9/16	5/9/19	"	
C	"	"	"	"	"			"	
D	"	"	"	"	"			"	
E	Ammonium hydroxide	BDH	7215070	-	"	04/06/16	04/06/18	MEG	
F	"	"	"	-	"	5/1/16	5/1/18	"	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160408G	METHANOL	J.T Baker	137849	—	4/6/16	5/10/16	5/10/18	RSJ	
CINV-160408A	1,5-diphenylcarbohydrazide	JT Baker	125886		4/8/16			JAJ	
CINV-160411A	Methanol, P+T	B+J	DNC15	7/99.9%	—			2	
	B								
	C								
	D					4/19/16	4/19/18		
	E					5/12/16	5/12/18		
	F								
CINV-160425A	1411 µS/cm conductivity std	VWR	CC14367	—	4/25/16		12/2/16	2	
B	9985 µS/cm conductivity std	VWR	CC14714	—			3/3/17		
C	10,000 µS/cm conductivity std	Ricca	1512C35	—			12/17		

Advanced Technology Laboratories-Las Vegas
Logbook #2


1. Act
2. InAct
INDEX
8403 Sulfuric Acid
8402 NITIRC ACID
8401 NITIRC ACID
8400 NITIRC ACID
8399 NITRIC ACID
8398 HYDRGEN PERC
8397 POTASSIUM PEI
8396 SODIUM HYDRO
8395 Glass Fiber Filter,
8394 Glass Fiber Filter,
8393 Glass Fiber Filter,
8392 Glass Fiber Filter,
8391 HEXANES
8390 HEXANES
8389 HEXANES
8388 HEXANES
8387 NITRIC ACID
8386 NITRIC ACID
8385 NITRIC ACID
8384 NITRIC ACID
8383 NITRIC ACID
8382 Tin chloride Dihyd
8381 SAND
8380 SODIUM SULFAT
8379 DICHLOROMETH
8378 DICHLOROMETH
3524 Records
Bottle #:
8403
Chemical:
Sulfuric Acid
Active
Received:
4/4/2016
Synonyms:
Formula:
h2so4
Location:
Inorganics
Vendor:
J.T Baker
J. T Baker
Phillipsburg, NJ 08865
TEL: (908) 859-2151
Fax:
Merck Index:
Add to Reagents database
Expires:
4/21/2018
Status:
Opened
CAS #:
7664-93-9
Formula Wt:
98.08
Lot #:
122126
Catalog #
9681-05
Conc/Purity:
Amount:
2.5
Units:
L
Notes:
1 of 1. Received on 4/4/16; Opened: 4/21/

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Extraction Fluid 1	~~R160323D~~ R160323D			
$MgCl_2$	R160324A	CINV-151117D	40 g	100 mL
5N HNO_3	R160324B	~~#8386~~ #8386	138 mL	500 mL
ELUENT Cr^{6+}	R160329C	CINV-160219F / CINV-160125C	66 g / 13 mL	2000
POST COLUMN REAGENT Cr^{6}	R160328A	CINV-160125H / CINV-151130E / CINV-160219B	0.5 g / 28 mL / 100 mL	1000
BUFFER	R160328B	CINV-160219F / CINV-160125C	66 g / 130 mL	2000
ELUENT Cr^{6+}	R160329A	CINV-160219F / CINV-160125C	66 g / 13 mL	2000
ELUENT Cr^{6+}	R160331A	CINV-160219F / CINV-160125C	66 g / 13 mL	2000
BUFFER	R160331B	CINV-160219F / CINV-160125C	33 g / 65 mL	1000
POST COLUMN REAGENT Cr^{6+}	R160401A	CINV-160125H / CINV-151130E / CINV-160219B	0.5 g / 28 mL / 100 mL	1000
ELUENT Cr^{6+}	R160401B	CINV-160219F / CINV-160125C	66 g / 13 mL	2000
10% Ammonium Persulfate ; 5% H_3PO_4	R160404A	CINV-160219D / CINV-150124C	100 g / 50 mL	1000
20% H_3PO_4	L B	CINV-150124C	100 mL	500
TCLP Fluid 1	R160328C	7878 / 7606	128 g / 11.4	2000
STLC Fluid	R160328D	8266 / R160311C	160 / 325 mL	3500
4N NaOH	R160311C	7878	40 g	1000
6N NaOH	R160404C	7878	24 g	100
Digestion Solution Cr^{6+}	R160404D	7878 / CINV-160125B	40 g / 60 g	2000
Eluent Cr^{6+}	R160404E	CINV-160219F / CINV-160125C	66 g / 13 mL	2000
POST COLUMN REAGENT Cr^{6+}	R160405A	CINV-160125H / CINV-151130E / CINV-160219B	0.5 g / 28 mL / 100 mL	~~2000~~ 1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1					pH = 4.89	MEM
	—	3/24/16	3/24/17	12/28/18		JAS
	5N	3/24/16	3/24/17	3/21/18		JAS
	—	3/24/16	3/24/17	3/24/17 2/24/18	IC-01	JAS
5	—	3/28/16	4/2/16	3/10/19; 3/16/18; 2/20/18	IC-01, IC-07	JAS
	—	3/28/16	4/28/17	3/24/19; 2/24/18		JAS
	—	3/29/16	3/29/17	3/24/19; 3/24/18	IC-01	JAS
	—	3/31/16	3/31/17	3/24/19; 3/24/18	IC-07	JAS
	—	3/31/16	4/28/17	3/24/19; 3/24/18		JAS
10	—	4/1/16	4/6/18	3/10/19; 3/16/18; 2/20/18	IC-01, IC-06 & 07	↓
	—	4/1/16	4/1/17	3/24/19; 3/24/18	IC-01, IC	↓
	10%, 5%	04/04/16	04/04/17	03/14/19 10/14/17		PEM
	30%	1	1	10/14/17		1
	—	3/28/16	3/28/17	2/1/19, 6/3/18 17	pH 4.92 late entry	Am
15	—	3/28/16	3/28/17	3/22/18, 3/11/17	pH 5.00 late entry	Am
	4N	3/11/16	3/11/17	2/1/19	late entry	Am
	6N	4/4/16	4/4/17	8/24/17		JAS
	—	4/4/16	4/4/17	8/24/17; 3/22/19		JAS
	-	4/4/16	4/4/17	3/24/19; 2/24/18	IC-06 & IC-07	JAS
20	—	4/5/16	4/10/17	3/10/19; 2/16/18; 2/20/18	IC-01	JAS

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)	
POST COLUMN REAGENT Grt	R160405B	CINV-150125H / CINV-157130E CINV-160219B	0.1g / 28 mL / 100mL	1000	1
2% CuSO4	R160406A	CIM-140211D	2g	100	
R1 Buffer	B	R160406A, CIM-150127A CIM-140224A, CIM-160125C	2.5mL, 85g 0.1g, 14mL	1000	
Reducing Rgt.	C	CIM-150323A / CINV-160405A CIM-150324C	0.2g, 4.0g, 7mL	100	
ASCORBIC ACID SOLUTION	R160406D	CIM-141126A, # 830	6g / 2mL	100	5
ELUENT Grt	R160406E	CINV-160219F / CINV-160406E	66g / 13mL	2000	
ELUENT Grt	R160407A	CINV-160219F/G / CINV-160406E	66g / 13mL	2000	
BUFFER	R160407B	CINV-160219G / CINV-160406E	66g / 130mL	2000	
POST COLUMN REAGENT Grt	R160407C	CINV-150125H / CINV-157130E CINV-160219B	0.5g / 28mL / 100mL	1000	
ELUENT Grt	R160408A	CINV-160219G / CINV-160406E	66g / 13mL	2000	10
DIGESTION SOLUTION	R160408B	# 7873 / CINV-160925B	40g / 60g	2000	
POST COLUMN REAGENT Grt	R160411A	CINV-150125H / CINV-157130E CINV-160219B	0.5g / 28mL / 100mL	1000	
ELUENT Grt	R160411B	CINV-160219G / CINV-160406E	66g / 13mL	2000	
4N NaOH	R160411C	7878	160g	1000	
1N NaOH	R160411D	7878	40g	1000	15
TCLP 1	R160411E	~~7878~~ AM R160411D / 7606	11.4 - 128.6	2000	
TCLP 1	R160411F	R160411D / 7606	11.4 - 128.6	2000	
TCLP 1	R160411G	R160411D / 7606	11.4 - 128.6	2000	
STOCK ELUENT (ANIONS)	R160411H	CINV-160125B / CINV-150601A	95.39 / 23.524 g	2000	
1N NaOH	R160411I	7878	40g	1000	20

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
–	4/5/16	4/10/17	3/10/16; 3/16/18; 2/20/18	IC-06 & IC-07	JAS
2%	4/6/16	5/6/16	5/20/17		REB
–	4/6/16	5/6/16	5/6/16; 5/22/18 5/20/17, 2/24/18		↓
–	↓	↓	5/22/18; 4/6/19 10/14/17		↓
–	4/6/16	4/20/16	8/26/18, 03/22/18		2
–	4/6/16	4/6/17	3/24/19; 4/6/18	IC-01	REB
–	4/7/16	4/7/17	3/24/19; 4/7/19; 4/6/18	IC-06 & IC-07	JAS
–	4/7/16	5/7/16	4/7/19; 4/6/18		↓
–	4/7/16	4/12/16	3/10/19; 3/16/18; 2/20/18	IC-06 & IC-07	JAS
–	4/8/16	4/8/17	4/7/19; 4/6/18	IC-06 & IC-07	JAS
–	4/8/16	4/8/17	8/24/17; 3/22/19		JAS
–	4/11/16	4/16/17	3/10/19; 3/16/18; 2/20/18	IC-01	JAS
–	4/11/16	4/11/17	4/7/19; 4/6/18	IC-01	↓
–	4/11/16	4/11/17	2/1/19		[illegible]
–	4/11/16	4/11/17	2/1/19		[illegible]
	4/11/16	4/11/17	4/11/17 / 6/3/18	pH 4.91	[illegible]
	4/11/16	4/11/17	4/11/17 / 6/3/18	pH 4.89	[illegible]
	4/11/16	4/11/17	4/11/17 / 6/3/18	pH 4.90	[illegible]
–	4/11/16	4/11/17	3/22/19; 6/9/18		2
–	4/11/16	4/11/17	2/1/19		AH

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

ASSET LABORATORIES

CALIFORNIA
11060 Artesia Blvd., Ste C Cerritos CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)	
TCLP #1	R160411J	R160411I / 7878	11.4 - 128.6	2000	1
↓	R160411K	↓	↓	↓	
↓	L	↓	↓	↓	
TCLP FLUID #1	R160411M	R160411I / 7878	64.3mL, 5.7mL	1000	
POST COLUMN REAGENT Grt	R160412A	UNV-160125H / UNV-151130E UNV-160219B	0.5 g / 100 mL / 28mL	1000	5
ELUENT Grt	R160412B	UNV-160219G / UNV-160406E	66 g / 13 mL	2000	
ELUENT Grt	R160412C	UNV-160219G / UNV-160406E	66g / 13mL	2000	
ELUENT Grt	R160413A	UNV-160219G / UNV-160406E	66g / 13mL	2000	
TCLP 1	R160413B	7606 / 160411D	11.4 / 128.6	2000	
TCLP 1	R160413C	7606 / 160411D	11.4 / 128.6	2000	10
SRC	R160413D	8266 / R160411C	160g / 325mL	3500	
POST COLUMN REAGENT Grt	R160414A	UNV-160125H / UNV-151130E UNV-160219B	0.5g / 100mL / 28mL	1000	
ELUENT Grt	R160414B	UNV-160219G / UNV-160406E	66g / 13mL	2000	
ELUENT Grt	R160414C	UNV-160219G8H / UNV-160406E	66g / 13mL	2000	
1,5-Diphenylcarbazide solution	R160415A	UNV-150106G / #8301	0.25g / 50 mL	50mL	15
BUFFER Grt	R160416A	UNV-160219H / UNV-160406E	3.3g / 6.5 mL	100 mL	
POST COLUMN REAGENT Grt	R160418A	UNV-160125H / UNV-151130E UNV-160219B	0.5g / 28 mL / 100 mL	1000 mL	
ELUENT Grt	R160418B	UNV-160219H / UNV-160406E	66g / 13 mL	2000	
POST COLUMN REAGENT Grt	R160419B	UNV-160125H / UNV-151130E UNV-160219B	0.5g / 28mL / 100mL	1000	
5% HNO_3	R160419A	#8401	138 mL	3000 mL	20

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1		4/11/16	4/11/17	4/11/17 // 6-3-08	pH 4.88	AH
		↓	↓	↓	pH 4.93	AH
		↓	↓	↓	pH 4.94	AH
	—	4/11/16	4/11/17	4/11/17 / 6-3-08	pH. 4.90	REB
5	—	4/12/16	4/17/16	3/10/19; 3/16/18; 2/20/18	IC-06 & IC-07	JAS
	—	4/12/16	4/12/17	4/7/19; 4/6/18	IC-06 & IC-07	JAS
	—	4/12/16	4/12/17	4/7/19; 4/6/18	IC-01	JAS
	—	4/13/16	4/13/17	4/7/19; 4/6/18	IC-06 & IC-07	JAS
	—	4/13/16	4/13/17	6/3/18 / 2/1/19	pH 4.89	
10	—	4/13/16	4/13/17	6/3/18 / 2/1/19	pH 4.02	
	—	4/13/16	4/13/17	~~2/1/19~~	pH . 500	
	—	4/14/16	4/19/17	2/10/19; 3/16/18; 2/20/18	IC-06 & IC-07	JAS
	—	↓	4/14/17	4/7/19; 4/6/18	IC-06 & IC-07	↓
	—	↓	4/14/17	4/7/19; 4/14/19; 4/6/18	IC-01	↓
15	—	4/15/16	4/15/16	3/12/18 ; 3/30/17		R
	—	4/16/16	4/16/17	4/14/19; 4/6/18		REB
	—	4/18/16	~~4/18~~ 4/23/16	3/10/19; 3/16/18; 2/20/18	IC-06 & IC-07	JAS
	-	4/18/16	4/18/17	4/19/19 ; 4/~~18~~/18	IC-06 & IC-07	J
	—	4/16/16	4/21/17	3/10/19; 3/16/18; 2/20/18	IC-01	REB
20	SN	4/19/16	4/19/17	4/18/18		JAS

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
10% Ammonium persulfate, 5% H_3PO_4	R160419 B	CIM-160219D / CIM-150924C	100g / 50mL	1000
20% H_3PO_4	1 C	CIM-150924C	100mL	500
ELUENT Cr6+	R160420A	CINV-160219H / CINV-160406E	66g / 13mL	2000
POST COLUMN REAGENT Cr6+	R160420B	CINV-160125H / CINV-151130E / CINV-160219B	0.5g / 28mL / 100mL	1000
STLC	R160420C	8266 / R160411C	160g / 200g	3500
ELUENT Cr6+	R160421A	CINV-160219H / CINV-160406E	66g / 13mL	2000
ELUENT Cr6+	R160421B	CINV-160219H / CINV-160406E	66g / 13mL	2000
POST COLUMN REAGENT Cr6+	R160421C	CINV-160125H / #8403 CINV-160219B	0.5g / 28mL / 100mL	1000
POST COLUMN REAGENT Cr6+	R160422A	CINV-160125H / #8403 CINV-160219B	0.5g / 28mL / 100mL	1000
ELUENT Cr6+	R160422B	CINV-160219H / CINV-160406E	66g / 13mL	2000
TCLP 1	R160422C	7606 / 160411D	11.4 / 128.6	2000
TCLP 1	R160422D	7606 / 160411D	11.4 / 128.6	2000
TCLP 1	R160422E	7606 / 160422F	11.4 / 128.6	2000
1N NaOH	R160422F	7878	40g	1000
TCLP FLUID #1	R160425A			
5% KMnO4	R160425B	150718D	50g	1000
5% Potassium Persulfate	R160425C	8030	25g	500
NaCl Hydroxylamine Chloride	R160425D	8283 / 8263	60g / 60g	500
STLC FLUID	R160426E	8266 /	160g /	3500
4.0 NaOH	R160425F	7878	160g	1000

Reagent Preparation

	Preparation		Exp Date				
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	10%; 5%	4/14/16	4/19/17	07/19; 10/14/17		
	20%	1	1	10/14/17		1
	–	4/20/16	4/20/17	4/19/19; 4/6/18	IC-06 & 07	JAS
	–	4/20/16	4/25/16	3/10/19; 3/16/18; 2/20/18	IC-06 & 07	JAS
5	–	4/20/16	4/20/17	3/22/18 / 4/11/17	pH 5.01	Amy
	–	4/21/16	4/21/17	4/14/19; 4/6/18	IC-06 & 07	JAS
	–	4/21/16	4/21/17	4/14/19; 4/6/18	IC-01	↓
	–	4/21/16	4/26/17	3/10/19; 4/2/18; 2/20/18	IC-06 & IC-07	↓
	–	4/22/16	4/27/17	3/10/19; 4/21/18; 2/20/18	IC-01	JAS
10	–	4/22/16	4/22/17	4/14/19; 4/6/18	IC-06 & IC-07	↓
	–	4/22/16	4/22/17	6/3/18; 2/6/19	pH 4.96	↓
	–	4/22/16	4/22/17	6/3/18 / 2/1/19	pH 4.98	↓
	–	4/22/16	4/22/17	6/3/18 / 4/22/17	pH 4.90	↓
	–	4/22/16	4/22/17	2/1/19	~~pH 5.01~~	↓
15					pH 4.92	↓
	–	4/25/16	4/25/17	2/24/18		↓
	–	4/25/16	↓	2/24/18		↓
	–	↓	↓	4/25/19 2/4/19		↓
	–	↓	↓	3/22/18	pH 5.00	↓
20	–	↓	↓	2/1/19		↓

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)	
POST COLUMN REAGENT Grt	R160425G	CINV-160125H | #8403 CINV-160219B	0.5 g | 28 mL | 100mL	1000	1
Buffer Grt	R160426A	CINV-160219H | CINV-160406E	33 g | 65 mL	1000	
1:1 HNO3	R160426B	8887	1L	2L	
11N H_2SO_4	R160426C	#8403	31 mL	100 mL	
ASCORBIC ACID SOLUTION	1 D	CINV-141126A ; #8302	6g | 2mL	100	5
ELUENT Grt	R160426E	CINV-160219H | CINV-160406E	66g | 13 mL	2000	
ELUENT Grt	R160426F	CINV-160219H | CINV-160406A | CINV-160406E	66g | 13mL	2000	
BUFFER Grt	R160426G	CINV-160406A | CINV-160406E	33 g | 65 mL	1000	
POST COLUMN REAGENT Grt	R160427A	CINV-160125H | #8403 CINV-160219B	0.5 g | 28 mL | 100mL	1000	
ELUENT Grt	R160427B	CINV-160406A | CINV-160406E	66g | 13 mL	2000	10
TCP 1	R160428A	7605 / 160422F	16.4 / 128.6	2000	
POST COLUMN REAGENT Grt	R160428B	CINV-160125H | 8403 CINV-160219B	0.5 g | 28mL | 100mL	1000	
ELUENT Grt	R160429A	CINV-160406A | CINV-160406E	66g | 13 mL	2000	
POST COLUMN REAGENT Grt	R160429B	CINV-160125H | 8403 CINV-160219B	0.5 g | 28mL | 100mL	1000	
BUFFER Grt	~~R160501B~~ R160501A	CINV-160406A | CINV-160406E	3.3 g | 6.5 mL	100	15
ELUENT Grt	R160502A	CINV-160406A | CINV-160406E	66g | 13mL	2000	
50% v/v H_2SO_4	R160502B	CINV-121217D	500 mL	1000	
BUFFER Grt	R160503C	CINV-160406A | CINV-160406E	16.5 g | 32.5 mL	5000	
ELUENT Grt	R160503A	CINV-160406A | CINV-160406E	66g | 13mL	2000	
11% Tinchloride in 3% HCL	R160503B	8282 / 8405	11g / 30g	1000	20

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
—	4/25/16	4/30/17	3/10/19; 4/21/18; 2/20/18	IC-06 & IC-07	JAS
~~1:1~~	~~—~~ 4/26/16	5/26/16	4/14/19; 4/6/18		REB
1:1	4/26/16	~~3~~ 4/26/17	3/23/18		PG
1:1	4/26/16	4/26/17	4/21/18		2
—	↓	5/10/16	8/26/18; 4/13/17		↓
—	4/26/16	4/26/17	4/14/19; 4/6/18	IC-06 & 07	JAS
—	4/26/16	4/26/17	4/14/19; 4/26/19; 4/6/18	IC-01	↓
—	4/26/16	~~4/26/16~~ 5/26/16	4/26/19; 4/6/18		↓
—	4/27/16	5/2/16	3/10/19; 4/21/18; 2/20/18	IC-06 & IC-07	JAS
—	4/27/16	4/27/17	4/26/19; 4/6/18	IC-06 & IC-07	↓
—	4/28/16	4/28/17	4/22/17 / 6/3/18	pH. 4.98	
—	4/28/16	5/3/16	3/10/19; 4/21/18; 2/20/18	IC-01	JAS
—	4/29/16	4/29/17	4/26/19; 4/6/18	IC-06 & IC-07	JAS
—	4/29/16	5/4/16	3/10/19; 4/21/18; 2/20/18	IC-06 & IC-07	JAS
—	5/1/16	~~5/1/17~~ 6/1/16	4/26/19; 5/1/18		JAS
—	5/2/16	5/2/17	4/26/19; 4/6/18	IC-06 & IC-07	JAS
5/2 ~~50/50~~ 50% v/v	5/2/16	5/2/~~15~~ 17 5/2	08/14/17		[illegible]
—	5/2/16	6/2/16	4/26/19; 5/1/18		JAS
—	5/3/16	5/3/17	4/26/19; 4/6/18	IC-06 & IC-07	JAS
—	5/3/16	5/3/17			[illegible]

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
5% KMnO4	R160503C	150715D	50g	1000
NaCl Hydroxylamine HCL	R160503D	8283 / 160309B	60g / 60g	500
MLT @ 3500µs/cm	R160503E	IWST-160503A	14.5mL	964.5mL
POST COLUMN REAGENT	R1600504A	CINV-160125H / 8403 CINV-160219B	0.5g / 28mL / 100mL	1000
POST COLUMN REAGENT	R160504B	CINV-160125H / 8403 CINV-160219B	0.5g / 28mL / 100mL	1000
ELUENT Grt	R160504C	CINV-160406A / CINV-160406F	66g / 13mL	2000
TCLP 1	R160504D	7606 / 160422F	11.4 / 128.6	2000
TCLP 1	R160504E	7606 / 160422F	11.4 / 128.6	2000
ELUENT Grt	R160505A	CINV-160406A / CINV-160406F	66g / 13mL	2000
10% Ammonium persulfate 5% H_2PO_4	R160505B	CINV-160219D / CINV-150924C	100g / 50mL	1000
5% KMNO4	R160506A	150715D	50g	1000
11% Tin Chloride in 3% HCL	R160506B	8282 / 8405	11g / 30g	1000
"	R160506C	8282 / 8405	11g / 30g	1000
2% CuSO4	R160507A	CINV-140211D	2g	100
R_1 Buffer	B	R160507A, CINV-150127A CINV-140224A, CINV-160125C	2.5mL, 85g 0.1g, 14mL	1000
R_2 COLORING Rgt	C	CINV-150323A / CINV-160405A CINV-150924C	0.2g / 4g / 17mL	100
ELUENT Grt	R160509A	CINV/160406A · CINV-160406B / CINV-160406F	66g / 13mL	2000
POST COLUMN REAGENT Grt	R160509B	CINV-160125H / 8403 CINV-160219B	0.5g / 28mL / 100mL	1000
ELUENT Grt	R160510A	CINV160406B / CINV-160406F	66g / 13mL	2000
IN NaOH	R160510B	7878	40g	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	—	5/3/16	5/3/17			
	—	5/3/16	5/3/17	4/25/19 / 5/3/19		
	—	5/3/16	5/3/17	5/3/17		
	—	5/4/16	5/9/16	3/10/19; 4/21/18; 2/20/18	IC-06 & IC-07	
5	—	5/4/16	5/9/16	↓		
	—	5/4/16	5/4/17	4/26/19; 5/1/18	IC-01, IC-06 & IC-07	
	—	5/4/16	5/4/17	4/22/17 / 6/3/18	IC-01	
	—	5/4/16	5/4/17	4/22/17-6/8/18	4.96	
	—	5/5/16	5/5/17	4/26/19; 5/1/18	4.96	
10	6%, 5%	5/5/16	5/5/17	07/19/19; 10/4/17	IC-06 & IC-07	
	—	5/6/16	5/6/17			
	—	5/6/16	5/6/17			
	—	5/6/16	5/6/17			
	2%	5/17/16	5/17/16	5/20/17		
15	—	↓	↓	5/20/19; 5/22/18 5/26/18		
	—	↓	↓	5/22/18; 4/6/19; 10/19/17		
	—	5/9/16	5/9/17	4/26/19; 5/1/18; 5/1/18	IC-06 & IC-07	
	—	5/9/16	5/14/16	3/10/19; 4/21/18; 2/20/18	IC-06 & IC-07	
	—	5/10/16	5/10/17	5/9/19; 5/1/18	IC-06 & IC-07	
20	—	5/10/16	5/10/17			

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
TCP 1	R160510 C	7606 / R160510B	11.4g / 128.6	2000
11% Tin Chloride 1% HCL	R160510D	8382 / 8408	11g / 30ml	1000
ELUENT Gut	R160510E	CINV-160406B / CINV-160406F	66g / 13mL	2000
POST COLUMN REAGENT Gut	R160510F	CINV-160125H / 8403 CINV-160406G	0.5g / 28mL / 100mL	1000
NaCl Hydroxylamine HCL	R160510A	8283 / 160309B	60g / 60g	500
ELUENT Gut	R160512A	CINV-160406B / CINV-160406F	66g / 13mL	2000
POST COLUMN REAGENT	R160512B	CINV-160125H / 8403 CINV-160406G	0.5g / 28mL / 100mL	1000
BUFFER Gut	R160512C	CINV-160406B / CINV-160406F	3.3g / 6.5mL	100
$MgCl_2$ sol'n	R160512D	CINV-151117D	40g	100
10% H_2SO_4	R160512E	#8403	10mL	100
1,5-Diphenylcarbazide sol'n	1 F	CINV-150106G / #8304	0.25g / 50mL	50
ASCORBIC ACID SOLUTION	R160516A			
ELUENT Gut	R160517A	CINV-160406B / CINV-160406F	66g / 13mL	2000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	—	5/10/16	5/10/17	6/3/18 / 5/10/17	pH 4.98	
	—	5/10/16	5/10/17			
	—	5/10/16	5/10/17	5/9/19; 5/1/18	IC-06 & IC-07	JMS
	—	5/10/16	5/15/16	3/10/19; 4/21/18; 5/10/18	IC-06 & IC-07	↓
5	—	5/11/16	5/11/17	4/25/19 / 5/3/19		
	—	5/12/16	5/12/17	5/9/19; 5/1/18	IC-01	JMS
	—	5/12/16	5/17/16	3/10/19; 4/21/18; 5/10/18	IC-01, IC-06 & IC-07	JMS
	—	5/12/16	~~6~~/12/16	5/9/19; 5/1/18		JMS
	—	5/12/16	5/12/17	~~5/16~~ 12/28/18		JMS
10	—	5/12/16	5/12/17	4/21/18		L
	—	L	5/12/16	3/12/18; 5/11/17		L
	—	5/17/16	5/17/17	5/9/19; 5/1/18	IC-06 & 07	JMS
15						
20						

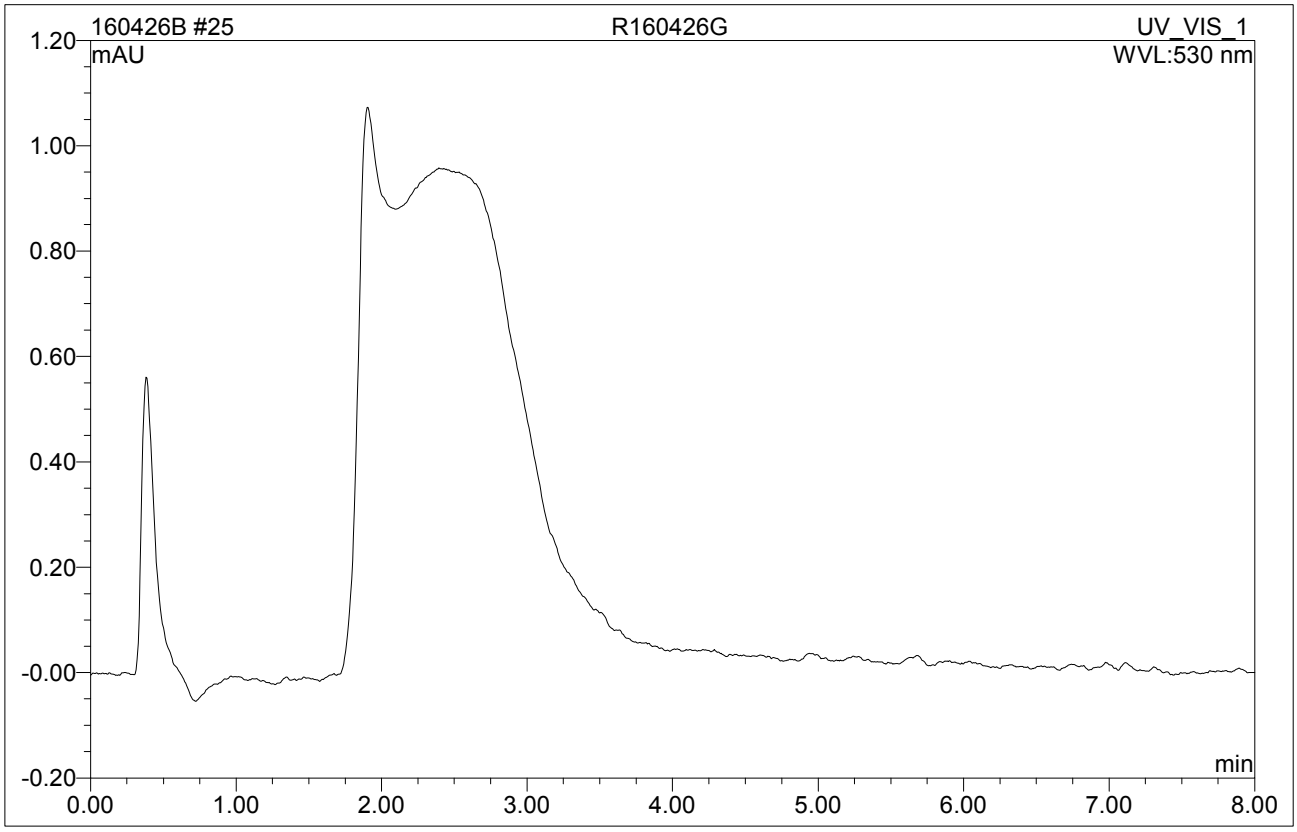
* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

25 R160426G

BUFFER

Sample Name:	**R160426G**	*Injection Volume:*	**1000.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**530**
Control Program:	**CR6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**CR6 METHOD_04262016**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/26/2016 17:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108493 **Analyst:** REB

ASSET #: N019628 **Date Analyzed:** 5/15/2016 , 5/17/16

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

Matrix spike(MS) failed in 05/15/16 run, high bias. However, reanalysis was done and passed criteria.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Reb 05/18/2016 Date: —

2nd Level Reviewer Nancy 5/20/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N019628-001C**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 1.1089*1

= 1.1089mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 1.1

Rab 05/18/2016

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

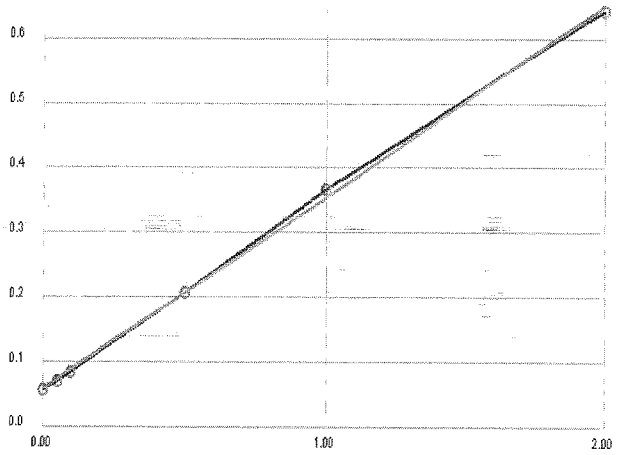
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2956x + 0.0582
Correlation	.999499

Calibrant	Energy	Set	Conc
1	0.0564	0.0000	-0.0060
2	0.0708	0.0500	0.0427
3	0.0830	0.1000	0.0839
4	0.2082	0.5000	0.5075
5	0.3673	1.0000	1.0457
6	0.6424	2.0000	1.9763



Notes:

2% CuSO4 - R160507A
R1 Buffer- R160507B
R2 Coloring Rgt. - R160507C

1° std- ISST-160211J
2° std- ISST-150730E

Reb 05/18/2016

208

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

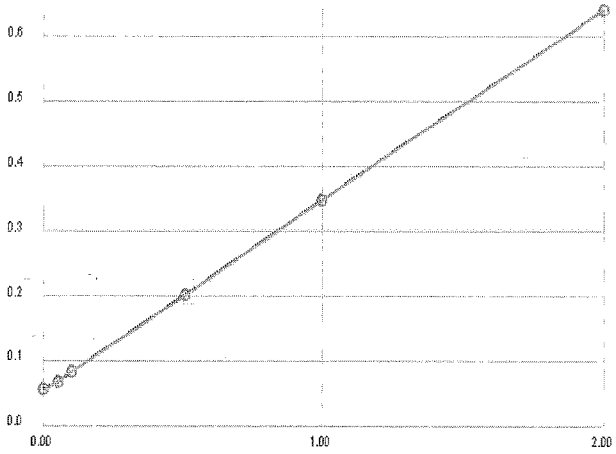
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2936x + 0.0545
Correlation	.999986

Calibrant	Energy	Set	Conc
1	0.0564	0.0000	0.0065
2	0.0673	0.0500	0.0436
3	0.0836	0.1000	0.0991
4	0.2016	0.5000	0.5011
5	0.3479	1.0000	0.9994
6	0.6417	2.0000	2.0002

Notes:

Reb 05/18/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **ICV**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2328759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.500	0.050	0.5000	0	99.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCV**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.517	0.050	0.5000	0	103	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCV**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.7	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCV**	Batch ID: **R108493**	TestNo: **SM4500-NO3**		Analysis Date: **5/15/2016**	SeqNo: **2329108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **ICV**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2333391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.7	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCV**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2333393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.518	0.050	0.5000	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:		RunNo:	**108493**
Client ID:	**ICB**	Batch ID:	**R108493**	TestNo:	**SM4500-NO3**			Analysis Date:	**5/15/2016**	SeqNo:	**2328760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	**CCB-1**	SampType:	**CCB**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:		RunNo:	**108493**
Client ID:	**CCB**	Batch ID:	**R108493**	TestNo:	**SM4500-NO3**			Analysis Date:	**5/15/2016**	SeqNo:	**2329083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:		RunNo:	**108493**
Client ID:	**CCB**	Batch ID:	**R108493**	TestNo:	**SM4500-NO3**			Analysis Date:	**5/15/2016**	SeqNo:	**2329098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**4500N03F_W**	Units:	**mg/L**	Prep Date:		RunNo:	**108493**
Client ID:	**CCB**	Batch ID:	**R108493**	TestNo:	**SM4500-NO3**			Analysis Date:	**5/15/2016**	SeqNo:	**2329109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **ICB**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2333392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108493**
Client ID: **CCB**	Batch ID: **R108546**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2016**	SeqNo: **2333394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
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702-307-2659
702-307-2691
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Time start: 05-15-2016 15:50
Time end: 05-15-2016 18:42

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:02:22	0.0153		0.0627
2	<BLANK>	18:03:22	-0.0030		0.0573
3	<CAL1>	18:04:16	-0.0060	[0]	0.0564
4	<CAL2>	18:05:18	0.0427	[0.05]	0.0708
5	<CAL3>	18:06:13	0.0839	[0.1]	0.0830
6	<CAL4>	18:07:07	0.5075	[0.5]	0.2082
7	<CAL5>	18:08:09	1.0457	[1]	0.3673
8	<CAL6>	18:09:04	1.9763	[2]	0.6424
9	,BLANK,BLANK,1,	18:10:00	0.0180		0.0635
10	,ICV,ICV,1,	18:11:00	0.4997		0.2059
11	,ICB,ICB,1,	18:11:55	0.0000		0.0582
12	,MB-H2O,MBLK,1,	18:12:51	-0.0172		0.0531
13	,LCS-H2O,LCS,1,	18:13:51	0.4956		0.2047
14	,N019606-001C,SAMP,20,	18:14:46	0.5254		0.2135
15	,N019606-001CDUP,DUP,20,	18:15:42	0.5332		0.2158
16	,N019606-001CMS,MS,20,	18:16:43	1.1708		0.4043
17	,N019606-001CMSD,MSD,20,	18:17:37	1.0944		0.3817
18	,N019606-002C,SAMP,10,	18:18:39	0.6025		0.2363
19	,N019606-003C,SAMP,5,	18:19:35	1.2253		0.4204
20	,N019606-004C,SAMP,1,	18:20:29	0.0295		0.0669
21	,BLANK,BLANK,1	18:21:30	-0.0104		0.0551
22	,CCV-1,CCV,1,	18:22:25	0.5173		0.2111
23	,CCB-1,CCB,1,	18:23:21	-0.0115		0.0548
24	,N019606-005C,SAMP,1,	18:24:21	0.4131		0.1803
25	,N019606-006C,SAMP,1,	18:25:17	0.4388		0.1879
26	,N019606-007C,SAMP,1,	18:26:18	0.0285		0.0666

NR
NR

Reb 05/18/2016

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N019606-008C,SAMP,1,	18:27:00	0.0159		0.0629
28	,N019606-009C,SAMP,1,	18:27:50	0.5755		0.2283
29	,N019606-010C,SAMP,50,	18:28:33	0.5190		0.2116
30	,N019606-011C,SAMP,50,	18:29:15	0.5268		0.2139
31	,N019606-012C,SAMP,100,	18:30:05	0.6688		0.2559
32	,N019606-013C,SAMP,5,	18:30:47	0.4019		0.1770
33	,BLANK,BLANK,1	18:31:30	-0.0121		0.0546
34	,CCV-2,CCV,1,	18:32:18	0.4784		0.1996
35	,CCB-2,CCB,1,	18:33:01	-0.0148		0.0538
36	,N019606-014C,SAMP,1,	18:33:51	0.2416		0.1296
37	,N019628-001C,SAMP,1,	18:34:33	1.1089		0.3860
38	,N019628-002C,SAMP,5,	18:35:16	0.5376		0.2171
39	,N019628-003C,SAMP,1,	18:36:04	0.0011		0.0585
40	,N019628-004C,SAMP,10,	18:36:48	0.4530		0.1921
41	,N019628-005C,SAMP,20,	18:37:30	0.6276		0.2437
42	,N019628-006C,SAMP,1,	18:38:13	0.0126		0.0619
43	,BLANK,BLANK,1	18:39:01	-0.0233		0.0513
44	,CCV-3,CCV,1,	18:39:44	0.4740		0.1983
45	,CCB-3,CCB,1,	18:40:28	-0.0172		0.0531

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Time start: 05-17-2016 15:09
Time end: 05-17-2016 17:36

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:02:56	0.0205		0.0605
2	<BLANK>	17:03:57	0.0143		0.0587
3	<CAL1>	17:04:51	0.0065	[0]	0.0564
4	<CAL2>	17:05:52	0.0436	[0.05]	0.0673
5	<CAL3>	17:06:48	0.0991	[0.1]	0.0836
6	<CAL4>	17:07:49	0.5011	[0.5]	0.2016
7	<CAL5>	17:08:43	0.9994	[1]	0.3479
8	<CAL6>	17:09:39	2.0002	[2]	0.6417
9	,BLANK,BLANK,1,	17:10:34	0.0269		0.0624
10	,ICV,ICV,1,	17:11:34	0.4837		0.1965
11	,ICB,ICB,1,	17:12:29	0.0102		0.0575
12	,MB-H2O,MBLK,1,	17:13:31	-0.0061		0.0527
13	,LCS-H2O,LCS,1,	17:14:26	0.4861		0.1972
14	,N019606-001C,SAMP,20,	17:15:20	0.5525		0.2167
15	,N019606-001CDUP,DUP,20,	17:16:22	0.5297		0.2100
16	,N019606-001CMS,MS,20,	17:17:17	1.0822		0.3722
17	,N019606-001CMSD,MSD,20,	17:18:17	1.0304		0.3570
18	,N019607-006C,SAMP,1,	17:19:13	0.0293		0.0631
19	,N019607-0010C,SAMP,5,	17:20:08	0.3131		0.1464
20	,N019743-003B,SAMP,1,	17:20:56	1.0498		0.3627
21	,BLANK,BLANK,1	17:21:40	0.0171		0.0595
22	,CCV-1,CCV,1,	17:22:29	0.5178		0.2065
23	,CCB-1,CCB,1,	17:23:11	0.0092		0.0572
24	,N019744-003C,SAMP,1,	17:23:54	0.0750		0.0765
25	,N019744-004C,SAMP,1,	17:24:42	0.0899		0.0809
26	,N019744-005C,SAMP,1,	17:25:26	0.0515		0.0696

reported MS/MSD only

Reb 05/18/2016

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N019744-002B,SAMP,5,	17:26:14	0.0763		0.0769
28	,N019744-007C,SAMP,5,	17:26:57	0.3573		0.1594
29	,N019744-008C,SAMP,5,	17:27:40	1.1193		0.3831
30	,N019748-001E,SAMP,1,	17:28:28	0.6442		0.2436
31	,N019744-006C,SAMP,5,	17:29:12	0.1070		0.0859
32	,BLANK,BLANK,1	17:29:54	0.0096		0.0573
33	,BLANK,BLANK,1	17:30:43	-0.0051		0.0530
34	,CCV-2,CCV,1,	17:31:25	0.2977		0.1419
35	,CCV-2,CCV,1,	17:32:08	0.3039		0.1437
36	,CCV-2,CCV,1,	17:32:58	0.3175		0.1477
37	,CCB-2,CCB,1,	17:33:40	-0.0075		0.0523
38	,CCB-2,CCB,1,	17:34:23	-0.0129		0.0507

Reb 05/18/2016

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/15/2016
Time Analyzed: 15:50 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R160507B
Color reagent: R160507C
2% Copper Sulfate: R160507A
Ammonium Hydroxide: CINV-160406F

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N019606-001C		8.18						
2)	N019606-002C		7.53						
3)	N019606-003C		8.39						
4)	N019606-004C		6.65						
5)	N019606-005C		7.80						
6)	N019606-006C		8.08						
7)	N019606-007C		7.85						
8)	N019606-008C		7.76						
9)	N019606-009C		8.04						
10)	N019606-010C		7.74						
11)	N019606-011C		7.50						
12)	N019606-012C		7.59						
13)	N019606-013C		8.23						
14)	N019606-014C		7.88						
15)	N019628-001C		6.97						
16)	N019628-002C		7.33						
17)	N019628-003C		6.53						
18)	N019628-004C		8.15						
19)	N019628-005C		8.71						
20)	N019628-006C		8.23						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

Reb 05/18/2016

STANDARDS LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.269
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Inorganics Stock Standard Logbook

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
5/29/15	Hexadecane & Stearic Acid Std	ISST150529A	4mg/mL	ACCU STANDARD	21410420	5/29/15	6/2/15	11/10/24	LSR
		B					6/25/15		
		C					7/13/15		
		D					7/24/15		
		E					8/31/15		
7/9/15	Perchlorate	ISST150709A	100 mg/L	ERA	110415	7/9/15		5/17	2
7/30/15	Fluoride, 1000 ppm	ISST150730A	1000 mg/L	ERA	121214	7/30/15	8/14/15	12/16	2
	Chloride, 1000 ppm	B			260115			1/17	
	Nitrite as N, 1000 ppm	C			100115			1/17	
	Bromide, 1000 ppm	D			170614			1/17	
	Nitrate as N, 1000 ppm	E			270415			4/17	
	Phosphate as P, 1000 ppm	F			280415			4/17	
	Sulfate, 1000 ppm	G			060415			4/17	
8/4/15	KHP 500ppm (TOC STD P)	ISST150804A	500mg/L	ABSOLUTE	061015	8/4/15	8/5/15	06/10/18	MEB
8/11/15	Carbon as TOC (TOC STD 1°)	ISST150811A MEB	100mg/mL	High-purity	1409004	8/11/15	8/11/15	2/6/17	MO
8/14/15	TOC Std 1° (KHP)	ISST-150814A	1000mg/L	CPI	15-1-1067 15-1-1006 MEB 8/14/15	8/14/15		02/12/2017	MEB
9/14/15	Hexadecane & Stearic Acid Std	ISST150914A	4mg/mL	ACCU STANDARD	215041058	9/14/15	9/16/15	4/8/25	LSR
		B					9/21/15		
		C					10/30/15		

Advanced Technology Laboratories-Las Vegas
Logbook #1

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	Initials
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	
2/11/16	Bromide, 1000 ppm	ISST160211J	1000 ppm	Absolute Standards	010816	2/11/16	2/12/16	1/8/19	
	Nitrate as N, 1000 ppm	K			06/2/15			6/2/18	
	Phosphate as P, 1000 ppm	L			111115			11/11/18	
	Sulfate, 1000 ppm				012516			1/25/18	
2/16/16	EPA 1664 STD (MS/MSD)	ISST160216A	4 mg/mL	ULTRA SCIENTIFIC	CP-0013	2/16/16	3/18/16	2/28/19	

CHEMICAL INVENTORY LOG

Inventory Code CINV	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
~~SX07~~ 140122A	Sodium Sulfate, anhydrous	EMD	WF03H	99.02	1/22/14			STF	#6912
CINV 140206A	Zinc Acetate 2N	Ricca	1401B21	–	2/5/14		01/16	DS	#6914
CINV 140206 B	2N Zinc Acetate	Ricca	1401B21	–	2/5/14		01/16	DS	
CINV-140211 A	Mercury II oxide	Alfa Aesar	F22I27	99.6%	2/11/14			MC	
B	Pyridine, ACS, 99.0% Liquid	Alfa Aesar	D05Z888	99.0%	2/11/14			MC	
C	Ethanol, Alcohol Reagent	Alfa Aesar	I17Y018	94-96%	2/11/14			MC	
D	Copper II sulfate pentahydrate	Alfa Aesar	C28Y031	98-102%	2/11/14	5/20/14	5/20/17	MC	
E	Ammonium Chloride	Alfa Aesar	D29Z044	99.5%	2/11/14	2/19/14	2/19/17	MC/MI	
CINV-140211F	Silver Nitrate	Spectrum	1040854	≥99.0%	2/11/14			2	
CINV-140213 A	1° Turbidity Std. 0.02 NTU	Oakton	C365301	–	2/13/14	2/13/14	2/13/15	MC	
B	20		C365600						
C	100		C365829						
D	800		C365735						
CINV-140127A	Phosphoric Acid	EMD	53224335	≥85.0%	1/27/14	1/28/14	1/28/16	2	
CINV-140217A	Silica Gel (80-200 Mesh)	J.T. Baker	0000053205	–	2/17/14		6/26/20	PLN	#6962
CINV-140218A	Iron (III) nitrate monohydrate	Alfa Aesar	K132039	98.0-101%	2/18/14			MI	
B	Phenol, ACS, 99+%, stab. Crystalline		A28Z020	99+%					
C	Acetic acid, glacial		J10Z048	99.7%		3/24/14	3/24/16		#6975
D	Sodium hypochlorite		L10Z021	14.5%					
E	Potassium sodium-L tartrate tetrahydrate		C28Z028	99.0-102%					

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-140218F	Methyl Red sodium salt	Alfa Aesar	J31Z031	-	2/18/14			mi	
G	Ethylenediaminetetraacetic acid disodium magnesium salt hydrate		K10175810	-					
H	Glycerol, ACS, 99.5% Viscous liquid		mi 2/18/14 K19Z027	99.5 %					
I	Potassium cyanide		KZZ010	96.0% min.					
J	Sodium hydrogen phosphate, anhydrous, 99% min., Granular		J16Z014	99.0 % min					
K	N-(1-Naphthyl)ethylenediamine dihydrochloride, ACS, powder		K047031	-		5/20/14	5/20/17		
L	Calmagite, indicator		10169022	-					
CINV-140218M	Sodium Nitroferricyanide, Dihydrate	JT Baker	000005264 6	-	2/18/14			mi	
N	Chloramine-T, Trihydrate	MacRon	00000 562032	-					
CINV-140221A	Sodium Salicylate, 99%	Alfa Aesar	10372041	99 %	2/21/14			mc	
CINV-140224A	Ethylenediaminetetraacetic acid disodium salt dihydrate, ACS, 99-101 %	Alfa Aesar	A18Z040	99 - 101 %	2/24/14	5/20/14	5/20/17	mi	
B	Calcium carbonate		#01Z033	99%					
CINV-140226A	Dichloromethane	Omni Solv	510910	99.96%	02/25/14				Lims BTL# 6916
B									6917
C									6918
D									6919
E									6920
F									6921
G									6922
H									6923

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-141204A	Traceable Cond. Standard 10,413	VWR	CC13143	—	12/4/14	12/4/14	12/4/15	AC	MF Exp: 9/22/15
CINV-141204B	Traceable Cond. Stand. 10,000us	VWR	CC13097	—	12/4/14	12/4/14	12/4/15	AC	MF Exp: 9/2/15
CINV-141205A	10,000 us/cm Conductivity st.	Ricca	141048	—	12/5/14	12/9/14	12/9/15	AC	MF Exp: 10/2016
~~CINV-150106A~~	MEB 1/6/15								
CINV-150106A	Ammonium hydroxide	BDH	7214060	-	1/6/15	1/14/15	1/14/17	MB	
B	Ammonium hydroxide	BDH	7214060	-	1/8/15	2/17/15	2/17/17		
C	Ammonium Sulfate	J.T BAKER	A0093	>= 99%		2/20/15	2/20/18		
D	"	"	"	"		3/12/15	3/12/18		
E	"	"	"	"		2/9/15	2/9/18		
F	"	"	"	"		3/27/15	3/27/18		
G	1,5- Diphenylcarbazide	Alfa Aesar	F06Z066	97+%		3/12/15	3/12/18		
H	METHANOL	JT BAKER	57548	99.9%					
I	Sulfuric acid	J.T BAKER	84185	95-98%		2/23/15	2/23/17		
CINV-150119A	Turbidity Standard, 5NTU	Amco	C473708	-	1/19/15	2/4/15	1/16	2	
CINV-150126A	Buffer, pH 4	VWR	14090484	-	01/26/15	3/4/15	9/16	LSR	
CINV-150126B	Buffer, pH 7	VWR	14119970	-	01/26/15	2/28/15	10/16	LSR	
CINV-150127A	Ammonium chloride	Alfa Aesar	K05Z014	99.5%min	1/27/15	5/22/15	5/22/18	2	
CINV-150202A	methanol, RDT	B+J	DL535	99.9%	2/2/15			2	
B	"	"	"	"	"				
C	"	"	"	"	"				

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-150320A	Buffer, pH 2	BDH	1408B19	-	3/20/15		8/2016	LSR	
↓ B	Buffer, pH 12	BDH	4409454	-	3/20/15		9/2015	LSR	
CINV-150323A	N-(1-Naphthyl)ethylenediamine	~~Alfa Aesar~~	N03A036	-	3/19/15	5/22/15	5/22/18	2	
↓	dihydrochloride							1	
CINV-150325A	TETRAbutylammonium hydroxide	Macron			3/25/15	3/26/15	3/26/17	PEB	
↓ B	Heptafluorobutyric acid	Alfa Aesar	G07X060	99%	3/25/15	3/26/15	3/26/17	PEB	
CINV-150335C	1,5-diphenylcarbazide	J.T BAKER	0000010030	-	3/25/15	3/25/15	3/25/18	PEB	
CINV-150401A	Sodium Chloride	J.T BAKER		99%	4/1/15	04/14/15	4/14/18	PEB	
CINV-150402A	Hexanes	EMD Chemicals	54308	98.5%	4/2/15	5/22/15	5/22/17	LSR	#7546
↓ B						6/25/15	6/25/17	LSR	#7547
↓ C						7/24/15	7/24/15	LSR	#7548
↓ D						8/28/15	8/28/17	LSR	#7549
CINV-150416A	METHANOL	J.T BAKER	57548	99.8%	4/16/15	5/16/15	5/16/17	PEB	
↓ B	1,5-diphenyl carbazide	J.T. BAKER	0000010030	-	4/16/15	7/20/15	7/20/18	PEB	
CINV-150430A	Conductivity Std, 99996	VWR	CC13489	-	4/30/15	6/10/15	2/20/16	LSR	
CINV-150501A	Ferrous Sulfate	Aqua Solutions	501214	-	5/1/15			LSR	
CINV-150506A	Ammonium Persulfate	JTBaker	162447	≥98.0%	5/6/15		7/8/16	2	
↓ B	↓	BDH	3495C517	-	↓	5/8/15	5/8/18	1	
CINV-150511A	Ammonium sulfate	J.T BAKER	86693	99%	5/11/15	5/20/15	5/20/18	PEB	
↓ B	↓	↓	↓	↓	↓			↓	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-150123A	Ammonium Sulfate, granular	JT Baker	118186	>= 99%	9/28/15	10/16/15	10/16/18	MET	
B	↓	↓	↓	↓	↓	10/29/15	10/29/18	↓	
C	↓	↓	↓	↓	↓	11/06/15	11/06/18		
D	↓	↓	↓	↓	↓	11/25/15	11/25/18	↓	
CINV-150924A	Ammonium Hydroxide	BDH	7215070	20-22%	9/24/15	10/07/15	10/07/17	MET	
B	↓	↓	↓	↓	↓	11/16/15	11/16/17	↓	
C	Phosphoric Acid	EMD	55051510	min 85%	9/24/15	10/19/15	10/19/17	↓	
CINV-150928A	METHANOL	JT BAKER	57348	≥ 99.8%	9/28/15				
CINV-151012A	CONDUCTIVITY STD, 1412 uS/cm	VWR	CC13851	-	10/12/15	2/15/16	7/6/16	LSR	
↓ B	CONDUCTIVITY STD, 99797 uS/cm	VWR	CC13746	-	10/12/15	11/9/15	6/5/16	LSR	
CINV-151027A	HYDROGEN PEROXIDE 30%	JT BAKER	0000118853	30%	10/27/15		2/10/17	LSR	2/10/17 #7872
B	SODIUM CARBONATE	MACRON	104967	"	↓			LSR	MANUFACTURE EXP: 8/11/21 #7871
C	AMMONIUM PERSULFATE	BDH	2455C516	-	↓	11/04/15	11/04/18	LSR	4/30/19 #7870
CINV-151027D	HEXANES		55161		10/27/15			LSR	#7873
E	↓	↓	↓	↓	↓	↓	↓	↓	#7874
F	↓	↓	↓	↓	↓	↓	↓	↓	#7875
G	↓	↓	↓	↓	↓	↓	↓	↓	#7876
CINV-151028A	Magnesium Chloride hexahydrate	OmniPur	YE74A	-	10/28/15			MET	
CINV-151117A	SODIUM CARBONATE	MACRON	75-28-04	-	11/17/15			LSR	
↓ B	↓	↓	7528-04	-	↓			↓	

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-151117C	AMMONIUM PERSULFATE	BDH	2455C516	-	11/17/15	1	4/2019	LSR	
↓ D	MAGNESIUM chloride Hexahydrate	EMD Chemicals	YE27A	-	↓			LSR	
CINV-151117 E	METHANOL	HONEYWELL	DNG15	-	11/17/15			LSR	
F				-				LSR	
G				-				LSR	
H				-				LSR	
I				-				LSR	
J				-				LSR	
CINV-151119A	Ammonium Sulfate	J.T BAKER	~~H01857~~	7=97.0%	11/19/15			MEB	
B			115217						
C									
D									
CINV-151130A	Conductivity Std, 99893 µS/cm	VWR	CC13872	-	11/30/15	2/22/16	7/13/2016	LSR	
B	Ammonium Hydroxide	BDH	7215070	-	↓		8/2018	↓	
C	↓	↓	↓	-	↓		↓		
CINV-151130 D	SULFURIC ACID	JT BAKER	120287	95%-98%	11/30/15	12/08/15	12/02/17	LSR	
↓ E	↓	↓	↓	↓	↓	3/16/16	3/16/18	↓	
CINV-151130 F	1,5 Diphenyl Carbazide	JT BAKER	104477	-	11/30/15	12/01/15	11/01/18	MEB	
CINV-160111A	CONDUCTIVITY STD, 93[illegible]	VWR	CC14270	-	1/11/16		11/11/16	MEB	
↓ B	↓ 99,992 µS/cm	↓	CC14206	-	1/11/16	1/27/16	10/2016	↓	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CIW-160111 C	Buffer, pH 7	Thermo Scientific	TP2		1/11/16		11/2017	LSR	
D	↓, pH 10	VWR	1509B50		1/11/16		3/2017	LSR	
E	CONDUCTIVITY STD, 1413 ms/cm	Mettler Toledo	1514260009		1/11/16		8/24/17	LSR	
CIW-160112 A	HEXANES	EMD Chemicals	55219		1/12/16	1/12/16	1/12/18	LSR	8147
B						1/19/16	1/19/18	LSR	8148
C						1/28/16	1/28/18	LSR	8149
D						2/17/16	2/17/18	LSR	8150
CIW-160125 A	SODIUM CARBONATE	MACRON	109514		1/25/16	2/12/16	2/12/19	REB	
CIW-160125 B						3/22/16	3/22/19		
C	Ammonium hydroxide	BDH	7215070		1/25/16	2/24/16	2/24/18	REB	
CIW-160125 ~~A~~ D REB 160116	Ammonium sulfate	JT. BAKER	126292	≥99%	1/25/16	1/25/16	1/25/19	REB	
E						02/01/16	02/01/19		
F						3/2/10/16	2/10/19		
G						2/23/16	2/23/19		
CIW-160125 H	1,5 diphenyl carbazide	J.T	125086		1/25/16	3/10/16	3/10/19	REB	
CIW-160125 ~~I~~ 5 I WC 1/25/16	Turbidity, 5.0 NTU	AMCO Clear	C585117	–	1/25/16	2/1/16 2/27/16	1/2017	LSR	
CIW-160219 A	Zinc acetate	RICCA	1601D42	–	2/19/16		01/2018	YRJ	
CIW-160219 B	METHANOL	J.T BAKER	121483	99.8%	2/19/16	2/20/16	2/20/18	REB	
C	Magnesium chloride	Omni Pur	15K18008			3/10/16	3/10/19		
D	Ammonium persulfate	BDH	2455C516	≥98%		3/14/16	3/14/19		

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CIW-160219 E	Ammonium sulfate	J.T BAKER	126292	299%	2/19/16	3/7/16	3/7/19	MEB	
F	"	"	"	"	"	3/24/16	3/24/19	"	
G	"	"	"	"	"	4/7/16	4/7/19	"	
H	"	"	"	"	"			"	
CIW-160309A	Buffer, pH 7	BDH	15128S4	-	3/9/16		11/2017	LSR	
B	Sodium Chloride	JT Baker	3624-19	"	3/9/16			LSR	
C	Boiling Stones	Chemware	5071-6B010	-	3/9/16			LSR	
CIW-160322A	Buffer pH 4	via BDH VWR	15124A49	-	3/22/16		11/2017	LSR	
B	Conductivity Std, 100005 µS/cm	VWR	CC14097	-	3/22/16		9/23/16	LSR	
C	HEXANES	EMD		-	3/22/16			LSR	8388
D	"	"		"	"			LSR	8389
E	"	"		"	"			LSR	8390
F	"	"		"	"			LSR	8391
CIW-160405A	Sulfanilamide	J.T Baker	123372		4/5/16	4/6/16	4/6/19	MEB	
CIW-160406A	Ammonium Sulfate	J.T Baker	126292	≥99%	4/6/16			MEB	
B	"	"	"	"	"			"	
C	"	"	"	"	"			"	
D	"	"	"	"	"			"	
E	Ammonium hydroxide	BDH	7215070	-	"	04/06/16	04/06/18	MEB	
F	"	"	"	-	"			"	

Advanced Technology Laboratories-Las Vegas
Logbook #2

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
POST COLUMN REAGENT Grt	R160405B	CINV-150125H / CINV-151130E CINV-160219B	0.5g / 28mL / 100mL	1000
2% $CuSO_4$	R160406A	CIM-140211D	2g	100
R1 Buffer	B	R160406A, CIM-150127A CIM-140224A, CIM-160125C	2.5mL, 85g 0.1g, 14mL	1000
R2 Coloring Rgt.	C	CIM-150323A / CIM-160405A CIM-150924C	0.2g, 4.0g, 17mL	100
ASCORBIC ACID SOLUTION	R160406D	CIM-141126A, #8301	6g / 2mL	100
ELUENT Grt	R160406E	CINV-160219F / CINV-160406E	66g / 13mL	2000
ELUENN Grt	R160407A	CINV-160219F/G / CINV-160406E	66g / 13mL	2000
BUFFER	R160407B	CINV-160219G / CINV-160406E	66g / 130mL	2000
POST COLUMN REAGENT Grt	R160407C	CINV-150125H / CINV-151130E CINV-160219B	0.5g / 28mL / 100mL	1000

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
–	4/5/16	4/10/17	3/10/16; 3/16/18; 2/10/18	IC-06 & IC-07	JAS
2%	4/6/16	5/6/16	5/20/17		REB
–	4/6/16	5/6/16	5/6/16; 5/22/18 5/20/17, 2/24/18		↓
–	↓	↓	5/22/18; 4/6/19 10/14/17		↓
–	4/6/16	4/20/16	5/26/18, 03/22/18		2
–	4/6/16	4/6/17	3/24/19; 4/6/18	IC-01	REB
–	4/7/16	4/7/17	3/24/19; 4/7/19; 4/6/18	IC-06 & IC-07	JAS
–	4/7/16	5/7/16	4/7/19; 4/6/18		↓
–	4/7/16	4/12/16	3/10/19; 3/16/18; 2/10/18	IC-06 & IC-07	JAS

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
5% KMnO4	R160503C	150715D	50g	1000
NaCl Hydroxylamine HCL	R160503D	8283 / 160309B	60g / 60g	500
MLT @ 3500 µs/cm	R160503E	IWST-160503A	14.5mL	964.5mL
POST COLUMN REAGENT	R1600504A	CINV-160125H / 8403 CINV-160219B	0.5g / 28mL / 100mL	1000
POST COLUMN REAGENT	R160504B	CINV-160125H / 8403 CINV-160219B	0.5g / 28mL / 100mL	1000
ELUENT Cgt	R160504C	CINV-160406A / CINV-160406F	66g / 13mL	2000
TCLP 1	R160504D	7606 / 160422F	11.4 / 128.6	2000
TCLP 1	R160504E	7606 / 160422F	11.4 / 128.6	2000
ELUENT Cgt	R160505A	CINV-160406A / CINV-160406F	66g / 13mL	2000
2% Ammonium persulfate 5% H_2PO_4	R160505B	CINV-160219D / CINV-150924C	100g / 50mL	1000
5% KMNO4	R160506A	150715D	50g	1000
11% Tin Chloride in 3% HCL	R160506B	8282 / 8405	11g / 30g	1000
"	R160506C	8282 / 8405	11g / 30g	1000
2% CuSO4	R160507A	CINV-140211D	2g	100
R_1 Buffer	B	R160507A, CINV-150127A CINV-140214A, CINV-160125C	2.5mL, 85g 0.1g, 14mL	1000
R_2 COLUMN Rgt	C	CINV-150323A / CINV-160405A CINV-150924C	0.2g / 4g / 17mL	100
ELUENT Cgt	R160509A	CINV/160406A · CINV-160406B / CINV-160406F	66g / 13mL	2000
POST COLUMN REAGENT Cgt	R160509B	CINV-160125H / 8403 CINV-160219B	0.5g / 28mL / 100mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	—	5/3/16	5/3/17			
	—	5/3/16	5/3/17	4/25/19 / 5/3/19		
	—	5/3/16	5/3/17	5/9/17		
	—	5/4/16	5/9/16	3/10/19; 4/21/18; 2/20/18	IC-06 & IC-07	
5	—	5/4/16	5/9/16	↓	IC-01, IC-06 & IC-07	↓
	—	5/4/16	5/4/17	4/22/19; 5/1/18	IC-01	
	—	5/4/16	5/4/17	4/22/17 / 6/3/18	4.96	
	—	5/4/16	5/4/17	4/22/17-6/8/18	4.96	
	—	5/5/16	5/5/17	4/26/19; 5/1/18	IC-06 & IC-07	
10	6%, 5%	5/5/16	5/5/17	07/19/19; 10/4/17		
	—	5/6/16	5/6/17			
	—	5/6/16	5/6/17			
	—	5/6/16	5/6/17			
	2%	5/11/16	5/7/16	5/20/17		
15	—	↓	↓	5/20/19, 5/22/19 3/26/18		↓
	—	↓	↓	5/21/18; 4/16/19; 10/19/17		
	—	5/9/16	5/9/17	4/26/19; 5/1/19; 5/1/18	IC-06 & IC-07	
	—	5/9/16	5/14/16	3/10/19; 4/21/18; 2/20/18	IC-06 & IC-07	↓
20						

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58354
ASSET #: N019628

Instrument ID: ICPMS-02
Analyst: CEI

Method:

Date Analyzed: 5/11/2016

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X				
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).		X				
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Cr in N019654-001B MS & Mn in N019628-006B PS failed. However LCS passed criteria.
%RSD of As in STD 1 failed > 15%. However %RSD of LLICV passed criteria.
%RSD of Se in LLCCV3 failed > 20%. However %Rec of LLCCV3 passed criteria.
%Rec of Rh [2] in N019628-001B, 002B & 003B & Ge [1] in N019628-002B failed. Mo & Se for rerun.
Mn in N019628-003B & Cr in N019628-004B & 005B is over linear range. For dilution.
Dilution was necessary for Se in N019628-003B & 004B due to failing %Rec of Ge [1]. Sample was reported at dilution which was passed the %Rec criteria of IS.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 5/20/2016 Date: _____

2nd Level Reviewer _____ 5/20/2016 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58354
ASSET #: N019628

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/16/2016

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Mo & Se in N019628-001B, 002B, & 003B rerun only
For dilution of Mn in N019628-003B & Cr in N019628-004B & 005B only.
Dilution was necessary for Se in N019628-002B due to failing %Rec of Ge [1]. Samples were reported at dilution which was passed the %Rec criteria of IS.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/20/2016 Date: —

2nd Level Reviewer 5/20/2016 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58354
ASSET #: N019628

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/18/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

N019628-007B Cr reinjection, possible carryover in the first run.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/20/2016 Date: –

2nd Level Reviewer 5/20/2016 Date: –

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58354
ASSET #: N019628

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/20/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

N019628-004B Se reinjection failing RSD on previous run.. Dilution was necessary because of failing IS.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/20/2016 Date: _____

2nd Level Reviewer 5/20/2016 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N019628-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 108.055 * 1 * (25/25)

Chromium , ug/L = 108.055000

Reporting results in two significant figures,

Chromium , ug/L = 110

% RSD SUMMARY

PERCENT RSD SUMMARY: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.073	22.71	15	<PQL	0.13	12.64	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.47	3.51	15	PASS	0.54	4.54	15	PASS
Std3-5/50 ppb	ICAL	1	4.9	1.63	15	PASS	5.044	1.68	15	PASS
Std4-10/100 ppb	ICAL	1	9.94	0.45	15	PASS	10.14	1.24	15	PASS
Std5-20/200 ppb	ICAL	1	19.82	1.16	15	PASS	20.48	1.53	15	PASS
Std6-40/400 ppb	ICAL	1	38.97	2.29	15	PASS	40.96	0.87	15	PASS
Std7-100/1000 ppb	ICAL	1	98.88	0.89	15	PASS	101.09	0.89	15	PASS
Std8-200/2000 ppb	ICAL	1	200.79	1.068	15	PASS	199.21	0.31	15	PASS
ICV	ICV	1	9.41	0.87	15	PASS	95.25	0.3	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.99	5.3	20	PASS	0.51	4.94	20	PASS
ICSA1	ICSA	1	0.12	8.82	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.21	0.57	15	PASS	17.48	0.84	15	PASS
MB-58354	MBLK	1	0.018	105.11	15	<PQL	0.054	50.67	15	<PQL
LCS-58354	LCS	1	9.65	1.14	15	PASS	100.7	0.79	15	PASS
N019653-001B	SAMP	1	0.42	4.3	15	PASS	<0.000	N/A	15	<PQL
N019628-006B	SAMP	1	0.023	371.21	15	<PQL	471.24	0.61	15	PASS
N019628-006B	SAMP	5	<0.000	N/A	15	<PQL	103.92	0.082	15	PASS
N019628-006B-PS	PS	1	8.6	0.87	15	PASS	543.11	1.41	15	PASS
N019628-006B-MS	MS	1	8.6	2.27	15	PASS	560.26	0.28	15	PASS
N019628-006B-MSD	MSD	1	8.63	0.52	15	PASS	561.15	0.67	15	PASS
N019654-001B	SAMP	1	134.068	0.32	15	PASS	<0.000	N/A	15	<PQL
N019654-001B-MS	MS	1	140.78	0.56	15	PASS	93.84	0.76	15	PASS
CCV1	CCV	1	19.29	1.016	15	PASS	20.15	1.51	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0029	548.55	15	<PQL
N019628-006B	SAMP	1	0.083	44.1	15	<PQL	468.97	0.81	15	PASS
N019628-006B	SAMP	25	<0.000	N/A	15	<PQL	21.55	0.7	15	PASS
N019628-006B-PS	PS	5	1.84	3.72	15	PASS	117.39	0.3	15	PASS
N019628-006B-MS	MS	5	1.88	3.39	15	PASS	120.86	0.75	15	PASS
N019628-006B-MSD	MSD	5	1.87	1.56	15	PASS	120.84	1.15	15	PASS
N019628-001B	SAMP	1	108.055	0.94	15	PASS	11.69	1.51	15	PASS
N019628-002B	SAMP	1	113.84	0.89	15	PASS	1.28	2.89	15	PASS
N019628-003B	SAMP	1	<0.000	N/A	15	<PQL	277.26	0.27	15	PASS
N019628-004B	SAMP	1	1892.99	0.7	15	PASS	36.91	1.099	15	PASS
N019533-009B	SAMP	1	0.5	8.51	15	PASS	9.78	0.6	15	PASS
CCV2	CCV	1	19.68	0.85	15	PASS	19.91	1.075	15	PASS
CCB2	CCB	1	0.078	9.37	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.018	3.32	20	PASS	0.5	4.34	20	PASS
ICSA2	ICSA	1	0.2	5.86	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.42	1.071	15	PASS	17.45	0.041	15	PASS

PERCENT RSD SUMMARY: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019628-005B	SAMP	1	9607.34	1.55	15	PASS	<0.000	N/A	15	<PQL
N019628-007B	SAMP	1	2.5	5.35	15	PASS	15.97	1.2	15	PASS
N019651-003B	SAMP	1	58.82	0.91	15	PASS	5.43	0.65	15	PASS
N019651-004B	SAMP	1	60.55	0.78	15	PASS	5.11	1.058	15	PASS
N019654-002B	SAMP	1	10.68	1.031	15	PASS	<0.000	N/A	15	<PQL
N019654-003B	SAMP	1	0.16	16.24	15	<PQL	111.42	0.41	15	PASS
N019654-005B	SAMP	1	0.59	6.33	15	PASS	148.14	1.12	15	PASS
N019654-006B	SAMP	1	355.84	0.31	15	PASS	34.097	0.15	15	PASS
N019654-007B	SAMP	1	2.1	1.52	15	PASS	0.85	5.82	15	PASS
N019654-008B	SAMP	1	113.88	1.096	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.44	1.23	15	PASS	20.19	0.84	15	PASS
CCB3	CCB	1	0.032	46.38	15	<PQL	<0.000	N/A	15	<PQL
N019654-009B	SAMP	1	121.085	1.3	15	PASS	<0.000	N/A	15	<PQL
N019654-010B	SAMP	1	7.25	1.26	15	PASS	79.19	0.7	15	PASS
N019655-001B	SAMP	1	<0.000	N/A	15	<PQL	42.13	0.73	15	PASS
CCV4	CCV	1	19.44	1.5	15	PASS	20.088	2.071	15	PASS
CCB4	CCB	1	0.031	41.67	15	<PQL	0.0012	1108.54	15	<PQL
CCV5	CCV	1	19.38	1.52	15	PASS	20.37	0.47	15	PASS
CCB5	CCB	1	0.037	26.063	15	<PQL	0.016	76.95	15	<PQL
CCV6	CCV	1	19.53	0.91	15	PASS	21.34	0.21	15	PASS
CCB6	CCB	1	0.021	22.36	15	<PQL	0.15	8.11	15	PASS
LLCCV2	CCV2	1	0.99	1.52	20	PASS	0.56	3.62	20	PASS
ICSA3	ICSA	1	0.19	8.011	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.46	1.4	15	PASS	18.019	1.4	15	PASS
N019628-003B	SAMP	5	0.026	149.75	15	<PQL	62.42	1.0097	15	PASS
N019628-004B	SAMP	5	412.27	0.96	15	PASS	8.35	3.53	15	PASS
N019628-004B	SAMP	25	84.76	1.72	15	PASS	1.67	5.23	15	PASS
N019628-005B	SAMP	100	106.75	0.19	15	PASS	<0.000	N/A	15	<PQL
N019628-007B	SAMP	5	0.12	2.72	15	PASS	3.47	2.89	15	PASS
N019654-005B	SAMP	1	0.48	8.68	15	PASS	148.7	1.27	15	PASS
N019654-006B	SAMP	5	73.82	1.87	15	PASS	7.34	1.61	15	PASS
CCV7	CCV	1	19.49	2.86	15	PASS	20.52	2.85	15	PASS
CCB7	CCB	1	0.031	7.9	15	PASS	0.066	50.38	15	<PQL
N019628-007B	SAMP	1	0.54	9.47	15	PASS	16.073	3.11	15	PASS
CCV8	CCV	1	19.42	1.25	15	PASS	20.6	2.34	15	PASS
CCB8	CCB	1	0.024	38.37	15	<PQL	0.16	15.57	15	<PQL
LLCCV3	CCV2	1	0.97	2.81	20	PASS	0.6	4.8	20	PASS
ICSA4	ICSA	1	0.16	6.82	15	PASS	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.091	1.17	15	PASS	17.73	2.049	15	PASS

PERCENT RSD SUMMARY: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	22.13	15	NR! Failed	0.11	29.067	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.45	7.94	15	PASS	0.38	10.97	15	PASS
Std3-5/50 ppb	ICAL	1	5.052	2.37	15	PASS	5.062	4.49	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	1.34	15	PASS	9.89	2.19	15	PASS
Std5-20/200 ppb	ICAL	1	19.86	1.62	15	PASS	20.31	1.8	15	PASS
Std6-40/400 ppb	ICAL	1	39.97	0.49	15	PASS	40.6	5.39	15	PASS
Std7-100/1000 ppb	ICAL	1	99.55	1.021	15	PASS	100.67	2.028	15	PASS
Std8-200/2000 ppb	ICAL	1	200.25	0.41	15	PASS	199.52	1.77	15	PASS
ICV	ICV	1	9.57	1.75	15	PASS	10.23	2.23	15	PASS
ICB	ICB	1	0.013	26.94	15	<PQL	0.028	90.43	15	<PQL
LLICV	CCV1	1	0.093	17.13	20	PASS	0.51	16.55	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.029	28.95	15	<PQL
ICSAB1	ICSAB	1	20.078	2.079	15	PASS	19.69	5.58	15	PASS
MB-58354	MBLK	1	0.018	30.45	15	<PQL	0.036	57.32	15	<PQL
LCS-58354	LCS	1	9.83	1.41	15	PASS	9.11	9.65	15	PASS
N019653-001B	SAMP	1	1.51	4.95	15	PASS	0.21	10.034	15	PASS
N019628-006B	SAMP	1	0.1	37.43	15	NR!	0.19	39.63	15	<PQL
N019628-006B	SAMP	5	0.022	66.74	15	<PQL	<0.000	N/A	15	<PQL
N019628-006B-PS	PS	1	9.77	2.98	15	PASS	8.6	3.48	15	PASS
N019628-006B-MS	MS	1	10.0065	2.31	15	PASS	7.9	5.06	15	PASS
N019628-006B-MSD	MSD	1	9.67	1.64	15	PASS	8.62	5.34	15	PASS
N019654-001B	SAMP	1	0.61	3.77	15	PASS	1.24	11.21	15	PASS
N019654-001B-MS	MS	1	10.65	2.25	15	PASS	10.58	1.91	15	PASS
CCV1	CCV	1	19.0078	2.14	15	PASS	20.75	1.12	15	PASS
CCB1	CCB	1	0.016	17.11	15	<PQL	<0.000	N/A	15	<PQL
N019628-006B	SAMP	1	0.073	31.82	15	<PQL	0.011	204.21	15	<PQL
N019628-006B	SAMP	25	0.009	32.29	15	<PQL	<0.000	N/A	15	<PQL
N019628-006B-PS	PS	5	2.062	1.63	15	PASS	1.91	3.58	15	PASS
N019628-006B-MS	MS	5	2.057	1.75	15	PASS	1.93	11.063	15	PASS
N019628-006B-MSD	MSD	5	2.011	4.26	15	PASS	1.81	2.81	15	PASS
N019628-001B	SAMP	1	4.44	2.82	15	PASS	1.53	14.81	15	PASS
N019628-002B	SAMP	1	4.13	2.013	15	PASS	1.63	5.98	15	PASS
N019628-003B	SAMP	1	0.82	8.43	15	PASS	0.044	123.85	15	<PQL
N019628-004B	SAMP	1	1.51	5.84	15	PASS	4.3	6.66	15	PASS
N019533-009B	SAMP	1	1.13	4.076	15	PASS	0.45	5.86	15	PASS
CCV2	CCV	1	19.17	0.72	15	PASS	20.069	2.67	15	PASS
CCB2	CCB	1	0.0038	108.83	15	<PQL	0.00021	4678.5	15	<PQL
LLCCV1	CCV2	1	0.076	31.35	20	<PQL	0.54	14.66	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.022	129.51	15	<PQL
ICSAB2	ICSAB	1	20.48	0.65	15	PASS	19.72	3.43	15	PASS

PERCENT RSD SUMMARY: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N019628-005B	SAMP	1	2.77	2.89	15	PASS	11.36	4.32	15	PASS
N019628-007B	SAMP	1	1.58	1.6	15	PASS	0.14	44.084	15	<PQL
N019651-003B	SAMP	1	1.38	7.34	15	PASS	0.1	78	15	<PQL
N019651-004B	SAMP	1	1.42	4.98	15	PASS	0.15	12.82	15	PASS
N019654-002B	SAMP	1	1.54	3.84	15	PASS	1.15	14.6	15	PASS
N019654-003B	SAMP	1	1.64	0.92	15	PASS	0.13	51.31	15	<PQL
N019654-005B	SAMP	1	0.2	15.8	15	NR!	0.011	235.54	15	<PQL
N019654-006B	SAMP	1	4.011	2.24	15	PASS	0.86	12.68	15	PASS
N019654-007B	SAMP	1	8.58	1.085	15	PASS	0.095	86.51	15	<PQL
N019654-008B	SAMP	1	3.18	1.39	15	PASS	0.55	15.34	15	NR!
CCV3	CCV	1	19.33	0.55	15	PASS	20.15	1.062	15	PASS
CCB3	CCB	1	0.0054	138.72	15	<PQL	0.0097	247.15	15	<PQL
N019654-009B	SAMP	1	3.29	1.44	15	PASS	0.48	22.64	15	<PQL
N019654-010B	SAMP	1	1.4	6.014	15	PASS	0.34	25.8	15	<PQL
N019655-001B	SAMP	1	5.3	2.46	15	PASS	<0.000	N/A	15	<PQL
CCV4	CCV	1	18.78	1.85	15	PASS	19.7	5.86	15	PASS
CCB4	CCB	1	0.0021	215.19	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	19.27	1.56	15	PASS	18.71	5.33	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	18.85	0.47	15	PASS	19.35	2.15	15	PASS
CCB6	CCB	1	0.01	48.76	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.095	25.51	20	<PQL	0.46	5.43	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.0062	481.11	15	<PQL
ICSAB3	ICSAB	1	20.4	1.56	15	PASS	18.26	3.7	15	PASS
N019628-003B	SAMP	5	0.17	0.92	15	PASS	0.029	70.82	15	<PQL
N019628-004B	SAMP	5	0.31	2.96	15	PASS	0.89	25.78	15	NR!
N019628-004B	SAMP	25	0.048	8.1	15	PASS	0.21	48.63	15	<PQL
N019628-005B	SAMP	100	0.031	44	15	<PQL	0.13	67.34	15	<PQL
N019628-007B	SAMP	5	0.33	11.66	15	PASS	0.052	107.76	15	<PQL
N019654-005B	SAMP	1	0.19	11.65	15	PASS	<0.000	N/A	15	<PQL
N019654-006B	SAMP	5	0.85	2.17	15	PASS	0.11	21.55	15	<PQL
CCV7	CCV	1	19.36	2.32	15	PASS	20.12	3.27	15	PASS
CCB7	CCB	1	0.004	72.51	15	<PQL	<0.000	N/A	15	<PQL
N019628-007B	SAMP	1	1.59	3.89	15	PASS	0.29	12.034	15	PASS
CCV8	CCV	1	19.36	2.044	15	PASS	18.65	1.87	15	PASS
CCB8	CCB	1	0.018	86.13	15	<PQL	0.0018	1244.15	15	<PQL
LLCCV3	CCV2	1	0.11	10.96	20	PASS	0.55	28.11	20	FAILED
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.0022	514.93	15	<PQL
ICSAB4	ICSAB	1	19.73	0.37	15	PASS	19.47	0.51	15	PASS

%RSD of Se in LLCCV3 failed > 20%. However %Rec of LLCCV3 passed criteria.

PERCENT RSD SUMMARY: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	7.88	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.45	11.75	15	PASS
Std3-5/50 ppb	ICAL	1	4.97	1.18	15	PASS
Std4-10/100 ppb	ICAL	1	9.92	1.88	15	PASS
Std5-20/200 ppb	ICAL	1	19.82	1.89	15	PASS
Std6-40/400 ppb	ICAL	1	39.94	1.63	15	PASS
Std7-100/1000 ppb	ICAL	1	99.22	1.11	15	PASS
Std8-200/2000 ppb	ICAL	1	200.43	1.083	15	PASS
ICV	ICV	1	10.1	0.84	15	PASS
ICB	ICB	1	0.16	3	15	PASS
LLICV	CCV1	1	0.54	3.096	20	PASS
ICSA1	ICSA	1	0.065	1.9	15	PASS
ICSAB1	ICSAB	1	22.97	0.59	15	PASS
MB-58354	MBLK	1	0.081	11.58	15	PASS
LCS-58354	LCS	1	10.24	1.61	15	PASS
N019653-001B	SAMP	1	1.43	6.38	15	PASS
N019628-006B	SAMP	1	2.95	0.77	15	PASS
N019628-006B	SAMP	5	0.63	3.55	15	PASS
N019628-006B-PS	PS	1	14.87	0.8	15	PASS
N019628-006B-MS	MS	1	15.16	1.053	15	PASS
N019628-006B-MSD	MSD	1	14.89	1.16	15	PASS
N019654-001B	SAMP	1	1.88	1.88	15	PASS
N019654-001B-MS	MS	1	12.91	0.97	15	PASS
CCV1	CCV	1	19.95	1.73	15	PASS
CCB1	CCB	1	0.08	9.036	15	PASS
N019628-006B	SAMP	1	2.92	1.24	15	PASS
N019628-006B	SAMP	25	0.12	14.83	15	PASS
N019628-006B-PS	PS	5	2.77	2.44	15	PASS
N019628-006B-MS	MS	5	2.91	2.79	15	PASS
N019628-006B-MSD	MSD	5	2.87	1.45	15	PASS
N019628-001B	SAMP	1	52.23	0.26	15	PASS
N019628-002B	SAMP	1	49.54	0.52	15	PASS
N019628-003B	SAMP	1	35.57	1.38	15	PASS
N019628-004B	SAMP	1	23.55	0.25	15	PASS
N019533-009B	SAMP	1	5	1.26	15	PASS
CCV2	CCV	1	20.0048	1.59	15	PASS
CCB2	CCB	1	0.074	8.42	15	PASS
LLCCV1	CCV2	1	0.49	2.67	20	PASS
ICSA2	ICSA	1	0.039	12.85	15	PASS
ICSAB2	ICSAB	1	22.69	1.23	15	PASS

PERCENT RSD SUMMARY: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N019628-005B	SAMP	1	38.5	1.15	15	PASS
N019628-007B	SAMP	1	10.96	0.86	15	PASS
N019651-003B	SAMP	1	2.053	2.45	15	PASS
N019651-004B	SAMP	1	2.14	3.75	15	PASS
N019654-002B	SAMP	1	3.66	2.5	15	PASS
N019654-003B	SAMP	1	3.61	0.36	15	PASS
N019654-005B	SAMP	1	3.23	3	15	PASS
N019654-006B	SAMP	1	3.99	2.31	15	PASS
N019654-007B	SAMP	1	5.33	1.44	15	PASS
N019654-008B	SAMP	1	2.53	2.58	15	PASS
CCV3	CCV	1	20.16	0.57	15	PASS
CCB3	CCB	1	0.064	12.57	15	PASS
N019654-009B	SAMP	1	2.6	2.36	15	PASS
N019654-010B	SAMP	1	1.014	4.42	15	PASS
N019655-001B	SAMP	1	6.57	0.83	15	PASS
CCV4	CCV	1	19.85	1.36	15	PASS
CCB4	CCB	1	0.072	6.4	15	PASS
CCV5	CCV	1	20.42	0.19	15	PASS
CCB5	CCB	1	0.084	10.99	15	PASS
CCV6	CCV	1	20.48	1.33	15	PASS
CCB6	CCB	1	0.13	8.82	15	PASS
LLCCV2	CCV2	1	0.53	6.92	20	PASS
ICSA3	ICSA	1	0.053	21.61	15	<PQL
ICSAB3	ICSAB	1	23.31	0.53	15	PASS
N019628-003B	SAMP	5	7.29	0.76	15	PASS
N019628-004B	SAMP	5	4.63	2.7	15	PASS
N019628-004B	SAMP	25	0.89	9.5	15	PASS
N019628-005B	SAMP	100	0.38	7.76	15	PASS
N019628-007B	SAMP	5	2.12	4.76	15	PASS
N019654-005B	SAMP	1	3.24	3.43	15	PASS
N019654-006B	SAMP	5	0.79	5.14	15	PASS
CCV7	CCV	1	20.21	0.41	15	PASS
CCB7	CCB	1	0.078	15.23	15	<PQL
N019628-007B	SAMP	1	10.65	0.79	15	PASS
CCV8	CCV	1	20.36	1.12	15	PASS
CCB8	CCB	1	0.073	20.044	15	<PQL
LLCCV3	CCV2	1	0.48	6.71	20	PASS
ICSA4	ICSA	1	0.029	33.69	15	<PQL
ICSAB4	ICSAB	1	22.85	0.96	15	PASS

PERCENT RSD SUMMARY: 160516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	11.11	15	PASS	0.11	7.19	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	5.33	15	PASS	0.5	1.47	15	PASS
Std3-5/50 ppb	ICAL	1	5.031	0.5	15	PASS	5.055	0.48	15	PASS
Std4-10/100 ppb	ICAL	1	10.13	3.2	15	PASS	10.39	2	15	PASS
Std5-20/200 ppb	ICAL	1	20.19	1.14	15	PASS	20.46	1.29	15	PASS
Std6-40/400 ppb	ICAL	1	40.3	0.46	15	PASS	40.84	1.023	15	PASS
Std7-100/1000 ppb	ICAL	1	98.34	0.87	15	PASS	99.64	0.67	15	PASS
Std8-200/2000 ppb	ICAL	1	200.74	0.88	15	PASS	199.95	0.99	15	PASS
ICV	ICV	1	10.45	2.41	15	PASS	103.95	0.62	15	PASS
ICB	ICB	1	0.033	25.1	15	<PQL	0.019	10.0045	15	PASS
LLICV	CCV1	1	1.099	3.72	20	PASS	0.54	6.33	20	PASS
ICSA1	ICSA	1	0.16	13.98	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.22	0.87	15	PASS	20.4	0.8	15	PASS
CCV1	CCV	1	20.29	0.76	15	PASS	20.56	1.21	15	PASS
CCB1	CCB	1	0.03	27.72	15	<PQL	0.035	34.087	15	<PQL
CCV2	CCV	1	20.33	0.45	15	PASS	20.69	0.4	15	PASS
CCB2	CCB	1	0.0013	136.86	15	<PQL	0.0042	74.43	15	<PQL
LLCCV1	CCV2	1	1.11	1.82	20	PASS	0.55	4.54	20	PASS
ICSA2	ICSA	1	0.15	17.78	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.31	1.74	15	PASS	20.57	1.17	15	PASS
CCV3	CCV	1	20.046	1.49	15	PASS	20.75	0.85	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.029	42.88	15	<PQL
CCV4	CCV	1	19.77	1.75	15	PASS	20.64	2.36	15	PASS
CCB4	CCB	1	0.065	11.13	15	PASS	0.014	134.41	15	<PQL
CCV5	CCV	1	19.99	1.35	15	PASS	20.85	1.28	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.015	17.26	15	<PQL
LLCCV2	CCV2	1	1.011	2.64	20	PASS	0.56	1.83	20	PASS
ICSA3	ICSA	1	0.16	8.13	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.15	0.46	15	PASS	21.33	2.58	15	PASS
CCV6	CCV	1	20.079	1.9	15	PASS	20.62	1.64	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.017	24.35	15	<PQL
N019654-006B	SAMP	5	74.94	1.19	15	PASS	7.26	2.46	15	PASS
N019628-001B	SAMP	5	23.099	0.87	15	PASS	2.41	1.19	15	PASS
N019628-002B	SAMP	5	24.17	0.75	15	PASS	0.23	14.58	15	PASS
N019628-003B	SAMP	5	<0.000	N/A	15	<PQL	59.23	1.84	15	PASS
N019628-004B	SAMP	5	405.19	1.14	15	PASS	7.71	0.53	15	PASS
N019628-004B	SAMP	25	83.7	0.37	15	PASS	1.63	0.83	15	PASS
N019628-005B	SAMP	100	105.45	0.16	15	PASS	<0.000	N/A	15	<PQL
CCV7	CCV	1	19.86	1.29	15	PASS	20.84	1.78	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.071	172.37	15	<PQL

PERCENT RSD SUMMARY: 160516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV3	CCV2	1	1.016	2.03	20	PASS	0.56	8.62	20	PASS
ICSA4	ICSA	1	0.14	10.15	15	PASS	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	19.16	0.97	15	PASS	21.47	1.76	15	PASS

PERCENT RSD SUMMARY: 160516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	38.13	15	<PQL	0.093	11.87	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	11.54	15	PASS	0.49	2.85	15	PASS
Std3-5/50 ppb	ICAL	1	4.83	5.4	15	PASS	4.84	2.32	15	PASS
Std4-10/100 ppb	ICAL	1	10.44	2.076	15	PASS	9.82	0.72	15	PASS
Std5-20/200 ppb	ICAL	1	19.69	6.68	15	PASS	19.75	0.5	15	PASS
Std6-40/400 ppb	ICAL	1	39.76	2.29	15	PASS	39.4	0.48	15	PASS
Std7-100/1000 ppb	ICAL	1	100.28	0.63	15	PASS	98.82	0.71	15	PASS
Std8-200/2000 ppb	ICAL	1	199.92	0.48	15	PASS	200.75	0.45	15	PASS
ICV	ICV	1	10.6	3.62	15	PASS	10.38	1.96	15	PASS
ICB	ICB	1	0.02	2.38	15	PASS	0.051	33.26	15	<PQL
LLICV	CCV1	1	0.52	7.3	20	PASS	0.54	7.19	20	PASS
ICSA1	ICSA	1	0.023	136.69	15	<PQL	0.053	11.19	15	PASS
ICSAB1	ICSAB	1	18.082	1.13	15	PASS	22.72	1.67	15	PASS
CCV1	CCV	1	20.44	0.76	15	PASS	19.73	0.8	15	PASS
CCB1	CCB	1	0.0078	173.21	15	<PQL	0.013	52.36	15	<PQL
CCV2	CCV	1	19.93	1.017	15	PASS	19.67	1.08	15	PASS
CCB2	CCB	1	0.011	99.7	15	<PQL	0.025	36.018	15	<PQL
LLCCV1	CCV2	1	0.54	19.052	20	PASS	0.5	4.12	20	PASS
ICSA2	ICSA	1	0.02	89.3	15	<PQL	0.026	27.22	15	<PQL
ICSAB2	ICSAB	1	17.98	2.9	15	PASS	22.48	1.85	15	PASS
CCV3	CCV	1	20.16	1.061	15	PASS	19.51	1.99	15	PASS
CCB3	CCB	1	0	N/A	15	<PQL	0.021	18.79	15	<PQL
CCV4	CCV	1	18.83	3.31	15	PASS	19.71	1.41	15	PASS
CCB4	CCB	1	0.011	173.21	15	<PQL	0.021	35.64	15	<PQL
CCV5	CCV	1	19.86	1.0087	15	PASS	19.59	0.67	15	PASS
CCB5	CCB	1	0.0035	173.21	15	<PQL	0.022	51.77	15	<PQL
LLCCV2	CCV2	1	0.57	9.16	20	PASS	0.52	0.92	20	PASS
ICSA3	ICSA	1	0.032	88.75	15	<PQL	0.028	12.61	15	PASS
ICSAB3	ICSAB	1	18.11	2.0039	15	PASS	22.49	1.18	15	PASS
CCV6	CCV	1	21.078	0.55	15	PASS	19.36	2.093	15	PASS
CCB6	CCB	1	0.011	99.84	15	<PQL	0.029	24.96	15	<PQL
N019654-006B	SAMP	5	0.2	23.87	15	<PQL	0.76	4.066	15	PASS
N019628-001B	SAMP	5	0.38	24.92	15	<PQL	9.75	4.21	15	PASS
N019628-002B	SAMP	5	0.33	27.23	15	<PQL	9.72	1.29	15	PASS
N019628-003B	SAMP	5	0.015	173.21	15	<PQL	7.089	0.41	15	PASS
N019628-004B	SAMP	5	1.026	17.047	15	NR!	4.55	0.63	15	PASS
N019628-004B	SAMP	25	0.2	38.054	15	<PQL	0.87	3.43	15	PASS
N019628-005B	SAMP	100	0.084	24.43	15	<PQL	0.36	4.3	15	PASS
CCV7	CCV	1	19.73	1.22	15	PASS	19.64	1.61	15	PASS
CCB7	CCB	1	0.0074	86.6	15	<PQL	0.027	6.71	15	PASS

PERCENT RSD SUMMARY: 160516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV3	CCV2	1	0.56	9.064	20	PASS	0.51	5.72	20	PASS
ICSA4	ICSA	1	0.017	173.21	15	<PQL	0.029	20.12	15	<PQL
ICSAB4	ICSAB	1	17.66	1.68	15	PASS	22.62	1.8	15	PASS

PERCENT RSD SUMMARY: 160518A2

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.073	15.23	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.46	1.56	15	PASS
Std3-5/50 ppb	ICAL	1	4.85	1.68	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	0.99	15	PASS
Std5-20/200 ppb	ICAL	1	19.55	1.24	15	PASS
Std6-40/400 ppb	ICAL	1	39.62	0.83	15	PASS
Std7-100/1000 ppb	ICAL	1	98.66	1.038	15	PASS
Std8-200/2000 ppb	ICAL	1	200.8	0.75	15	PASS
ICV	ICV	1	10.2	0.64	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1	4.73	20	PASS
ICSA1	ICSA	1	0.1	5.2	15	PASS
ICSAB1	ICSAB	1	18.92	0.93	15	PASS
N019628-007B	SAMP	1	1.058	3.81	15	PASS
CCV1	CCV	1	19.085	0.43	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.075	0.48	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
CCV3	CCV	1	18.92	1.38	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.97	1.18	20	PASS
ICSA2	ICSA	1	0.11	6.94	15	PASS
ICSAB2	ICSAB	1	18.74	0.56	15	PASS

PERCENT RSD SUMMARY: 160520A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	11.77	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	16.13	15	PASS
Std3-5/50 ppb	ICAL	1	4.75	4.18	15	PASS
Std4-10/100 ppb	ICAL	1	10.023	3.47	15	PASS
Std5-20/200 ppb	ICAL	1	19.51	0.58	15	PASS
Std6-40/400 ppb	ICAL	1	39.67	1.65	15	PASS
Std7-100/1000 ppb	ICAL	1	100.24	0.62	15	PASS
Std8-200/2000 ppb	ICAL	1	200	1.52	15	PASS
ICV	ICV	1	10.21	6.3	15	PASS
ICB	ICB	1	0.0022	304.51	15	<PQL
LLICV	CCV1	1	0.53	17.96	20	PASS
ICSA1	ICSA	1	0.035	75.85	15	<PQL
ICSAB1	ICSAB	1	17.78	2.39	15	PASS
N019628-004B	SAMP	5	0.7	6.12	15	PASS
CCV1	CCV	1	18.23	1.57	15	PASS
CCB1	CCB	1	0.0075	212.42	15	<PQL
LLCCV1	CCV2	1	0.54	13.62	20	PASS
ICSA2	ICSA	1	0.027	38.063	15	<PQL
ICSAB2	ICSAB	1	16.28	0.76	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160511A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0511001.D	RINSE	RINSE	1	05/11/16 10:02 AM
A0511002.D	Cal Blank	IBLK	1	05/11/16 10:07 AM
A0511003.D	Std1-0.1/1 ppb	ICAL	1	05/11/16 10:13 AM
A0511004.D	Std2-0.5/5 ppb	ICAL	1	05/11/16 10:18 AM
A0511005.D	Std3-5/50 ppb	ICAL	1	05/11/16 10:24 AM
A0511006.D	Std4-10/100 ppb	ICAL	1	05/11/16 10:30 AM
A0511007.D	Std5-20/200 ppb	ICAL	1	05/11/16 10:35 AM
A0511008.D	Std6-40/400 ppb	ICAL	1	05/11/16 10:41 AM
A0511009.D	Std7-100/1000 ppb	ICAL	1	05/11/16 10:46 AM
A0511010.D	Std8-200/2000 ppb	ICAL	1	05/11/16 10:52 AM
A0511011.D	ICV	ICV	1	05/11/16 10:58 AM
A0511012.D	ICB	ICB	1	05/11/16 11:03 AM
A0511013.D	LLICV	CCV1	1	05/11/16 11:09 AM
A0511014.D	ICSA1	ICSA	1	05/11/16 11:15 AM
A0511015.D	ICSAB1	ICSAB	1	05/11/16 11:19 AM
A0511016.D	MB-58354	MBLK	1	05/11/16 11:32 AM
A0511017.D	LCS-58354	LCS	1	05/11/16 11:37 AM
A0511018.D	N019653-001B	SAMP	1	05/11/16 11:43 AM
A0511019.D	N019628-006B	SAMP	1	05/11/16 11:49 AM
A0511020.D	N019628-006B	SAMP	5	05/11/16 11:54 AM
A0511021.D	N019628-006B-PS	PS	1	05/11/16 12:00 PM
A0511022.D	N019628-006B-MS	MS	1	05/11/16 12:05 PM
A0511023.D	N019628-006B-MSD	MSD	1	05/11/16 12:11 PM
A0511024.D	N019654-001B	SAMP	1	05/11/16 12:17 PM
A0511025.D	N019654-001B-MS	MS	1	05/11/16 12:22 PM
A0511026.D	CCV1	CCV	1	05/11/16 12:28 PM
A0511027.D	CCB1	CCB	1	05/11/16 12:33 PM
A0511028.D	N019628-006B	SAMP	1	05/11/16 12:39 PM
A0511029.D	N019628-006B	SAMP	25	05/11/16 12:45 PM
A0511030.D	N019628-006B-PS	PS	5	05/11/16 12:50 PM
A0511031.D	N019628-006B-MS	MS	5	05/11/16 12:56 PM
A0511032.D	N019628-006B-MSD	MSD	5	05/11/16 1:01 PM
A0511033.D	N019628-001B	SAMP	1	05/11/16 1:07 PM
A0511034.D	N019628-002B	SAMP	1	05/11/16 1:13 PM
A0511035.D	N019628-003B	SAMP	1	05/11/16 1:19 PM
A0511036.D	N019628-004B	SAMP	1	05/11/16 1:24 PM
A0511037.D	N019533-009B	SAMP	1	05/11/16 1:30 PM
A0511038.D	CCV2	CCV	1	05/11/16 1:35 PM
A0511039.D	CCB2	CCB	1	05/11/16 1:41 PM
A0511040.D	LLCCV1	CCV2	1	05/11/16 1:47 PM
A0511041.D	ICSA2	ICSA	1	05/11/16 1:52 PM
A0511042.D	ICSAB2	ICSAB	1	05/11/16 1:56 PM

INJECTION LOG: 160511A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0511043.D	N019628-005B	SAMP	1	05/11/16 2:03 PM
A0511044.D	N019628-007B	SAMP	1	05/11/16 2:09 PM
A0511045.D	N019651-003B	SAMP	1	05/11/16 2:14 PM
A0511046.D	N019651-004B	SAMP	1	05/11/16 2:20 PM
A0511047.D	N019654-002B	SAMP	1	05/11/16 2:26 PM
A0511048.D	N019654-003B	SAMP	1	05/11/16 2:31 PM
A0511049.D	N019654-005B	SAMP	1	05/11/16 2:37 PM
A0511050.D	N019654-006B	SAMP	1	05/11/16 2:42 PM
A0511051.D	N019654-007B	SAMP	1	05/11/16 2:48 PM
A0511052.D	N019654-008B	SAMP	1	05/11/16 2:54 PM
A0511053.D	CCV3	CCV	1	05/11/16 2:59 PM
A0511054.D	CCB3	CCB	1	05/11/16 3:05 PM
A0511055.D	N019654-009B	SAMP	1	05/11/16 3:10 PM
A0511056.D	N019654-010B	SAMP	1	05/11/16 3:16 PM
A0511057.D	N019655-001B	SAMP	1	05/11/16 3:22 PM
A0511058.D	MB-58318	MBLK	1	05/11/16 3:26 PM
A0511059.D	LCS-58318	LCS	1	05/11/16 3:32 PM
A0511060.D	N019610-001B	SAMP	1	05/11/16 3:37 PM
A0511061.D	N019610-002B	SAMP	1	05/11/16 3:43 PM
A0511062.D	N019610-003B	SAMP	1	05/11/16 3:48 PM
A0511063.D	N019610-004B	SAMP	1	05/11/16 3:54 PM
A0511064.D	N019610-005B	SAMP	1	05/11/16 4:00 PM
A0511065.D	CCV4	CCV	1	05/11/16 4:05 PM
A0511066.D	CCB4	CCB	1	05/11/16 4:11 PM
A0511073.D	N019610-007B	SAMP	1	05/11/16 4:16 PM
A0511074.D	N019610-009B	SAMP	1	05/11/16 4:22 PM
A0511075.D	N019610-010B	SAMP	1	05/11/16 4:27 PM
A0511076.D	N019610-011B	SAMP	1	05/11/16 4:33 PM
A0511077.D	N019610-012B	SAMP	1	05/11/16 4:39 PM
A0511078.D	N019610-013B	SAMP	1	05/11/16 4:44 PM
A0511079.D	N019610-014B	SAMP	1	05/11/16 4:50 PM
A0511080.D	N019610-015B	SAMP	1	05/11/16 4:54 PM
A0511081.D	N019611-001B	SAMP	1	05/11/16 5:00 PM
A0511082.D	N019611-002B	SAMP	1	05/11/16 5:06 PM
A0511083.D	CCV5	CCV	1	05/11/16 5:11 PM
A0511084.D	CCB5	CCB	1	05/11/16 5:17 PM
A0511085.D	N019611-003B	SAMP	1	05/11/16 5:22 PM
A0511086.D	N019611-004B	SAMP	1	05/11/16 5:29 PM
A0511087.D	N019611-005B	SAMP	1	05/11/16 5:34 PM
A0511088.D	N019611-006B	SAMP	1	05/11/16 5:40 PM
A0511089.D	N019611-007B	SAMP	1	05/11/16 5:46 PM
A0511090.D	N019610-001B	SAMP	5	05/11/16 5:51 PM

INJECTION LOG: 160511A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0511091.D	N019610-001B-PS	PS	1	05/11/16 5:57 PM
A0511092.D	N019610-001B-MS	MS	1	05/11/16 6:02 PM
A0511093.D	N019610-001B-MSD	MSD	1	05/11/16 6:08 PM
A0511094.D	N019610-013B-MS	MS	1	05/11/16 6:14 PM
A0511095.D	CCV6	CCV	1	05/11/16 6:19 PM
A0511096.D	CCB6	CCB	1	05/11/16 6:25 PM
A0511097.D	LLCCV2	CCV2	1	05/11/16 6:30 PM
A0511098.D	ICSA3	ICSA	1	05/11/16 6:36 PM
A0511099.D	ICSAB3	ICSAB	1	05/11/16 6:41 PM
A0511100.D	N019628-003B	SAMP	5	05/11/16 6:47 PM
A0511101.D	N019628-004B	SAMP	5	05/11/16 6:53 PM
A0511102.D	N019628-004B	SAMP	25	05/11/16 6:58 PM
A0511103.D	N019628-005B	SAMP	100	05/11/16 7:04 PM
A0511104.D	N019628-007B	SAMP	5	05/11/16 7:09 PM
A0511105.D	N019654-005B	SAMP	1	05/11/16 7:15 PM
A0511106.D	N019654-006B	SAMP	5	05/11/16 7:20 PM
A0511107.D	N019610-010B	SAMP	5	05/11/16 7:26 PM
A0511108.D	N019610-011B	SAMP	5	05/11/16 7:32 PM
A0511109.D	N019610-012B	SAMP	50	05/11/16 7:37 PM
A0511110.D	CCV7	CCV	1	05/11/16 7:43 PM
A0511111.D	CCB7	CCB	1	05/11/16 7:48 PM
A0511112.D	N019610-013B	SAMP	50	05/11/16 7:54 PM
A0511113.D	N019610-014B	SAMP	5	05/11/16 7:59 PM
A0511114.D	N019610-015B	SAMP	10	05/11/16 8:05 PM
A0511115.D	N019611-001B	SAMP	5	05/11/16 8:11 PM
A0511116.D	N019611-002B	SAMP	10	05/11/16 8:16 PM
A0511117.D	N019611-003B	SAMP	5	05/11/16 8:22 PM
A0511118.D	N019611-005B	SAMP	5	05/11/16 8:27 PM
A0511119.D	N019611-007B	SAMP	5	05/11/16 8:33 PM
A0511120.D	N019628-007B	SAMP	1	05/11/16 8:39 PM
A0511121.D	CCV8	CCV	1	05/11/16 8:44 PM
A0511122.D	CCB8	CCB	1	05/11/16 8:50 PM
A0511123.D	LLCCV3	CCV2	1	05/11/16 8:55 PM
A0511124.D	ICSA4	ICSA	1	05/11/16 9:01 PM
A0511125.D	ICSAB4	ICSAB	1	05/11/16 9:06 PM

INJECTION LOG: 160516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0516001.D	RINSE	RINSE	1	05/16/16 6:51 AM
A0516002.D	Cal Blank	IBLK	1	05/16/16 6:57 AM
A0516003.D	Std1-0.1/1 ppb	ICAL	1	05/16/16 7:03 AM
A0516004.D	Std2-0.5/5 ppb	ICAL	1	05/16/16 7:08 AM
A0516005.D	Std3-5/50 ppb	ICAL	1	05/16/16 7:14 AM
A0516006.D	Std4-10/100 ppb	ICAL	1	05/16/16 7:19 AM
A0516007.D	Std5-20/200 ppb	ICAL	1	05/16/16 7:25 AM
A0516008.D	Std6-40/400 ppb	ICAL	1	05/16/16 7:30 AM
A0516009.D	Std7-100/1000 ppb	ICAL	1	05/16/16 7:36 AM
A0516010.D	Std8-200/2000 ppb	ICAL	1	05/16/16 7:41 AM
A0516011.D	ICV	ICV	1	05/16/16 7:47 AM
A0516012.D	ICB	ICB	1	05/16/16 7:52 AM
A0516013.D	LLICV	CCV1	1	05/16/16 7:58 AM
A0516014.D	ICSA1	ICSA	1	05/16/16 8:04 AM
A0516015.D	ICSAB1	ICSAB	1	05/16/16 8:09 AM
A0516016.D	N019707-001B	SAMP	50	05/16/16 8:22 AM
A0516017.D	N019707-002B	SAMP	50	05/16/16 8:28 AM
A0516018.D	N019709-001C	SAMP	25	05/16/16 8:33 AM
A0516019.D	N019709-001C	SAMP	125	05/16/16 8:39 AM
A0516020.D	N019711-001C	SAMP	10	05/16/16 8:44 AM
A0516021.D	N019712-001C	SAMP	10	05/16/16 8:50 AM
A0516022.D	N019713-001C	SAMP	2	05/16/16 8:55 AM
A0516023.D	N019714-002C	SAMP	1	05/16/16 9:01 AM
A0516024.D	N019714-003C	SAMP	1	05/16/16 9:06 AM
A0516025.D	N019731-001B	SAMP	25	05/16/16 9:12 AM
A0516026.D	CCV1	CCV	1	05/16/16 9:18 AM
A0516027.D	CCB1	CCB	1	05/16/16 9:23 AM
A0516028.D	N019732-001C	SAMP	25	05/16/16 9:28 AM
A0516029.D	MB-58373	MBLK	1	05/16/16 9:34 AM
A0516030.D	LCS-58373	LCS	1	05/16/16 9:39 AM
A0516031.D	N019654-008B	SAMP	5	05/16/16 9:45 AM
A0516032.D	N019654-009B	SAMP	5	05/16/16 9:51 AM
A0516033.D	N019654-008B	SAMP	25	05/16/16 9:56 AM
A0516034.D	N019654-008B-PS	PS	5	05/16/16 10:02 AM
A0516035.D	N019654-008B-MS	MS	5	05/16/16 10:07 AM
A0516036.D	N019654-008B-MSD	MSD	5	05/16/16 10:13 AM
A0516037.D	N019590-002B	SAMP	1	05/16/16 10:18 AM
A0516038.D	CCV2	CCV	1	05/16/16 10:24 AM
A0516039.D	CCB2	CCB	1	05/16/16 10:30 AM
A0516040.D	LLCCV1	CCV2	1	05/16/16 10:35 AM
A0516041.D	ICSA2	ICSA	1	05/16/16 10:41 AM
A0516042.D	ICSAB2	ICSAB	1	05/16/16 10:46 AM

INJECTION LOG: 160516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0516043.D	N019590-002B	SAMP	1	05/16/16 10:52 AM
A0516044.D	N019590-002A	SAMP	1	05/16/16 11:00 AM
A0516045.D	MB-58351	MBLK	1	05/16/16 11:05 AM
A0516046.D	LCS-58351	LCS	1	05/16/16 11:11 AM
A0516047.D	N019639-001B	SAMP	1	05/16/16 11:16 AM
A0516048.D	N019639-001B	SAMP	5	05/16/16 11:22 AM
A0516049.D	N019639-001B-PS	PS	1	05/16/16 11:27 AM
A0516050.D	N019639-001B-MS	MS	1	05/16/16 11:33 AM
A0516051.D	N019639-001B-MSD	MSD	1	05/16/16 11:39 AM
A0516052.D	N019639-002B	SAMP	1	05/16/16 11:44 AM
A0516053.D	CCV3	CCV	1	05/16/16 11:50 AM
A0516054.D	CCB3	CCB	1	05/16/16 11:55 AM
A0516055.D	N019639-005B	SAMP	1	05/16/16 12:01 PM
A0516056.D	N019639-007B	SAMP	1	05/16/16 12:06 PM
A0516057.D	N019639-008B	SAMP	1	05/16/16 12:12 PM
A0516058.D	N019639-009B	SAMP	1	05/16/16 12:17 PM
A0516059.D	N019639-010B	SAMP	1	05/16/16 12:23 PM
A0516060.D	N019639-011B	SAMP	1	05/16/16 12:29 PM
A0516061.D	N019639-012B	SAMP	1	05/16/16 12:34 PM
A0516062.D	N019639-013B	SAMP	1	05/16/16 12:40 PM
A0516063.D	N019639-014B	SAMP	1	05/16/16 12:45 PM
A0516064.D	N019639-014B-MS	MS	1	05/16/16 12:51 PM
A0516065.D	CCV4	CCV	1	05/16/16 12:56 PM
A0516066.D	CCB4	CCB	1	05/16/16 1:02 PM
A0516067.D	N019639-015B	SAMP	1	05/16/16 1:08 PM
A0516068.D	N019639-016B	SAMP	1	05/16/16 1:13 PM
A0516069.D	N019639-017B	SAMP	1	05/16/16 1:19 PM
A0516070.D	N019639-018B	SAMP	1	05/16/16 1:24 PM
A0516071.D	N019639-019B	SAMP	1	05/16/16 1:30 PM
A0516072.D	MB-58351	MBLK	1	05/16/16 1:35 PM
A0516073.D	N019639-002B	SAMP	25	05/16/16 1:41 PM
A0516074.D	N019639-005B	SAMP	25	05/16/16 1:46 PM
A0516075.D	N019639-017B	SAMP	5	05/16/16 1:52 PM
A0516076.D	N019639-018B	SAMP	5	05/16/16 1:57 PM
A0516077.D	CCV5	CCV	1	05/16/16 2:03 PM
A0516078.D	CCB5	CCB	1	05/16/16 2:09 PM
A0516079.D	LLCCV2	CCV2	1	05/16/16 2:14 PM
A0516080.D	ICSA3	ICSA	1	05/16/16 2:20 PM
A0516081.D	ICSAB3	ICSAB	1	05/16/16 2:25 PM
A0516082.D	N019610-010B	SAMP	5	05/16/16 2:30 PM
A0516083.D	N019610-011B	SAMP	5	05/16/16 2:35 PM
A0516084.D	N019610-012B	SAMP	50	05/16/16 2:41 PM

INJECTION LOG: 160516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0516085.D	N019610-013B	SAMP	50	05/16/16 2:47 PM
A0516086.D	N019610-013B-MS	MS	50	05/16/16 2:53 PM
A0516087.D	N019610-014B	SAMP	5	05/16/16 2:59 PM
A0516088.D	N019610-015B	SAMP	10	05/16/16 3:04 PM
A0516089.D	N019611-001B	SAMP	5	05/16/16 3:09 PM
A0516090.D	N019611-002B	SAMP	10	05/16/16 3:14 PM
A0516091.D	N019611-003B	SAMP	5	05/16/16 3:20 PM
A0516092.D	CCV6	CCV	1	05/16/16 3:26 PM
A0516093.D	CCB6	CCB	1	05/16/16 3:31 PM
A0516094.D	N019611-005B	SAMP	5	05/16/16 3:37 PM
A0516095.D	N019611-007B	SAMP	5	05/16/16 3:42 PM
A0516096.D	N019611-012B	SAMP	25	05/16/16 3:48 PM
A0516097.D	N019654-006B	SAMP	5	05/16/16 3:54 PM
A0516098.D	N019628-001B	SAMP	5	05/16/16 3:59 PM
A0516099.D	N019628-002B	SAMP	5	05/16/16 4:05 PM
A0516100.D	N019628-003B	SAMP	5	05/16/16 4:10 PM
A0516101.D	N019628-004B	SAMP	5	05/16/16 4:16 PM
A0516102.D	N019628-004B	SAMP	25	05/16/16 4:22 PM
A0516103.D	N019628-005B	SAMP	100	05/16/16 4:27 PM
A0516104.D	CCV7	CCV	1	05/16/16 4:33 PM
A0516105.D	CCB7	CCB	1	05/16/16 4:38 PM
A0516106.D	LLCCV3	CCV2	1	05/16/16 4:44 PM
A0516107.D	ICSA4	ICSA	1	05/16/16 4:50 PM
A0516108.D	ICSAB4	ICSAB	1	05/16/16 4:55 PM

INJECTION LOG: 160518A2

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0518001.D	RINSE	RINSE	1	05/18/16 4:34 PM
A0518002.D	Cal Blank	IBLK	1	05/18/16 4:40 PM
A0518003.D	Std1-0.1/1 ppb	ICAL	1	05/18/16 4:45 PM
A0518004.D	Std2-0.5/5 ppb	ICAL	1	05/18/16 4:51 PM
A0518005.D	Std3-5/50 ppb	ICAL	1	05/18/16 4:56 PM
A0518006.D	Std4-10/100 ppb	ICAL	1	05/18/16 5:02 PM
A0518007.D	Std5-20/200 ppb	ICAL	1	05/18/16 5:07 PM
A0518008.D	Std6-40/400 ppb	ICAL	1	05/18/16 5:13 PM
A0518009.D	Std7-100/1000 ppb	ICAL	1	05/18/16 5:18 PM
A0518010.D	Std8-200/2000 ppb	ICAL	1	05/18/16 5:24 PM
A0518011.D	ICV	ICV	1	05/18/16 5:29 PM
A0518012.D	ICB	ICB	1	05/18/16 5:35 PM
A0518013.D	LLICV	CCV1	1	05/18/16 5:40 PM
A0518014.D	ICSA1	ICSA	1	05/18/16 5:46 PM
A0518015.D	ICSAB1	ICSAB	1	05/18/16 5:51 PM
A0518016.D	N019628-007B	SAMP	1	05/18/16 5:55 PM
A0518017.D	MB-58428	MBLK	1	05/18/16 6:00 PM
A0518018.D	LCS-58428	LCS	1	05/18/16 6:08 PM
A0518019.D	N019730-001B	SAMP	1	05/18/16 6:14 PM
A0518020.D	N019730-001B	SAMP	5	05/18/16 6:19 PM
A0518021.D	N019730-001B-PS	PS	1	05/18/16 6:25 PM
A0518022.D	N019730-001B-MS	MS	1	05/18/16 6:30 PM
A0518023.D	N019730-001B-MSD	MSD	1	05/18/16 6:36 PM
A0518024.D	N019730-002B	SAMP	1	05/18/16 6:41 PM
A0518025.D	N019730-003B	SAMP	1	05/18/16 6:47 PM
A0518026.D	CCV1	CCV	1	05/18/16 6:52 PM
A0518027.D	CCB1	CCB	1	05/18/16 6:58 PM
A0518028.D	N019741-001B	SAMP	1	05/18/16 7:03 PM
A0518029.D	N019741-002B	SAMP	1	05/18/16 7:09 PM
A0518030.D	N019730-001B	SAMP	25	05/18/16 7:14 PM
A0518031.D	N019730-001B-PS	PS	5	05/18/16 7:20 PM
A0518032.D	N019730-001B-MS	MS	5	05/18/16 7:25 PM
A0518033.D	N019730-001B-MSD	MSD	5	05/18/16 7:31 PM
A0518034.D	N019730-002B	SAMP	5	05/18/16 7:36 PM
A0518035.D	N019741-001B	SAMP	25	05/18/16 7:42 PM
A0518036.D	N019741-002B	SAMP	25	05/18/16 7:48 PM
A0518037.D	N019607-010B	SAMP	1	05/18/16 7:53 PM
A0518038.D	CCV2	CCV	1	05/18/16 7:59 PM
A0518039.D	CCB2	CCB	1	05/18/16 8:04 PM
A0518040.D	N019607-010A	SAMP	1	05/18/16 8:10 PM
A0518041.D	N019611-012B	SAMP	1	05/18/16 8:15 PM
A0518042.D	N019611-012A	SAMP	1	05/18/16 8:21 PM

INJECTION LOG: 160518A2

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0518043.D	N019639-015B	SAMP	1	05/18/16 8:26 PM
A0518044.D	N019639-015A	SAMP	1	05/18/16 8:32 PM
A0518045.D	CCV3	CCV	1	05/18/16 8:37 PM
A0518046.D	CCB3	CCB	1	05/18/16 8:43 PM
A0518047.D	LLCCV1	CCV2	1	05/18/16 8:48 PM
A0518048.D	ICSA2	ICSA	1	05/18/16 8:54 PM
A0518049.D	ICSAB2	ICSAB	1	05/18/16 8:59 PM

INJECTION LOG: 160520A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0520001.D	RINSE	RINSE	1	05/20/16 8:59 AM
A0520002.D	Cal Blank	IBLK	1	05/20/16 9:05 AM
A0520003.D	Std1-0.1/1 ppb	ICAL	1	05/20/16 9:10 AM
A0520004.D	Std2-0.5/5 ppb	ICAL	1	05/20/16 9:16 AM
A0520005.D	Std3-5/50 ppb	ICAL	1	05/20/16 9:21 AM
A0520006.D	Std4-10/100 ppb	ICAL	1	05/20/16 9:27 AM
A0520007.D	Std5-20/200 ppb	ICAL	1	05/20/16 9:33 AM
A0520008.D	Std6-40/400 ppb	ICAL	1	05/20/16 9:38 AM
A0520009.D	Std7-100/1000 ppb	ICAL	1	05/20/16 9:44 AM
A0520010.D	Std8-200/2000 ppb	ICAL	1	05/20/16 9:49 AM
A0520011.D	ICV	ICV	1	05/20/16 9:55 AM
A0520012.D	ICB	ICB	1	05/20/16 10:00 AM
A0520013.D	LLICV	CCV1	1	05/20/16 10:06 AM
A0520014.D	ICSA1	ICSA	1	05/20/16 10:11 AM
A0520015.D	ICSAB1	ICSAB	1	05/20/16 10:17 AM
A0520016.D	N019628-004B	SAMP	5	05/20/16 10:21 AM
A0520017.D	CCV1	CCV	1	05/20/16 10:26 AM
A0520018.D	CCB1	CCB	1	05/20/16 10:31 AM
A0520019.D	LLCCV1	CCV2	1	05/20/16 10:37 AM
A0520020.D	ICSA2	ICSA	1	05/20/16 10:42 AM
A0520021.D	ICSAB2	ICSAB	1	05/20/16 10:48 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/9/2016 2:12:05 P**
Prep End Date: **5/9/2016 7:00:00 P**
Initials/ Date: 5/20/2016

Prep Batch **58354** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58354	Aqueous		25	☐	0	0	25	1.000		
MB-58354	Aqueous		25	☐	0	0	25	1.000		
N019628-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019628-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019628-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019628-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019628-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019628-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019628-006B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019628-006B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019628-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019651-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019651-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N019653-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/9/2016 2:12:05 P**
Prep End Date: **5/9/2016 7:00:00 P**
Initials/ Date: 5/20/2016

Prep Batch **58354** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019654-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N019655-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 11 May 2016 09:44:28 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	123675.00	0.00	
24 Mg	338345.00	0.00	
25 Mg	44800.30	0.00	
26 Mg	51396.80	0.00	
59 Co	419916.00	0.00	
115 In	633823.00	0.00	
206 Pb	164544.00	0.00	
207 Pb	144477.00	0.00	
208 Pb	355337.00	0.00	

RSD (%)

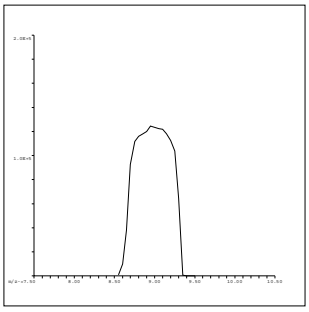
Element	Actual	Required	Flag
9 Be	1.35	5.00	
24 Mg	0.37	5.00	
25 Mg	0.86	5.00	
26 Mg	1.30	5.00	
59 Co	0.42	5.00	
115 In	0.37	5.00	
206 Pb	0.48	5.00	
207 Pb	1.33	5.00	
208 Pb	0.28	5.00	

Ion Ratio

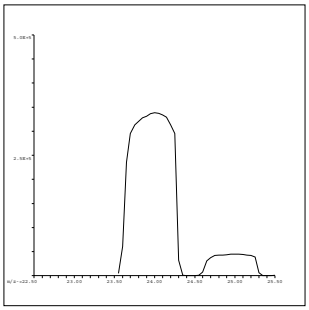
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

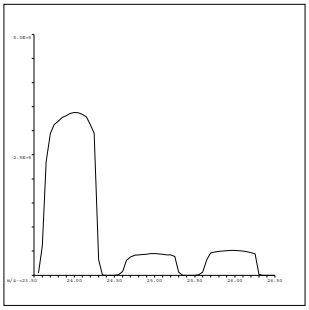
Element	Actual	Required	Flag



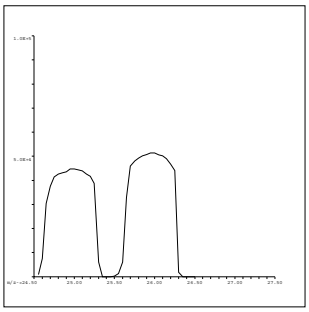
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



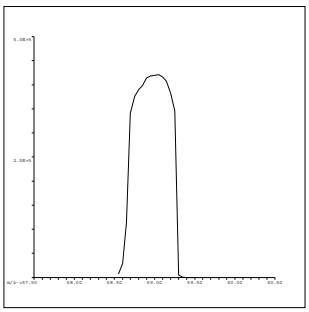
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



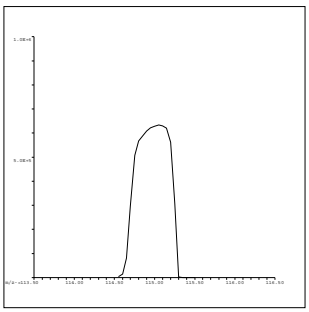
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



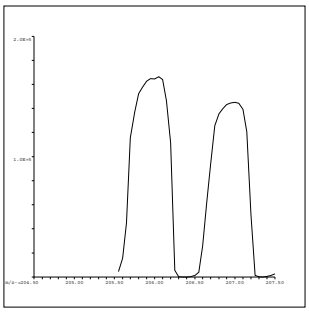
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



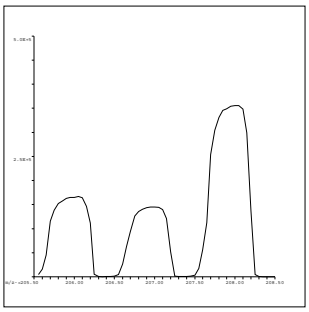
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



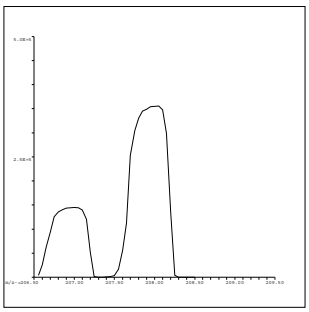
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

C:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 16 May 2016 06:02:25 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	79365.80	0.00	
24	Mg	321976.00	0.00	
25	Mg	43062.80	0.00	
26	Mg	49649.60	0.00	
59	Co	398989.00	0.00	
115	In	785343.00	0.00	
206	Pb	244602.00	0.00	
207	Pb	213435.00	0.00	
208	Pb	523026.00	0.00	

RSD (%)

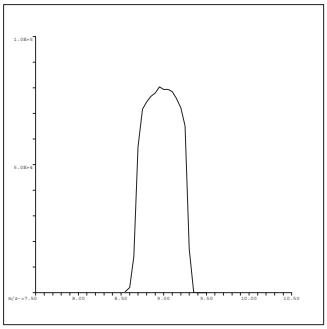
Element		Actual	Required	Flag
9	Be	0.97	5.00	
24	Mg	0.37	5.00	
25	Mg	1.66	5.00	
26	Mg	0.97	5.00	
59	Co	0.72	5.00	
115	In	0.50	5.00	
206	Pb	0.76	5.00	
207	Pb	0.66	5.00	
208	Pb	0.87	5.00	

Ion Ratio

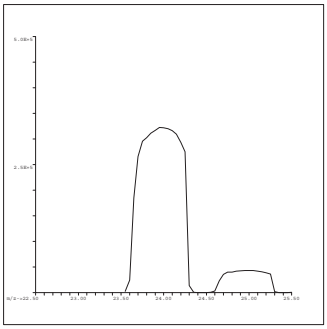
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

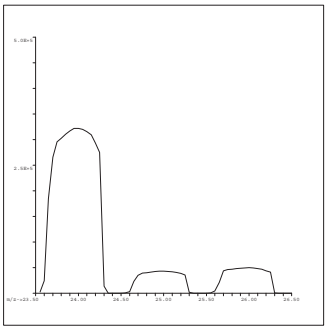
Element	Actual	Required	Flag



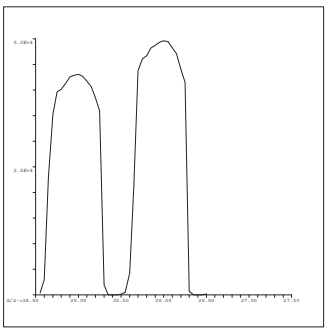
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



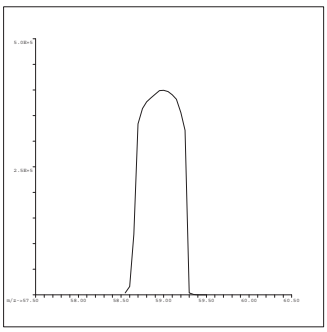
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



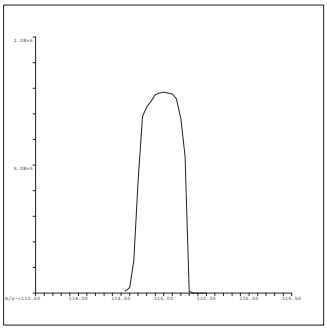
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



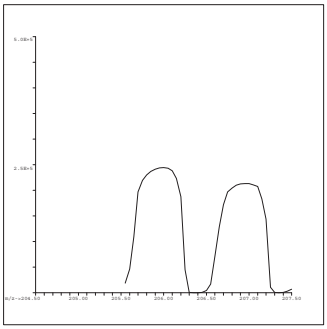
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



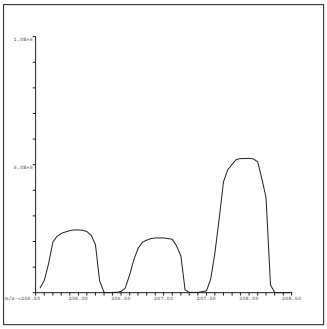
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



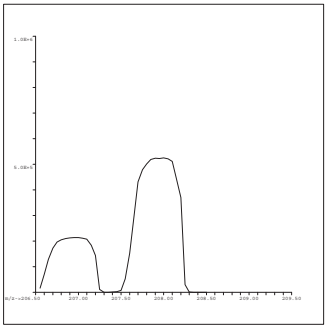
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 18 May 2016 10:00:25 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	104986.00	0.00	
24 Mg	323048.00	0.00	
25 Mg	42925.50	0.00	
26 Mg	49675.90	0.00	
59 Co	508018.00	0.00	
115 In	891813.00	0.00	
206 Pb	285638.00	0.00	
207 Pb	248896.00	0.00	
208 Pb	614478.00	0.00	

RSD (%)

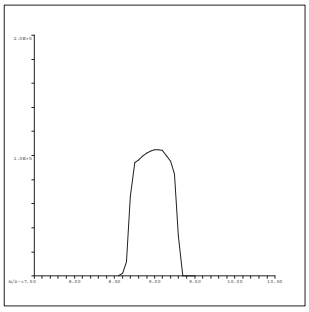
Element	Actual	Required	Flag
9 Be	0.49	5.00	
24 Mg	0.56	5.00	
25 Mg	1.31	5.00	
26 Mg	1.45	5.00	
59 Co	0.50	5.00	
115 In	0.57	5.00	
206 Pb	0.38	5.00	
207 Pb	0.53	5.00	
208 Pb	0.68	5.00	

Ion Ratio

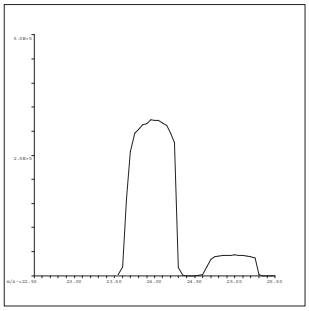
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

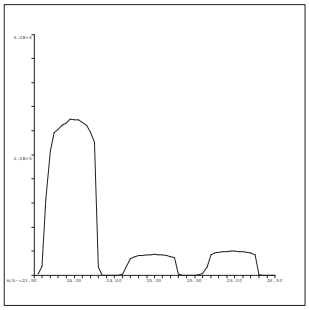
Element	Actual	Required	Flag



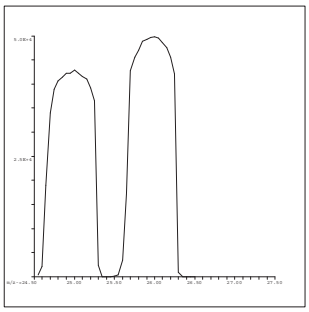
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



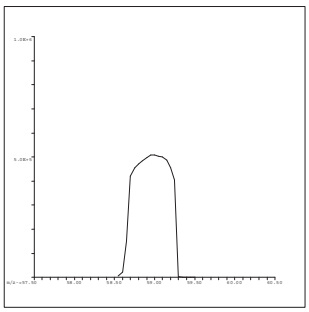
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



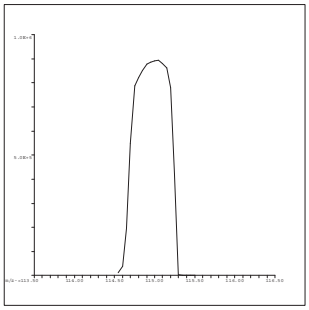
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



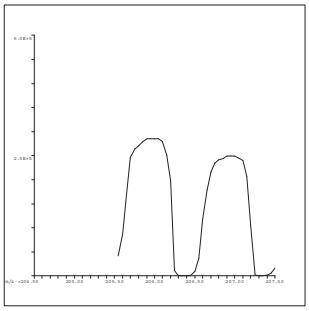
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



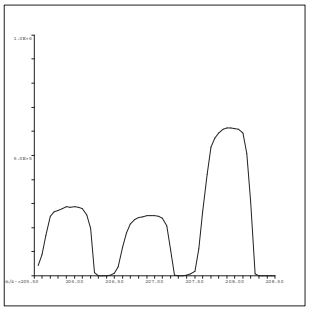
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



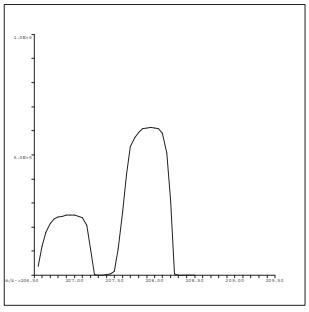
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 20 May 2016 08:22:15 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	134081.00	0.00	
24 Mg	473645.00	0.00	
25 Mg	63452.20	0.00	
26 Mg	73601.80	0.00	
59 Co	770904.00	0.00	
115 In	1397410.00	0.00	
206 Pb	406985.00	0.00	
207 Pb	355248.00	0.00	
208 Pb	873161.00	0.00	

RSD (%)

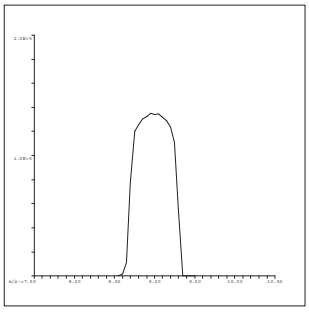
Element	Actual	Required	Flag
9 Be	0.71	5.00	
24 Mg	0.19	5.00	
25 Mg	0.76	5.00	
26 Mg	1.19	5.00	
59 Co	0.78	5.00	
115 In	0.70	5.00	
206 Pb	0.71	5.00	
207 Pb	1.24	5.00	
208 Pb	0.76	5.00	

Ion Ratio

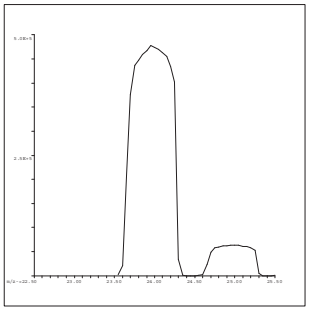
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

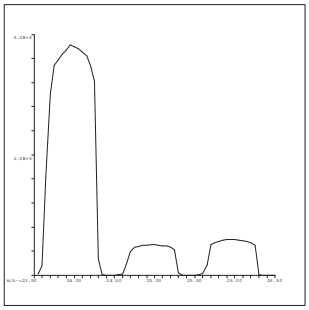
Element	Actual	Required	Flag



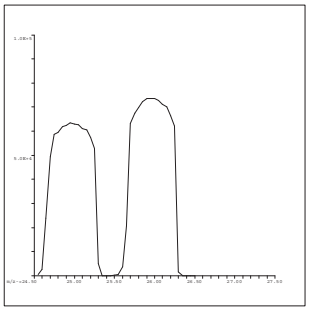
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



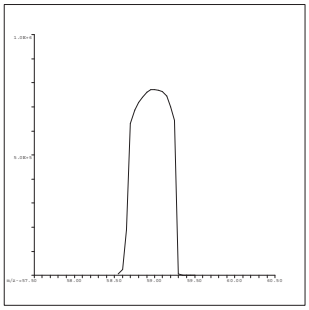
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



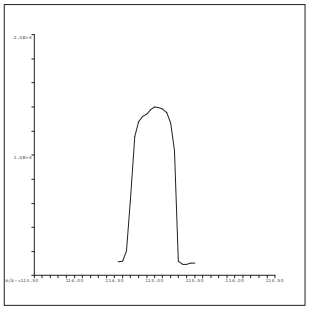
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



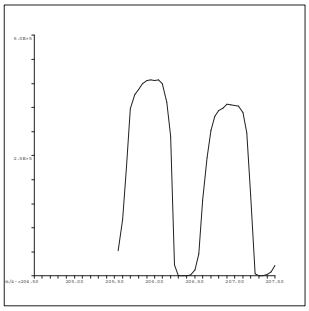
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



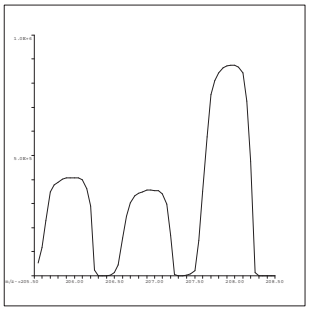
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



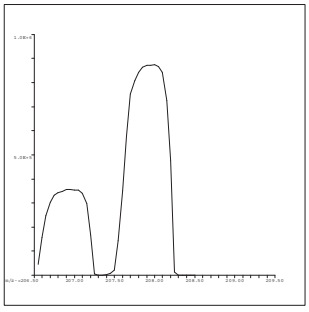
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160511A

Instrument ID: ICPMS-02

Analyte	Data File	A0511002.D	A0511003.D	A0511004.D	A0511005.D	A0511006.D	A0511007.D	A0511008.D	A0511009.D	A0511010.D	
	Acq. Date-Time	05/11/2016 10:07 AM	05/11/2016 10:13 AM	05/11/2016 10:18 AM	05/11/2016 10:24 AM	05/11/2016 10:30 AM	05/11/2016 10:35 AM	05/11/2016 10:41 AM	05/11/2016 10:46 AM	05/11/2016 10:52 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	82331.3		84763.3	85411.1	84040	81598.7	84252.1	81008.2	80609.6	
55 Mn [2]	CPS	253.4		1996.5	16597	32562	63608.2	131077.1	310711.4	609057.4	1.0000
52 Cr [2]	CPS	1090		4079.4	32010.2	62678.2	120280.8	243102.7	591543.9	1194346.6	1.0000
72 Ge (ISTD) [1]	CPS	52239.9		55392.5	54269.9	53840.6	52777.5	53601.1	52434	51909	
78 Se [1]	CPS	2.2		84.5	1071.2	2074.7	4174	8472.6	20542.5	40308.6	1.0000
72 Ge (ISTD) [2]	CPS	50396.4	52231.1	52715.9	53075	52291.1	51258.2	52168.7	50307.2	49682	
75 As [2]	CPS	11.6	82.2	313.3	3395.5	6490.7	12859.8	26332	63229.2	125598.2	1.0000
103 Rh (ISTD) [2]	CPS	1455078.6		1531334.4	1533860	1532356.3	1493709.4	1529942.1	1491969.4	1458886.2	
95 Mo [2]	CPS	45.6		1666.8	17863.9	35570.3	69188.7	142768.8	345813.9	682999.5	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 160516A

Instrument ID: ICPMS-02

Analyte	Data File	A0516002.D	A0516004.D	A0516005.D	A0516006.D	A0516007.D	A0516008.D	A0516009.D	A0516010.D	
	Acq. Date-Time	05/16/2016 06:57 AM	05/16/2016 07:08 AM	05/16/2016 07:14 AM	05/16/2016 07:19 AM	05/16/2016 07:25 AM	05/16/2016 07:30 AM	05/16/2016 07:36 AM	05/16/2016 07:41 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	90612.7	99050.6	98687.6	97658.9	96322.2	99715.5	98604.4	99897.3	
55 Mn [2]	CPS	96.5	2115.1	20386.9	41356.4	80236	165664.4	399533.4	812119.2	1.0000
52 Cr [2]	CPS	694.4	4767.5	37723.3	74348.3	145506	299964.2	722743.7	1493748.5	1.0000
72 Ge (ISTD) [1]	CPS	69972.7	77642.5	77457.4	76115.7	75415.8	77468.9	75058.6	74582.4	
78 Se [1]	CPS	0	182.2	1777.9	3775	7050.7	14641.7	35759.2	70834.3	1.0000
103 Rh (ISTD) [2]	CPS	1828340.2	1988312.5	1958548	1944145.6	1931268.4	2001547.2	1927930.7	1946717.8	
95 Mo [2]	CPS	25.6	2290.3	21981.4	44290.1	88477.2	182871.4	441771.9	906166.7	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 160518A2

Instrument ID: ICPMS-02

Analyte	Data File	A0518002.D	A0518004.D	A0518005.D	A0518006.D	A0518007.D	A0518008.D	A0518009.D	A0518010.D	
	Acq. Date-Time	05/18/2016 04:40 PM	05/18/2016 04:51 PM	05/18/2016 04:56 PM	05/18/2016 05:02 PM	05/18/2016 05:07 PM	05/18/2016 05:13 PM	05/18/2016 05:18 PM	05/18/2016 05:24 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	141065.1	135853.4	131223.6	126171.7	118719.3	110108.5	106063.7	105703.4	
52 Cr [2]	CPS	1399.8	6173.3	50873.5	97742.5	182109.6	341149.4	816760.5	1655583.6	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 160520A

Instrument ID: ICPMS-02

Analyte	Data File	A0520002.D	A0520004.D	A0520005.D	A0520006.D	A0520007.D	A0520008.D	A0520009.D	A0520010.D	
	Acq. Date-Time	05/20/2016 09:05 AM	05/20/2016 09:16 AM	05/20/2016 09:21 AM	05/20/2016 09:27 AM	05/20/2016 09:33 AM	05/20/2016 09:38 AM	05/20/2016 09:44 AM	05/20/2016 09:49 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	95041	95006.5	95499.7	95305.9	94018.9	93870.4	91188.9	90526.4	
78 Se [1]	CPS	2.2	254.5	2333.6	4913.2	9434.2	19146.4	47003.5	93083.8	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.570	0.10	10.00	0	95.7	90	110				
Manganese	95.247	0.50	100.0	0	95.2	90	110				
Molybdenum	10.103	0.50	10.00	0	101	90	110				
Selenium	10.227	0.50	10.00	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ZZZZZZ**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.093	0.10	0.1000	0	92.6	80	120				
Manganese	0.507	0.50	0.5000	0	101	80	120				
Molybdenum	0.536	0.50	0.5000	0	107	80	120				
Selenium	0.509	0.50	0.5000	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.008	0.10	20.00	0	95.0	90	110				
Manganese	20.152	0.50	20.00	0	101	90	110				
Molybdenum	19.948	0.50	20.00	0	99.7	90	110				
Selenium	20.745	0.50	20.00	0	104	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.168	0.10	20.00	0	95.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.911	0.50	20.00	0	99.6	90	110				
Molybdenum	20.005	0.50	20.00	0	100	90	110				
Selenium	20.069	0.50	20.00	0	100	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ZZZZZZ**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.076	0.10	0.1000	0	76.5	70	130				
Manganese	0.500	0.50	0.5000	0	100	70	130				
Molybdenum	0.487	0.50	0.5000	0	97.3	70	130				
Selenium	0.536	0.50	0.5000	0	107	70	130				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.331	0.10	20.00	0	96.7	90	110				
Manganese	20.188	0.50	20.00	0	101	90	110				
Molybdenum	20.158	0.50	20.00	0	101	90	110				
Selenium	20.149	0.50	20.00	0	101	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	18.778	0.10	20.00	0	93.9	90	110				
Manganese	20.088	0.50	20.00	0	100	90	110				
Molybdenum	19.854	0.50	20.00	0	99.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.699	0.50	20.00	0	98.5	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.269	0.10	20.00	0	96.3	90	110				
Manganese	20.366	0.50	20.00	0	102	90	110				
Molybdenum	20.416	0.50	20.00	0	102	90	110				
Selenium	18.714	0.50	20.00	0	93.6	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	18.846	0.10	20.00	0	94.2	90	110				
Manganese	21.340	0.50	20.00	0	107	90	110				
Molybdenum	20.479	0.50	20.00	0	102	90	110				
Selenium	19.349	0.50	20.00	0	96.7	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ZZZZZZ**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	95.2	70	130				
Manganese	0.556	0.50	0.5000	0	111	70	130				
Molybdenum	0.533	0.50	0.5000	0	107	70	130				
Selenium	0.458	0.50	0.5000	0	91.7	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.355	0.10	20.00	0	96.8	90	110				
Manganese	20.521	0.50	20.00	0	103	90	110				
Molybdenum	20.207	0.50	20.00	0	101	90	110				
Selenium	20.119	0.50	20.00	0	101	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCV**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.365	0.10	20.00	0	96.8	90	110				
Manganese	20.600	0.50	20.00	0	103	90	110				
Molybdenum	20.363	0.50	20.00	0	102	90	110				
Selenium	18.652	0.50	20.00	0	93.3	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ZZZZZZ**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.108	0.10	0.1000	0	108	70	130				
Manganese	0.595	0.50	0.5000	0	119	70	130				
Molybdenum	0.477	0.50	0.5000	0	95.5	70	130				
Selenium	0.546	0.50	0.5000	0	109	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ICV**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	103.952	0.50	100.0	0	104	90	110				
Molybdenum	10.375	0.50	10.00	0	104	90	110				
Selenium	10.599	0.50	10.00	0	106	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ZZZZZZ**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.536	0.50	0.5000	0	107	80	120				
Molybdenum	0.542	0.50	0.5000	0	108	80	120				
Selenium	0.517	0.50	0.5000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCV**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.564	0.50	20.00	0	103	90	110				
Molybdenum	19.726	0.50	20.00	0	98.6	90	110				
Selenium	20.436	0.50	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCV**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.692	0.50	20.00	0	103	90	110				
Molybdenum	19.673	0.50	20.00	0	98.4	90	110				
Selenium	19.934	0.50	20.00	0	99.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ZZZZZZ**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.555	0.50	0.5000	0	111	70	130				
Molybdenum	0.503	0.50	0.5000	0	101	70	130				
Selenium	0.543	0.50	0.5000	0	109	70	130				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCV**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.751	0.50	20.00	0	104	90	110				
Molybdenum	19.508	0.50	20.00	0	97.5	90	110				
Selenium	20.161	0.50	20.00	0	101	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCV**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329856**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.643	0.50	20.00	0	103	90	110				
Molybdenum	19.705	0.50	20.00	0	98.5	90	110				
Selenium	18.828	0.50	20.00	0	94.1	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCV**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.850	0.50	20.00	0	104	90	110				
Molybdenum	19.592	0.50	20.00	0	98.0	90	110				
Selenium	19.863	0.50	20.00	0	99.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ZZZZZZ**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.561	0.50	0.5000	0	112	70	130				
Molybdenum	0.517	0.50	0.5000	0	103	70	130				
Selenium	0.569	0.50	0.5000	0	114	70	130				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCV**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.622	0.50	20.00	0	103	90	110				
Molybdenum	19.364	0.50	20.00	0	96.8	90	110				
Selenium	21.078	0.50	20.00	0	105	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCV**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.841	0.50	20.00	0	104	90	110				
Molybdenum	19.645	0.50	20.00	0	98.2	90	110				
Selenium	19.729	0.50	20.00	0	98.6	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ZZZZZZ**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.564	0.50	0.5000	0	113	70	130				
Molybdenum	0.506	0.50	0.5000	0	101	70	130				
Selenium	0.559	0.50	0.5000	0	112	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **ICV**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.406	1.0	10.00	0	94.1	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **ZZZZZZ**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.990	1.0	1.000	0	99.0	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCV**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.291	1.0	20.00	0	96.5	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCV**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.678	1.0	20.00	0	98.4	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **ZZZZZZ**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.018	1.0	1.000	0	102	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCV**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.445	1.0	20.00	0	97.2	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCV**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.443	1.0	20.00	0	97.2	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCV**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.378	1.0	20.00	0	96.9	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCV**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.528	1.0	20.00	0	97.6	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **ZZZZZZ**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.991	1.0	1.000	0	99.1	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCV7	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108414
Client ID:	CCV	Batch ID:	R108414	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.490	1.0	20.00	0	97.4	90	110				

Sample ID	CCV8	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108414
Client ID:	CCV	Batch ID:	R108414	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324727

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.419	1.0	20.00	0	97.1	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108414
Client ID:	ZZZZZZ	Batch ID:	R108414	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.967	1.0	1.000	0	96.7	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **ICV**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.454	1.0	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **ZZZZZZ**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.099	1.0	1.000	0	110	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCV**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.291	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCV**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.332	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **ZZZZZZ**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.105	1.0	1.000	0	111	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCV**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.046	1.0	20.00	0	100	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCV**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.770	1.0	20.00	0	98.9	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCV**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.994	1.0	20.00	0	100	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **ZZZZZZ**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.011	1.0	1.000	0	101	70	130				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCV**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.079	1.0	20.00	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCV**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.856	1.0	20.00	0	99.3	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **ZZZZZZ**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.016	1.0	1.000	0	102	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **ICV**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333395**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.196	1.0	10.00	0	102	90	110				

Sample ID: **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **ZZZZZZ**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.999	1.0	1.000	0	99.9	80	120				

Sample ID: **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **CCV**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.085	1.0	20.00	0	95.4	90	110				

Sample ID: **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **CCV**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.075	1.0	20.00	0	95.4	90	110				

Sample ID: **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **CCV**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.921	1.0	20.00	0	94.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **ZZZZZZ**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.971	1.0	1.000	0	97.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **ICV**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.209	0.50	10.00	0	102	90	110				

Sample ID: **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **ZZZZZZ**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.533	0.50	0.5000	0	107	80	120				

Sample ID: **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **CCV**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.230	0.50	20.00	0	91.2	90	110				

Sample ID: **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **ZZZZZZ**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.537	0.50	0.5000	0	107	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.165	0.50									
Selenium	0.028	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.080	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.074	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.064	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.072	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.084	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.146	0.50									
Molybdenum	0.126	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.066	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **CCB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.162	0.50									
Molybdenum	0.073	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ICB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.051	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **CCB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.071	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **ICB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.078	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.032	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.031	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.037	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.021	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.031	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **CCB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.024	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **ICB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.033	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.030	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.065	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **CCB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **ICB**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **CCB**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **CCB**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **CCB**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **ICB**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID: **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **CCB**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICSA**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.065	0.50									
Selenium	0.029	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICSAB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.078	0.10	20.00	0	100	80	120				
Manganese	17.482	0.50	20.00	0	87.4	80	120				
Molybdenum	22.971	0.50	20.00	0	115	80	120				
Selenium	19.688	0.50	20.00	0	98.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICSA**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICSAB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.479	0.10	20.00	0	102	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICSAB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2323575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.454	0.50	20.00	0	87.3	80	120				
Molybdenum	22.686	0.50	20.00	0	113	80	120				
Selenium	19.722	0.50	20.00	0	98.6	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICSA**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.053	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICSAB**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.396	0.10	20.00	0	102	80	120				
Manganese	18.019	0.50	20.00	0	90.1	80	120				
Molybdenum	23.311	0.50	20.00	0	117	80	120				
Selenium	18.265	0.50	20.00	0	91.3	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108392**
Client ID: **ICSA**	Batch ID: **R108392**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108392
Client ID:	ICSA	Batch ID:	R108392	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324950

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108392
Client ID:	ICSAB	Batch ID:	R108392	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.731	0.10	20.00	0	98.7	80	120				
Manganese	17.734	0.50	20.00	0	88.7	80	120				
Molybdenum	22.853	0.50	20.00	0	114	80	120				
Selenium	19.475	0.50	20.00	0	97.4	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ICSA**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.053	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ICSAB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.404	0.50	20.00	0	102	80	120				
Molybdenum	22.716	0.50	20.00	0	114	80	120				
Selenium	18.082	0.50	20.00	0	90.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ICSA**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108508**
Client ID: **ICSAB**	Batch ID: **R108508**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.574	0.50	20.00	0	103	80	120				
Molybdenum	22.479	0.50	20.00	0	112	80	120				
Selenium	17.976	0.50	20.00	0	89.9	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108508
Client ID:	ICSA	Batch ID:	R108508	TestNo:	EPA 6020			Analysis Date:	5/16/2016	SeqNo:	2329871

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.032	0.50									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108508
Client ID:	ICSAB	Batch ID:	R108508	TestNo:	EPA 6020			Analysis Date:	5/16/2016	SeqNo:	2329872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.334	0.50	20.00	0	107	80	120				
Molybdenum	22.490	0.50	20.00	0	112	80	120				
Selenium	18.111	0.50	20.00	0	90.6	80	120				

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108508
Client ID:	ICSA	Batch ID:	R108508	TestNo:	EPA 6020			Analysis Date:	5/16/2016	SeqNo:	2329898

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108508
Client ID:	ICSAB	Batch ID:	R108508	TestNo:	EPA 6020			Analysis Date:	5/16/2016	SeqNo:	2329899

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.466	0.50	20.00	0	107	80	120				
Molybdenum	22.617	0.50	20.00	0	113	80	120				
Selenium	17.664	0.50	20.00	0	88.3	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108414
Client ID:	ICSA	Batch ID:	R108414	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.118	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108414
Client ID:	ICSAB	Batch ID:	R108414	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324032

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.207	1.0	20.00	0	101	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108414
Client ID:	ICSA	Batch ID:	R108414	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324058

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.200	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108414
Client ID:	ICSAB	Batch ID:	R108414	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324059

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.424	1.0	20.00	0	102	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108414
Client ID:	ICSA	Batch ID:	R108414	TestNo:	EPA 6020			Analysis Date:	5/11/2016	SeqNo:	2324704

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.187	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **ICSAB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.456	1.0	20.00	0	97.3	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **ICSA**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.165	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108414**
Client ID: **ICSAB**	Batch ID: **R108414**	TestNo: **EPA 6020**		Analysis Date: **5/11/2016**	SeqNo: **2324731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.091	1.0	20.00	0	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108504
Client ID:	ICSA	Batch ID:	R108504	TestNo:	EPA 6020			Analysis Date:	5/16/2016	SeqNo:	2329701

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.163	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108504
Client ID:	ICSAB	Batch ID:	R108504	TestNo:	EPA 6020			Analysis Date:	5/16/2016	SeqNo:	2329702

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.219	1.0	20.00	0	96.1	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108504
Client ID:	ICSA	Batch ID:	R108504	TestNo:	EPA 6020			Analysis Date:	5/16/2016	SeqNo:	2329728

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.150	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108504
Client ID:	ICSAB	Batch ID:	R108504	TestNo:	EPA 6020			Analysis Date:	5/16/2016	SeqNo:	2329729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.307	1.0	20.00	0	96.5	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108504
Client ID:	ICSA	Batch ID:	R108504	TestNo:	EPA 6020			Analysis Date:	5/16/2016	SeqNo:	2329767

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.161	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **ICSAB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.155	1.0	20.00	0	95.8	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **ICSA**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.140	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108504**
Client ID: **ICSAB**	Batch ID: **R108504**	TestNo: **EPA 6020**		Analysis Date: **5/16/2016**	SeqNo: **2329795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.158	1.0	20.00	0	95.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **ICSA**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.103	1.0									

Sample ID: **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **ICSAB**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.920	1.0	20.00	0	94.6	80	120				

Sample ID: **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **ICSA**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.112	1.0									

Sample ID: **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108587**
Client ID: **ICSAB**	Batch ID: **R108587**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.736	1.0	20.00	0	93.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **ICSA**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.035	0.50									

Sample ID: **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **ICSAB**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	17.781	0.50	20.00	0	88.9	80	120				

Sample ID: **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **ICSA**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID: **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108589**
Client ID: **ICSAB**	Batch ID: **R108589**	TestNo: **EPA 6020**		Analysis Date: **5/20/2016**	SeqNo: **2333526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	16.276	0.50	20.00	0	81.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	82331.3	82331.3	100	PASS	70-130	50396.4	50396.4	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	85502.4	82331.3	103.85	PASS	70-130	52231.1	50396.4	103.64	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	84763.3	82331.3	102.95	PASS	70-130	52715.9	50396.4	104.6	PASS	70-130
Std3-5/50 ppb	ICAL	1	85411.1	82331.3	103.74	PASS	70-130	53075	50396.4	105.32	PASS	70-130
Std4-10/100 ppb	ICAL	1	84040	82331.3	102.08	PASS	70-130	52291.1	50396.4	103.76	PASS	70-130
Std5-20/200 ppb	ICAL	1	81598.7	82331.3	99.11	PASS	70-130	51258.2	50396.4	101.71	PASS	70-130
Std6-40/400 ppb	ICAL	1	84252.1	82331.3	102.33	PASS	70-130	52168.7	50396.4	103.52	PASS	70-130
Std7-100/1000 ppb	ICAL	1	81008.2	82331.3	98.39	PASS	70-130	50307.2	50396.4	99.82	PASS	70-130
Std8-200/2000 ppb	ICAL	1	80609.6	82331.3	97.91	PASS	70-130	49682	50396.4	98.58	PASS	70-130
ICV	ICV	1	72729	82331.3	88.34	PASS	70-130	45049.5	50396.4	89.39	PASS	70-130
ICB	ICB	1	77118.9	82331.3	93.67	PASS	70-130	48680	50396.4	96.59	PASS	70-130
LLICV	CCV1	1	84518.7	82331.3	102.66	PASS	70-130	53992.6	50396.4	107.14	PASS	70-130
ICSA1	ICSA	1	94359.5	82331.3	114.61	PASS	70-130	55114.9	50396.4	109.36	PASS	70-130
ICSAB1	ICSAB	1	77423.4	82331.3	94.039	PASS	70-130	47943.6	50396.4	95.13	PASS	70-130
MB-58354	MBLK	1	75210.1	82331.3	91.35	PASS	70-130	46294.4	50396.4	91.86	PASS	70-130
LCS-58354	LCS	1	79204.2	82331.3	96.2	PASS	70-130	48797.3	50396.4	96.83	PASS	70-130
N019653-001B	SAMP	1	81389.2	82331.3	98.86	PASS	70-130	49588.4	50396.4	98.4	PASS	70-130
N019628-006B	SAMP	1	76813.2	82331.3	93.3	PASS	70-130	41445.7	50396.4	82.24	PASS	70-130
N019628-006B	SAMP	5	84759.9	82331.3	102.95	PASS	70-130	49729.9	50396.4	98.68	PASS	70-130
N019628-006B-PS	PS	1	75926.8	82331.3	92.22	PASS	70-130	40964.5	50396.4	81.28	PASS	70-130
N019628-006B-MS	MS	1	74294.9	82331.3	90.24	PASS	70-130	39859.5	50396.4	79.092	PASS	70-130
N019628-006B-MSD	MSD	1	74810.7	82331.3	90.87	PASS	70-130	40614.8	50396.4	80.59	PASS	70-130
N019654-001B	SAMP	1	92948.5	82331.3	112.9	PASS	70-130	54979.8	50396.4	109.1	PASS	70-130
N019654-001B-MS	MS	1	90417	82331.3	109.82	PASS	70-130	54038	50396.4	107.23	PASS	70-130
CCV1	CCV	1	100448.4	82331.3	122.01	PASS	70-130	63232.8	50396.4	125.47	PASS	70-130
CCB1	CCB	1	96333.9	82331.3	117.01	PASS	70-130	61344.9	50396.4	121.72	PASS	70-130
N019628-006B	SAMP	1	70728.4	82331.3	85.91	PASS	70-130	38762.5	50396.4	76.92	PASS	70-130
N019628-006B	SAMP	25	90298.5	82331.3	109.68	PASS	70-130	56128.2	50396.4	111.37	PASS	70-130
N019628-006B-PS	PS	5	79535.4	82331.3	96.6	PASS	70-130	48002.5	50396.4	95.25	PASS	70-130
N019628-006B-MS	MS	5	78878	82331.3	95.81	PASS	70-130	47891.1	50396.4	95.029	PASS	70-130
N019628-006B-MSD	MSD	5	76555.5	82331.3	92.98	PASS	70-130	46354.7	50396.4	91.98	PASS	70-130
N019628-001B	SAMP	1	64953	82331.3	78.89	PASS	70-130	35955	50396.4	71.34	PASS	70-130
N019628-002B	SAMP	1	63365.9	82331.3	76.96	PASS	70-130	35643.1	50396.4	70.73	PASS	70-130
N019628-003B	SAMP	1	65678	82331.3	79.77	PASS	70-130	36294.7	50396.4	72.018	PASS	70-130
N019628-004B	SAMP	1	64734.2	82331.3	78.63	PASS	70-130	37676.8	50396.4	74.76	PASS	70-130
N019533-009B	SAMP	1	78532.8	82331.3	95.39	PASS	70-130	49717.7	50396.4	98.65	PASS	70-130
CCV2	CCV	1	86787	82331.3	105.41	PASS	70-130	56422.8	50396.4	111.96	PASS	70-130
CCB2	CCB	1	82716.4	82331.3	100.47	PASS	70-130	54397.2	50396.4	107.94	PASS	70-130
LLCCV1	CCV2	1	88754	82331.3	107.8	PASS	70-130	60092.4	50396.4	119.24	PASS	70-130
ICSA2	ICSA	1	93384.8	82331.3	113.43	PASS	70-130	59249.5	50396.4	117.57	PASS	70-130
ICSAB2	ICSAB	1	83089.7	82331.3	100.92	PASS	70-130	51527.8	50396.4	102.25	PASS	70-130

INTERNAL STANDARD: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019628-005B	SAMP	1	74614.4	82331.3	90.63	PASS	70-130	47128.9	50396.4	93.52	PASS	70-130
N019628-007B	SAMP	1	63746	82331.3	77.43	PASS	70-130	36652.1	50396.4	72.73	PASS	70-130
N019651-003B	SAMP	1	77530.8	82331.3	94.17	PASS	70-130	50180.3	50396.4	99.57	PASS	70-130
N019651-004B	SAMP	1	82129.4	82331.3	99.75	PASS	70-130	53480.8	50396.4	106.12	PASS	70-130
N019654-002B	SAMP	1	82150.3	82331.3	99.78	PASS	70-130	53060.4	50396.4	105.29	PASS	70-130
N019654-003B	SAMP	1	84221	82331.3	102.3	PASS	70-130	54608.7	50396.4	108.36	PASS	70-130
N019654-005B	SAMP	1	85558.7	82331.3	103.92	PASS	70-130	55967.9	50396.4	111.06	PASS	70-130
N019654-006B	SAMP	1	75882.4	82331.3	92.17	PASS	70-130	48445.1	50396.4	96.13	PASS	70-130
N019654-007B	SAMP	1	82365.9	82331.3	100.04	PASS	70-130	53775	50396.4	106.7	PASS	70-130
N019654-008B	SAMP	1	79599.3	82331.3	96.68	PASS	70-130	50822.3	50396.4	100.85	PASS	70-130
CCV3	CCV	1	90148.2	82331.3	109.49	PASS	70-130	59878.3	50396.4	118.81	PASS	70-130
CCB3	CCB	1	85355.5	82331.3	103.67	PASS	70-130	58340.5	50396.4	115.76	PASS	70-130
N019654-009B	SAMP	1	77827.4	82331.3	94.53	PASS	70-130	50506.7	50396.4	100.22	PASS	70-130
N019654-010B	SAMP	1	78209.4	82331.3	94.99	PASS	70-130	51086.3	50396.4	101.37	PASS	70-130
N019655-001B	SAMP	1	84255.8	82331.3	102.34	PASS	70-130	55228.8	50396.4	109.59	PASS	70-130
CCV4	CCV	1	72767.2	82331.3	88.38	PASS	70-130	49598.6	50396.4	98.42	PASS	70-130
CCB4	CCB	1	70718.4	82331.3	85.89	PASS	70-130	48516.4	50396.4	96.27	PASS	70-130
CCV5	CCV	1	70774.5	82331.3	85.96	PASS	70-130	49042.2	50396.4	97.31	PASS	70-130
CCB5	CCB	1	67264.3	82331.3	81.7	PASS	70-130	47582.6	50396.4	94.42	PASS	70-130
CCV6	CCV	1	70146.1	82331.3	85.2	PASS	70-130	49796.8	50396.4	98.81	PASS	70-130
CCB6	CCB	1	66162.9	82331.3	80.36	PASS	70-130	47078.7	50396.4	93.42	PASS	70-130
LLCCV2	CCV2	1	73283.8	82331.3	89.011	PASS	70-130	51007.3	50396.4	101.21	PASS	70-130
ICSA3	ICSA	1	78714	82331.3	95.61	PASS	70-130	50875.6	50396.4	100.95	PASS	70-130
ICSAB3	ICSAB	1	71402.5	82331.3	86.73	PASS	70-130	46266.5	50396.4	91.81	PASS	70-130
N019628-003B	SAMP	5	62016.5	82331.3	75.33	PASS	70-130	39796.3	50396.4	78.97	PASS	70-130
N019628-004B	SAMP	5	58252.9	82331.3	70.75	PASS	70-130	38323.6	50396.4	76.044	PASS	70-130
N019628-004B	SAMP	25	61053.9	82331.3	74.16	PASS	70-130	42508.5	50396.4	84.35	PASS	70-130
N019628-005B	SAMP	100	71474.8	82331.3	86.81	PASS	70-130	50995	50396.4	101.19	PASS	70-130
N019628-007B	SAMP	5	63320.2	82331.3	76.91	PASS	70-130	41621.7	50396.4	82.59	PASS	70-130
N019654-005B	SAMP	1	64114.4	82331.3	77.87	PASS	70-130	43917.6	50396.4	87.14	PASS	70-130
N019654-006B	SAMP	5	58605.2	82331.3	71.18	PASS	70-130	41525.9	50396.4	82.4	PASS	70-130
CCV7	CCV	1	58562.9	82331.3	71.13	PASS	70-130	40714	50396.4	80.79	PASS	70-130
CCB7	CCB	1	56082.1	82331.3	68.12	NR!	70-130	39546.6	50396.4	78.47	PASS	70-130
N019628-007B	SAMP	1	58724.5	82331.3	71.33	PASS	70-130	35181	50396.4	69.81	NR!	70-130
CCV8	CCV	1	71626.7	82331.3	87	PASS	70-130	49281.9	50396.4	97.79	PASS	70-130
CCB8	CCB	1	65044.5	82331.3	79.003	PASS	70-130	45231.2	50396.4	89.75	PASS	70-130
LLCCV3	CCV2	1	70635.6	82331.3	85.79	PASS	70-130	48398.1	50396.4	96.035	PASS	70-130
ICSA4	ICSA	1	71721.4	82331.3	87.11	PASS	70-130	46399.1	50396.4	92.068	PASS	70-130
ICSAB4	ICSAB	1	60283.2	82331.3	73.22	PASS	70-130	40129.1	50396.4	79.63	PASS	70-130

INTERNAL STANDARD: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	52239.9	52239.9	100	PASS	70-130	1455078.6	1455078.6	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	54277.8	52239.9	103.9	PASS	70-130	1528860.5	1455078.6	105.07	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	55392.5	52239.9	106.04	PASS	70-130	1531334.4	1455078.6	105.24	PASS	70-130
Std3-5/50 ppb	ICAL	1	54269.9	52239.9	103.89	PASS	70-130	1533860	1455078.6	105.41	PASS	70-130
Std4-10/100 ppb	ICAL	1	53840.6	52239.9	103.06	PASS	70-130	1532356.3	1455078.6	105.31	PASS	70-130
Std5-20/200 ppb	ICAL	1	52777.5	52239.9	101.03	PASS	70-130	1493709.4	1455078.6	102.65	PASS	70-130
Std6-40/400 ppb	ICAL	1	53601.1	52239.9	102.61	PASS	70-130	1529942.1	1455078.6	105.14	PASS	70-130
Std7-100/1000 ppb	ICAL	1	52434	52239.9	100.37	PASS	70-130	1491969.4	1455078.6	102.54	PASS	70-130
Std8-200/2000 ppb	ICAL	1	51909	52239.9	99.37	PASS	70-130	1458886.2	1455078.6	100.26	PASS	70-130
ICV	ICV	1	46887.4	52239.9	89.75	PASS	70-130	1335495	1455078.6	91.78	PASS	70-130
ICB	ICB	1	50507.9	52239.9	96.68	PASS	70-130	1431947.4	1455078.6	98.41	PASS	70-130
LLICV	CCV1	1	54918.9	52239.9	105.13	PASS	70-130	1568742.1	1455078.6	107.81	PASS	70-130
ICSA1	ICSA	1	56403.7	52239.9	107.97	PASS	70-130	1440252.2	1455078.6	98.98	PASS	70-130
ICSAB1	ICSAB	1	45298.4	52239.9	86.71	PASS	70-130	1255796.8	1455078.6	86.3	PASS	70-130
MB-58354	MBLK	1	48986.5	52239.9	93.77	PASS	70-130	1381532.6	1455078.6	94.95	PASS	70-130
LCS-58354	LCS	1	50776.5	52239.9	97.2	PASS	70-130	1410892.3	1455078.6	96.96	PASS	70-130
N019653-001B	SAMP	1	51427.5	52239.9	98.44	PASS	70-130	1335747.9	1455078.6	91.8	PASS	70-130
N019628-006B	SAMP	1	41296.5	52239.9	79.052	PASS	70-130	975665	1455078.6	67.052	NR!	70-130
N019628-006B	SAMP	5	51546.8	52239.9	98.67	PASS	70-130	1265834	1455078.6	86.99	PASS	70-130
N019628-006B-PS	PS	1	42739.2	52239.9	81.81	PASS	70-130	984791.5	1455078.6	67.68	NR!	70-130
N019628-006B-MS	MS	1	42139.6	52239.9	80.67	PASS	70-130	974138.7	1455078.6	66.95	NR!	70-130
N019628-006B-MSD	MSD	1	40792.9	52239.9	78.088	PASS	70-130	999321.2	1455078.6	68.68	NR!	70-130
N019654-001B	SAMP	1	56864.3	52239.9	108.85	PASS	70-130	1466320	1455078.6	100.77	PASS	70-130
N019654-001B-MS	MS	1	56566.6	52239.9	108.28	PASS	70-130	1418590.3	1455078.6	97.49	PASS	70-130
CCV1	CCV	1	64725.5	52239.9	123.9	PASS	70-130	1766034.2	1455078.6	121.37	PASS	70-130
CCB1	CCB	1	62123.5	52239.9	118.92	PASS	70-130	1730088.3	1455078.6	118.9	PASS	70-130
N019628-006B	SAMP	1	39676.8	52239.9	75.95	PASS	70-130	945357.2	1455078.6	64.97	NR!	70-130
N019628-006B	SAMP	25	57319.5	52239.9	109.72	PASS	70-130	1509379.4	1455078.6	103.73	PASS	70-130
N019628-006B-PS	PS	5	49013.4	52239.9	93.82	PASS	70-130	1244330	1455078.6	85.52	PASS	70-130
N019628-006B-MS	MS	5	46003.5	52239.9	88.062	PASS	70-130	1240618.3	1455078.6	85.26	PASS	70-130
N019628-006B-MSD	MSD	5	46764.5	52239.9	89.52	PASS	70-130	1204837.4	1455078.6	82.8	PASS	70-130
N019628-001B	SAMP	1	36692.1	52239.9	70.24	PASS	70-130	887875.9	1455078.6	61.019	NR!	70-130
N019628-002B	SAMP	1	33922.7	52239.9	64.94	NR!	70-130	891286.1	1455078.6	61.25	NR!	70-130
N019628-003B	SAMP	1	31556.9	52239.9	60.41	NR!	70-130	892950.5	1455078.6	61.37	NR!	70-130
N019628-004B	SAMP	1	34007.5	52239.9	65.099	NR!	70-130	937481.7	1455078.6	64.43	NR!	70-130
N019533-009B	SAMP	1	47458.8	52239.9	90.85	PASS	70-130	1343995.3	1455078.6	92.37	PASS	70-130
CCV2	CCV	1	53707.1	52239.9	102.81	PASS	70-130	1586840.8	1455078.6	109.06	PASS	70-130
CCB2	CCB	1	50610.3	52239.9	96.88	PASS	70-130	1556726.2	1455078.6	106.99	PASS	70-130
LLCCV1	CCV2	1	54778.3	52239.9	104.86	PASS	70-130	1686552	1455078.6	115.91	PASS	70-130
ICSA2	ICSA	1	51464.2	52239.9	98.52	PASS	70-130	1546902.6	1455078.6	106.31	PASS	70-130
ICSAB2	ICSAB	1	51293.5	52239.9	98.19	PASS	70-130	1357243.7	1455078.6	93.28	PASS	70-130

INTERNAL STANDARD: 160511A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N019628-005B	SAMP	1	45427.4	52239.9	86.96	PASS	70-130	1239623.1	1455078.6	85.19	PASS	70-130
N019628-007B	SAMP	1	32141.3	52239.9	61.53	NR!	70-130	896151.7	1455078.6	61.59	NR!	70-130
N019651-003B	SAMP	1	48097.3	52239.9	92.07	PASS	70-130	1340411	1455078.6	92.12	PASS	70-130
N019651-004B	SAMP	1	48833.1	52239.9	93.48	PASS	70-130	1425730.3	1455078.6	97.98	PASS	70-130
N019654-002B	SAMP	1	51146.6	52239.9	97.91	PASS	70-130	1414112.4	1455078.6	97.18	PASS	70-130
N019654-003B	SAMP	1	51296	52239.9	98.19	PASS	70-130	1455780.1	1455078.6	100.05	PASS	70-130
N019654-005B	SAMP	1	52839.7	52239.9	101.15	PASS	70-130	1498278.9	1455078.6	102.97	PASS	70-130
N019654-006B	SAMP	1	48283.4	52239.9	92.43	PASS	70-130	1279692.1	1455078.6	87.95	PASS	70-130
N019654-007B	SAMP	1	51125.4	52239.9	97.87	PASS	70-130	1419490.7	1455078.6	97.55	PASS	70-130
N019654-008B	SAMP	1	51369.5	52239.9	98.33	PASS	70-130	1310842.1	1455078.6	90.087	PASS	70-130
CCV3	CCV	1	57619.1	52239.9	110.3	PASS	70-130	1670121.6	1455078.6	114.78	PASS	70-130
CCB3	CCB	1	55664.6	52239.9	106.56	PASS	70-130	1631971.2	1455078.6	112.16	PASS	70-130
N019654-009B	SAMP	1	47370.8	52239.9	90.68	PASS	70-130	1322365.2	1455078.6	90.88	PASS	70-130
N019654-010B	SAMP	1	48957.5	52239.9	93.72	PASS	70-130	1353939.2	1455078.6	93.049	PASS	70-130
N019655-001B	SAMP	1	52095.1	52239.9	99.72	PASS	70-130	1465331	1455078.6	100.7	PASS	70-130
CCV4	CCV	1	46589.7	52239.9	89.18	PASS	70-130	1374223.8	1455078.6	94.44	PASS	70-130
CCB4	CCB	1	47520	52239.9	90.96	PASS	70-130	1347569.1	1455078.6	92.61	PASS	70-130
CCV5	CCV	1	49665.6	52239.9	95.072	PASS	70-130	1340943.1	1455078.6	92.16	PASS	70-130
CCB5	CCB	1	46522.7	52239.9	89.056	PASS	70-130	1319261.5	1455078.6	90.67	PASS	70-130
CCV6	CCV	1	50247	52239.9	96.19	PASS	70-130	1338693.8	1455078.6	92.002	PASS	70-130
CCB6	CCB	1	46527.1	52239.9	89.064	PASS	70-130	1279316.9	1455078.6	87.92	PASS	70-130
LLCCV2	CCV2	1	51692.6	52239.9	98.95	PASS	70-130	1401310.7	1455078.6	96.3	PASS	70-130
ICSA3	ICSA	1	48874	52239.9	93.56	PASS	70-130	1316407.3	1455078.6	90.47	PASS	70-130
ICSAB3	ICSAB	1	46779.3	52239.9	89.55	PASS	70-130	1171697.5	1455078.6	80.52	PASS	70-130
N019628-003B	SAMP	5	43430.8	52239.9	83.14	PASS	70-130	978392.3	1455078.6	67.24	NR!	70-130
N019628-004B	SAMP	5	41536	52239.9	79.51	PASS	70-130	956898.8	1455078.6	65.76	NR!	70-130
N019628-004B	SAMP	25	42265.6	52239.9	80.91	PASS	70-130	1085655.5	1455078.6	74.61	PASS	70-130
N019628-005B	SAMP	100	50695.2	52239.9	97.043	PASS	70-130	1377670.8	1455078.6	94.68	PASS	70-130
N019628-007B	SAMP	5	40874.5	52239.9	78.24	PASS	70-130	1034193.3	1455078.6	71.075	PASS	70-130
N019654-005B	SAMP	1	44218.6	52239.9	84.65	PASS	70-130	1138004.2	1455078.6	78.21	PASS	70-130
N019654-006B	SAMP	5	40442.1	52239.9	77.42	PASS	70-130	1083916.3	1455078.6	74.49	PASS	70-130
CCV7	CCV	1	39361.8	52239.9	75.35	PASS	70-130	1140456.7	1455078.6	78.38	PASS	70-130
CCB7	CCB	1	38941.8	52239.9	74.54	PASS	70-130	1104377.1	1455078.6	75.9	PASS	70-130
N019628-007B	SAMP	1	30863.3	52239.9	59.08	NR!	70-130	826018	1455078.6	56.77	NR!	70-130
CCV8	CCV	1	49420.2	52239.9	94.6	PASS	70-130	1336680.1	1455078.6	91.86	PASS	70-130
CCB8	CCB	1	44888.1	52239.9	85.93	PASS	70-130	1234107.8	1455078.6	84.81	PASS	70-130
LLCCV3	CCV2	1	47611.4	52239.9	91.14	PASS	70-130	1371182.7	1455078.6	94.23	PASS	70-130
ICSA4	ICSA	1	43374.1	52239.9	83.029	PASS	70-130	1223169.4	1455078.6	84.062	PASS	70-130
ICSAB4	ICSAB	1	38097.6	52239.9	72.93	PASS	70-130	1029758	1455078.6	70.77	PASS	70-130

INTERNAL STANDARD: 160516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	90612.7	90612.7	100	PASS	70-130	69972.7	69972.7	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	101236.6	90612.7	111.72	PASS	70-130	77991.1	69972.7	111.46	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	99050.6	90612.7	109.31	PASS	70-130	77642.5	69972.7	110.96	PASS	70-130
Std3-5/50 ppb	ICAL	1	98687.6	90612.7	108.91	PASS	70-130	77457.4	69972.7	110.7	PASS	70-130
Std4-10/100 ppb	ICAL	1	97658.9	90612.7	107.78	PASS	70-130	76115.7	69972.7	108.78	PASS	70-130
Std5-20/200 ppb	ICAL	1	96322.2	90612.7	106.3	PASS	70-130	75415.8	69972.7	107.78	PASS	70-130
Std6-40/400 ppb	ICAL	1	99715.5	90612.7	110.05	PASS	70-130	77468.9	69972.7	110.71	PASS	70-130
Std7-100/1000 ppb	ICAL	1	98604.4	90612.7	108.82	PASS	70-130	75058.6	69972.7	107.27	PASS	70-130
Std8-200/2000 ppb	ICAL	1	99897.3	90612.7	110.25	PASS	70-130	74582.4	69972.7	106.59	PASS	70-130
ICV	ICV	1	90952.5	90612.7	100.38	PASS	70-130	68396.4	69972.7	97.75	PASS	70-130
ICB	ICB	1	91284.3	90612.7	100.74	PASS	70-130	70928.2	69972.7	101.37	PASS	70-130
LLICV	CCV1	1	89316	90612.7	98.57	PASS	70-130	68379.4	69972.7	97.72	PASS	70-130
ICSA1	ICSA	1	110600.7	90612.7	122.06	PASS	70-130	69497.1	69972.7	99.32	PASS	70-130
ICSAB1	ICSAB	1	115908.3	90612.7	127.92	PASS	70-130	74145.3	69972.7	105.96	PASS	70-130
CCV1	CCV	1	102832.3	90612.7	113.49	PASS	70-130	81046.8	69972.7	115.83	PASS	70-130
CCB1	CCB	1	82537.9	90612.7	91.089	PASS	70-130	58318.5	69972.7	83.34	PASS	70-130
CCV2	CCV	1	98748.5	90612.7	108.98	PASS	70-130	77469.7	69972.7	110.71	PASS	70-130
CCB2	CCB	1	83700.4	90612.7	92.37	PASS	70-130	65486.7	69972.7	93.59	PASS	70-130
LLCCV1	CCV2	1	84801.2	90612.7	93.59	PASS	70-130	66845.4	69972.7	95.53	PASS	70-130
ICSA2	ICSA	1	108482.2	90612.7	119.72	PASS	70-130	70132.2	69972.7	100.23	PASS	70-130
ICSAB2	ICSAB	1	111386.9	90612.7	122.93	PASS	70-130	72856.4	69972.7	104.12	PASS	70-130
CCV3	CCV	1	92504.3	90612.7	102.09	PASS	70-130	76592.2	69972.7	109.46	PASS	70-130
CCB3	CCB	1	82717.7	90612.7	91.29	PASS	70-130	70982.6	69972.7	101.44	PASS	70-130
CCV4	CCV	1	81347.6	90612.7	89.78	PASS	70-130	69148.1	69972.7	98.82	PASS	70-130
CCB4	CCB	1	68951.2	90612.7	76.094	PASS	70-130	61246.7	69972.7	87.53	PASS	70-130
CCV5	CCV	1	82095.7	90612.7	90.6	PASS	70-130	70198.3	69972.7	100.32	PASS	70-130
CCB5	CCB	1	79390.7	90612.7	87.62	PASS	70-130	66109.9	69972.7	94.48	PASS	70-130
LLCCV2	CCV2	1	81461.8	90612.7	89.9	PASS	70-130	68557.9	69972.7	97.98	PASS	70-130
ICSA3	ICSA	1	94700.8	90612.7	104.51	PASS	70-130	66609.8	69972.7	95.19	PASS	70-130
ICSAB3	ICSAB	1	98024.4	90612.7	108.18	PASS	70-130	70641	69972.7	100.96	PASS	70-130
CCV6	CCV	1	84614.8	90612.7	93.38	PASS	70-130	69921.5	69972.7	99.93	PASS	70-130
CCB6	CCB	1	78846.9	90612.7	87.015	PASS	70-130	65389.4	69972.7	93.45	PASS	70-130
N019654-006B	SAMP	5	77281.6	90612.7	85.29	PASS	70-130	62866.2	69972.7	89.84	PASS	70-130
N019628-001B	SAMP	5	83361	90612.7	92	PASS	70-130	58967.3	69972.7	84.27	PASS	70-130
N019628-002B	SAMP	5	88275.2	90612.7	97.42	PASS	70-130	60160.6	69972.7	85.98	PASS	70-130
N019628-003B	SAMP	5	89393.5	90612.7	98.65	PASS	70-130	60467.2	69972.7	86.42	PASS	70-130
N019628-004B	SAMP	5	89909.4	90612.7	99.22	PASS	70-130	60172.7	69972.7	85.99	PASS	70-130
N019628-004B	SAMP	25	79257.8	90612.7	87.47	PASS	70-130	66060.9	69972.7	94.41	PASS	70-130
N019628-005B	SAMP	100	76076.2	90612.7	83.96	PASS	70-130	63782.2	69972.7	91.15	PASS	70-130
CCV7	CCV	1	78409.3	90612.7	86.53	PASS	70-130	66864.2	69972.7	95.56	PASS	70-130
CCB7	CCB	1	74619.8	90612.7	82.35	PASS	70-130	62801.5	69972.7	89.75	PASS	70-130

INTERNAL STANDARD: 160516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV3	CCV2	1	76279.5	90612.7	84.18	PASS	70-130	63929.4	69972.7	91.36	PASS	70-130
ICSA4	ICSA	1	96672	90612.7	106.69	PASS	70-130	68081.5	69972.7	97.3	PASS	70-130
ICSAB4	ICSAB	1	100728.8	90612.7	111.16	PASS	70-130	71011.6	69972.7	101.48	PASS	70-130

INTERNAL STANDARD: 160516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1828340.2	1828340.2	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	2002933	1828340.2	109.55	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	1988312.5	1828340.2	108.75	PASS	70-130
Std3-5/50 ppb	ICAL	1	1958548	1828340.2	107.12	PASS	70-130
Std4-10/100 ppb	ICAL	1	1944145.6	1828340.2	106.33	PASS	70-130
Std5-20/200 ppb	ICAL	1	1931268.4	1828340.2	105.63	PASS	70-130
Std6-40/400 ppb	ICAL	1	2001547.2	1828340.2	109.47	PASS	70-130
Std7-100/1000 ppb	ICAL	1	1927930.7	1828340.2	105.45	PASS	70-130
Std8-200/2000 ppb	ICAL	1	1946717.8	1828340.2	106.47	PASS	70-130
ICV	ICV	1	1800677.5	1828340.2	98.49	PASS	70-130
ICB	ICB	1	1821127.8	1828340.2	99.61	PASS	70-130
LLICV	CCV1	1	1777981.2	1828340.2	97.25	PASS	70-130
ICSA1	ICSA	1	1807128.8	1828340.2	98.84	PASS	70-130
ICSAB1	ICSAB	1	1861128.2	1828340.2	101.79	PASS	70-130
CCV1	CCV	1	2065117.2	1828340.2	112.95	PASS	70-130
CCB1	CCB	1	1672043.1	1828340.2	91.45	PASS	70-130
CCV2	CCV	1	2017795.5	1828340.2	110.36	PASS	70-130
CCB2	CCB	1	1743618.7	1828340.2	95.37	PASS	70-130
LLCCV1	CCV2	1	1756369.4	1828340.2	96.064	PASS	70-130
ICSA2	ICSA	1	1813970.7	1828340.2	99.21	PASS	70-130
ICSAB2	ICSAB	1	1845323.9	1828340.2	100.93	PASS	70-130
CCV3	CCV	1	1951194	1828340.2	106.72	PASS	70-130
CCB3	CCB	1	1774357.9	1828340.2	97.047	PASS	70-130
CCV4	CCV	1	1678917	1828340.2	91.83	PASS	70-130
CCB4	CCB	1	1440340.8	1828340.2	78.78	PASS	70-130
CCV5	CCV	1	1742155.3	1828340.2	95.29	PASS	70-130
CCB5	CCB	1	1682363.6	1828340.2	92.016	PASS	70-130
LLCCV2	CCV2	1	1741437.2	1828340.2	95.25	PASS	70-130
ICSA3	ICSA	1	1633857.2	1828340.2	89.36	PASS	70-130
ICSAB3	ICSAB	1	1657616.1	1828340.2	90.66	PASS	70-130
CCV6	CCV	1	1797127.7	1828340.2	98.29	PASS	70-130
CCB6	CCB	1	1704052.9	1828340.2	93.2	PASS	70-130
N019654-006B	SAMP	5	1569364.7	1828340.2	85.84	PASS	70-130
N019628-001B	SAMP	5	1393728.2	1828340.2	76.23	PASS	70-130
N019628-002B	SAMP	5	1430671.4	1828340.2	78.25	PASS	70-130
N019628-003B	SAMP	5	1389070.9	1828340.2	75.97	PASS	70-130
N019628-004B	SAMP	5	1488461.5	1828340.2	81.41	PASS	70-130
N019628-004B	SAMP	25	1484830.3	1828340.2	81.21	PASS	70-130
N019628-005B	SAMP	100	1592124.6	1828340.2	87.08	PASS	70-130
CCV7	CCV	1	1676596.9	1828340.2	91.7	PASS	70-130
CCB7	CCB	1	1607167.4	1828340.2	87.9	PASS	70-130

INTERNAL STANDARD: 160516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
LLCCV3	CCV2	1	1643274.6	1828340.2	89.88	PASS	70-130
ICSA4	ICSA	1	1663547.9	1828340.2	90.99	PASS	70-130
ICSAB4	ICSAB	1	1701213.8	1828340.2	93.047	PASS	70-130

INTERNAL STANDARD: 160518A2

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	141065.1	141065.1	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	140562.6	141065.1	99.64	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	135853.4	141065.1	96.31	PASS	70-130
Std3-5/50 ppb	ICAL	1	131223.6	141065.1	93.023	PASS	70-130
Std4-10/100 ppb	ICAL	1	126171.7	141065.1	89.44	PASS	70-130
Std5-20/200 ppb	ICAL	1	118719.3	141065.1	84.16	PASS	70-130
Std6-40/400 ppb	ICAL	1	110108.5	141065.1	78.055	PASS	70-130
Std7-100/1000 ppb	ICAL	1	106063.7	141065.1	75.19	PASS	70-130
Std8-200/2000 ppb	ICAL	1	105703.4	141065.1	74.93	PASS	70-130
ICV	ICV	1	112246.9	141065.1	79.57	PASS	70-130
ICB	ICB	1	111431.3	141065.1	78.99	PASS	70-130
LLICV	CCV1	1	109668.3	141065.1	77.74	PASS	70-130
ICSA1	ICSA	1	127354.7	141065.1	90.28	PASS	70-130
ICSAB1	ICSAB	1	136612.2	141065.1	96.84	PASS	70-130
N019628-007B	SAMP	1	101005.2	141065.1	71.6	PASS	70-130
CCV1	CCV	1	140763	141065.1	99.79	PASS	70-130
CCB1	CCB	1	140384.5	141065.1	99.52	PASS	70-130
CCV2	CCV	1	143464.6	141065.1	101.7	PASS	70-130
CCB2	CCB	1	129935.7	141065.1	92.11	PASS	70-130
CCV3	CCV	1	148036	141065.1	104.94	PASS	70-130
CCB3	CCB	1	141725.6	141065.1	100.47	PASS	70-130
LLCCV1	CCV2	1	140641.6	141065.1	99.7	PASS	70-130
ICSA2	ICSA	1	145666.6	141065.1	103.26	PASS	70-130
ICSAB2	ICSAB	1	151835.6	141065.1	107.64	PASS	70-130

INTERNAL STANDARD: 160520A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	95041	95041	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	96839.8	95041	101.89	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	95006.5	95041	99.96	PASS	70-130
Std3-5/50 ppb	ICAL	1	95499.7	95041	100.48	PASS	70-130
Std4-10/100 ppb	ICAL	1	95305.9	95041	100.28	PASS	70-130
Std5-20/200 ppb	ICAL	1	94018.9	95041	98.92	PASS	70-130
Std6-40/400 ppb	ICAL	1	93870.4	95041	98.77	PASS	70-130
Std7-100/1000 ppb	ICAL	1	91188.9	95041	95.95	PASS	70-130
Std8-200/2000 ppb	ICAL	1	90526.4	95041	95.25	PASS	70-130
ICV	ICV	1	94511.3	95041	99.44	PASS	70-130
ICB	ICB	1	95726.4	95041	100.72	PASS	70-130
LLICV	CCV1	1	94450	95041	99.38	PASS	70-130
ICSA1	ICSA	1	99356.7	95041	104.54	PASS	70-130
ICSAB1	ICSAB	1	108031.1	95041	113.67	PASS	70-130
N019628-004B	SAMP	5	81366.3	95041	85.61	PASS	70-130
CCV1	CCV	1	109245.2	95041	114.95	PASS	70-130
CCB1	CCB	1	107643.6	95041	113.26	PASS	70-130
LLCCV1	CCV2	1	105076.7	95041	110.56	PASS	70-130
ICSA2	ICSA	1	96875.9	95041	101.93	PASS	70-130
ICSAB2	ICSAB	1	108748.3	95041	114.42	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N019628
Test Method: EPA 6020
Analysis Date: 5/11/2016

Matrix: Groundwater
Batch No.: 58354

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mo & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N019628-006B DT 5X	Arsenic	ug/L	0	NA	0.072821	100.00%	10
N019628-006B DT 5X	Chromium	ug/L	0	NA	0.082724	100.00%	10
N019628-006B DT 25X	Manganese	ug/L	538.6786	PASS	519.5787	3.68%	10
N019628-006B DT 25X	Molybdenum	ug/L	2.98638	NA	3.145198	5.05%	10
N019628-006B DT 5X	Selenium	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N019628-006B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108392
Client ID:	ZZZZZZ	Batch ID:	58354	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2323554

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.768	0.10	10.00	0.07282	96.9	80	120				
Selenium	8.600	0.50	10.00	0	86.0	80	120				

Sample ID	N019628-006B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	108392
Client ID:	ZZZZZZ	Batch ID:	58354	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2323563

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	586.973	2.5	100.0	519.6	67.4	80	120				S
Molybdenum	13.871	2.5	10.00	3.145	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019628
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N019628-006B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108414
Client ID:	ZZZZZZ	Batch ID:	58354	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2016	SeqNo:	2324038

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.602	1.0	10.00	0.08272	85.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Detection Limit
Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

ACCEPTANCE CRITERIA: MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	MDL*10	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0313	0.3133	0.3000	0.187	0.50	0.515	103
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0248	0.2485	0.3000	0.049	0.10	0.103	103
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699	0.6986	0.3000	0.403	1.00	1.245	125
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0430	0.4304	0.3000	0.185	0.50	0.524	105
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0473	0.4734	0.3000	0.174	0.50	0.501	100
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0192	0.1925	0.3000	0.321	1.00	0.973	97
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263	0.2630	0.3000	0.163	0.50	0.475	95
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2626	2.6262	0.3000	0.328	1.00	1.062	106
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7517	7.5170	0.3000	0.605	10.00	11.338	113
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367	0.3670	0.3000	0.343	1.00	1.018	102
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0554	0.5543	0.3000	0.193	0.50	0.605	121
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0385	0.3853	0.3000	0.247	0.50	0.660	132
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0395	0.3954	0.3000	0.341	1.00	1.002	100
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276	0.2760	0.3000	0.170	0.50	0.502	100
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590	0.5899	0.3000	0.247	1.00	1.029	103
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296	0.2961	0.3000	0.186	0.50	0.549	110
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0327	0.3272	0.3000	0.181	0.50	0.533	107
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213	0.2133	0.3000	0.221	1.00	0.873	87
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2678	2.6780	0.3000	3.286	10.00	10.085	101

RAW DATA

INJECTION LOG: 160511A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0511001.D	RINSE	RINSE	1	05/11/16 10:02 AM
A0511002.D	Cal Blank	IBLK	1	05/11/16 10:07 AM
A0511003.D	Std1-0.1/1 ppb	ICAL	1	05/11/16 10:13 AM
A0511004.D	Std2-0.5/5 ppb	ICAL	1	05/11/16 10:18 AM
A0511005.D	Std3-5/50 ppb	ICAL	1	05/11/16 10:24 AM
A0511006.D	Std4-10/100 ppb	ICAL	1	05/11/16 10:30 AM
A0511007.D	Std5-20/200 ppb	ICAL	1	05/11/16 10:35 AM
A0511008.D	Std6-40/400 ppb	ICAL	1	05/11/16 10:41 AM
A0511009.D	Std7-100/1000 ppb	ICAL	1	05/11/16 10:46 AM
A0511010.D	Std8-200/2000 ppb	ICAL	1	05/11/16 10:52 AM
A0511011.D	ICV	ICV	1	05/11/16 10:58 AM
A0511012.D	ICB	ICB	1	05/11/16 11:03 AM
A0511013.D	LLICV	CCV1	1	05/11/16 11:09 AM
A0511014.D	ICSA1	ICSA	1	05/11/16 11:15 AM
A0511015.D	ICSAB1	ICSAB	1	05/11/16 11:19 AM
A0511016.D	MB-58354	MBLK	1	05/11/16 11:32 AM
A0511017.D	LCS-58354	LCS	1	05/11/16 11:37 AM
A0511018.D	N019653-001B	SAMP	1	05/11/16 11:43 AM
A0511019.D	N019628-006B	SAMP	1	05/11/16 11:49 AM
A0511020.D	N019628-006B	SAMP	5	05/11/16 11:54 AM
A0511021.D	N019628-006B-PS	PS	1	05/11/16 12:00 PM
A0511022.D	N019628-006B-MS	MS	1	05/11/16 12:05 PM
A0511023.D	N019628-006B-MSD	MSD	1	05/11/16 12:11 PM
A0511024.D	N019654-001B	SAMP	1	05/11/16 12:17 PM
A0511025.D	N019654-001B-MS	MS	1	05/11/16 12:22 PM
A0511026.D	CCV1	CCV	1	05/11/16 12:28 PM
A0511027.D	CCB1	CCB	1	05/11/16 12:33 PM
A0511028.D	N019628-006B	SAMP	1	05/11/16 12:39 PM
A0511029.D	N019628-006B	SAMP	25	05/11/16 12:45 PM
A0511030.D	N019628-006B-PS	PS	5	05/11/16 12:50 PM
A0511031.D	N019628-006B-MS	MS	5	05/11/16 12:56 PM
A0511032.D	N019628-006B-MSD	MSD	5	05/11/16 1:01 PM
A0511033.D	N019628-001B	SAMP	1	05/11/16 1:07 PM
A0511034.D	N019628-002B	SAMP	1	05/11/16 1:13 PM
A0511035.D	N019628-003B	SAMP	1	05/11/16 1:19 PM
A0511036.D	N019628-004B	SAMP	1	05/11/16 1:24 PM
A0511037.D	N019533-009B	SAMP	1	05/11/16 1:30 PM
A0511038.D	CCV2	CCV	1	05/11/16 1:35 PM
A0511039.D	CCB2	CCB	1	05/11/16 1:41 PM
A0511040.D	LLCCV1	CCV2	1	05/11/16 1:47 PM
A0511041.D	ICSA2	ICSA	1	05/11/16 1:52 PM
A0511042.D	ICSAB2	ICSAB	1	05/11/16 1:56 PM


5/12/2016

INJECTION LOG: 160511A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0511043.D	N019628-005B	SAMP	1	05/11/16 2:03 PM
A0511044.D	N019628-007B	SAMP	1	05/11/16 2:09 PM
A0511045.D	N019651-003B	SAMP	1	05/11/16 2:14 PM
A0511046.D	N019651-004B	SAMP	1	05/11/16 2:20 PM
A0511047.D	N019654-002B	SAMP	1	05/11/16 2:26 PM
A0511048.D	N019654-003B	SAMP	1	05/11/16 2:31 PM
A0511049.D	N019654-005B	SAMP	1	05/11/16 2:37 PM
A0511050.D	N019654-006B	SAMP	1	05/11/16 2:42 PM
A0511051.D	N019654-007B	SAMP	1	05/11/16 2:48 PM
A0511052.D	N019654-008B	SAMP	1	05/11/16 2:54 PM
A0511053.D	CCV3	CCV	1	05/11/16 2:59 PM
A0511054.D	CCB3	CCB	1	05/11/16 3:05 PM
A0511055.D	N019654-009B	SAMP	1	05/11/16 3:10 PM
A0511056.D	N019654-010B	SAMP	1	05/11/16 3:16 PM
A0511057.D	N019655-001B	SAMP	1	05/11/16 3:22 PM
A0511058.D	MB-58318	MBLK	1	05/11/16 3:26 PM
A0511059.D	LCS-58318	LCS	1	05/11/16 3:32 PM
A0511060.D	N019610-001B	SAMP	1	05/11/16 3:37 PM
A0511061.D	N019610-002B	SAMP	1	05/11/16 3:43 PM
A0511062.D	N019610-003B	SAMP	1	05/11/16 3:48 PM
A0511063.D	N019610-004B	SAMP	1	05/11/16 3:54 PM
A0511064.D	N019610-005B	SAMP	1	05/11/16 4:00 PM
A0511065.D	CCV4	CCV	1	05/11/16 4:05 PM
A0511066.D	CCB4	CCB	1	05/11/16 4:11 PM
A0511073.D	N019610-007B	SAMP	1	05/11/16 4:16 PM
A0511074.D	N019610-009B	SAMP	1	05/11/16 4:22 PM
A0511075.D	N019610-010B	SAMP	1	05/11/16 4:27 PM
A0511076.D	N019610-011B	SAMP	1	05/11/16 4:33 PM
A0511077.D	N019610-012B	SAMP	1	05/11/16 4:39 PM
A0511078.D	N019610-013B	SAMP	1	05/11/16 4:44 PM
A0511079.D	N019610-014B	SAMP	1	05/11/16 4:50 PM
A0511080.D	N019610-015B	SAMP	1	05/11/16 4:54 PM
A0511081.D	N019611-~~001B~~ 002B	SAMP	1	05/11/16 5:00 PM
A0511082.D	N019611-~~002B~~ 001B	SAMP	1	05/11/16 5:06 PM
A0511083.D	CCV5	CCV	1	05/11/16 5:11 PM
A0511084.D	CCB5	CCB	1	05/11/16 5:17 PM
A0511085.D	N019611-003B	SAMP	1	05/11/16 5:22 PM
A0511086.D	N019611-004B	SAMP	1	05/11/16 5:29 PM
A0511087.D	N019611-005B	SAMP	1	05/11/16 5:34 PM
A0511088.D	N019611-006B	SAMP	1	05/11/16 5:40 PM
A0511089.D	N019611-007B	SAMP	1	05/11/16 5:46 PM
A0511090.D	N019610-001B	SAMP	5	05/11/16 5:51 PM

5/19/2016
for

INJECTION LOG: 160511A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0511091.D	N019610-001B-PS	PS	1	05/11/16 5:57 PM
A0511092.D	N019610-001B-MS	MS	1	05/11/16 6:02 PM
A0511093.D	N019610-001B-MSD	MSD	1	05/11/16 6:08 PM
A0511094.D	N019610-013B-MS	MS	1	05/11/16 6:14 PM
A0511095.D	CCV6	CCV	1	05/11/16 6:19 PM
A0511096.D	CCB6	CCB	1	05/11/16 6:25 PM
A0511097.D	LLCCV2	CCV2	1	05/11/16 6:30 PM
A0511098.D	ICSA3	ICSA	1	05/11/16 6:36 PM
A0511099.D	ICSAB3	ICSAB	1	05/11/16 6:41 PM
A0511100.D	N019628-003B	SAMP	5	05/11/16 6:47 PM
A0511101.D	N019628-004B	SAMP	5	05/11/16 6:53 PM
A0511102.D	N019628-004B	SAMP	25	05/11/16 6:58 PM
A0511103.D	N019628-005B	SAMP	100	05/11/16 7:04 PM
A0511104.D	N019628-007B	SAMP	5	05/11/16 7:09 PM
A0511105.D	N019654-005B	SAMP	1	05/11/16 7:15 PM
A0511106.D	N019654-006B	SAMP	5	05/11/16 7:20 PM
A0511107.D	N019610-010B	SAMP	5	05/11/16 7:26 PM
A0511108.D	N019610-011B	SAMP	5	05/11/16 7:32 PM
A0511109.D	N019610-012B	SAMP	50	05/11/16 7:37 PM
A0511110.D	CCV7	CCV	1	05/11/16 7:43 PM
A0511111.D	CCB7	CCB	1	05/11/16 7:48 PM
A0511112.D	N019610-013B	SAMP	50	05/11/16 7:54 PM
A0511113.D	N019610-014B	SAMP	5	05/11/16 7:59 PM
A0511114.D	N019610-015B	SAMP	10	05/11/16 8:05 PM
A0511115.D	N019611-0~~01B~~ 002B	SAMP	5	05/11/16 8:11 PM
A0511116.D	N019611-0~~02B~~ 001B	SAMP	10	05/11/16 8:16 PM
A0511117.D	N019611-003B	SAMP	5	05/11/16 8:22 PM
A0511118.D	N019611-005B	SAMP	5	05/11/16 8:27 PM
A0511119.D	N019611-007B	SAMP	5	05/11/16 8:33 PM
A0511120.D	N019628-007B	SAMP	1	05/11/16 8:39 PM
A0511121.D	CCV8	CCV	1	05/11/16 8:44 PM
A0511122.D	CCB8	CCB	1	05/11/16 8:50 PM
A0511123.D	LLCCV3	CCV2	1	05/11/16 8:55 PM
A0511124.D	ICSA4	ICSA	1	05/11/16 9:01 PM
A0511125.D	ICSAB4	ICSAB	1	05/11/16 9:06 PM

5/19/2016
for

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	A0511001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	A0511002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	A0511003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 160401C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	A0511004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 160401C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	A0511005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 160401C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	A0511006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 160401C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1106	A0511007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 160401C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	A0511008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 160401C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	A0511009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 160401C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	A0511010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 160401C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	A0511011	ICV,ICV,1	10/100 ug/L,200mL of 2MWST- 160201C	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	A0511012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0511013	LLICV,CCV1,1	2MWST- 160201D	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0511014	ICSA1,ICSA,1	2MWST- 160401D	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0511015	ICSAB1,ICSAB,1	2MWST- 160401E	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4101	A0511016	MB-58354,MBLK,1		1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4102	A0511017	LCS-58354,LCS,1		1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4103	A0511018	N019653-001B,SAMP,1		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4104	A0511019	N019628-006B,SAMP,1		1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4105	A0511020	N019628-006B,SAMP,5		1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4106	A0511021	N019628-006B-PS,PS,1		1.000				
22	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4107	A0511022	N019628-006B-MS,MS,1		1.000				
23	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4108	A0511023	N019628-006B-MSD,MSD,1		1.000				
24	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4109	A0511024	N019654-001B,SAMP,1		1.000				
25	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4110	A0511025	N019654-001B-MS,MS,1		1.000				
26	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0511026	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
27	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0511027	CCB1,CCB,1		1.000				
28	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4104	A0511028	N019628-006B,SAMP,1		1.000				
29	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4111	A0511029	N019628-006B,SAMP,25		1.000				
30	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4112	A0511030	N019628-006B-PS,PS,5		1.000				
31	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4201	A0511031	N019628-006B-MS,MS,5		1.000				
32	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4202	A0511032	N019628-006B-MSD,MSD,5		1.000				
33	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4203	A0511033	N019628-001B,SAMP,1		1.000				
34	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4204	A0511034	N019628-002B,SAMP,1		1.000				
35	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4205	A0511035	N019628-003B,SAMP,1		1.000				
36	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4206	A0511036	N019628-004B,SAMP,1		1.000				
37	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4501	A0511037	N019533-009B,SAMP,1		1.000				
38	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0511038	CCV2,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
39	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0511039	CCB2,CCB,1		1.000				
40	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0511040	LLCCV1,CCV2,1	2MWST- 160201D	1.000				
41	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0511041	ICSA2,ICSA,1	2MWST- 160401D	1.000				
42	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0511042	ICSAB2,ICSAB,1	2MWST- 160401E	1.000				
43	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4207	A0511043	N019628-005B,SAMP,1		1.000				
44	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4208	A0511044	N019628-007B,SAMP,1		1.000				
45	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4209	A0511045	N019651-003B,SAMP,1		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
46	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4210	A0511046	N019651-004B,SAMP,1		1.000				
47	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4211	A0511047	N019654-002B,SAMP,1		1.000				
48	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4212	A0511048	N019654-003B,SAMP,1		1.000				
49	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4301	A0511049	N019654-005B,SAMP,1		1.000				
50	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4302	A0511050	N019654-006B,SAMP,1		1.000				
51	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4303	A0511051	N019654-007B,SAMP,1		1.000				
52	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4304	A0511052	N019654-008B,SAMP,1		1.000				
53	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0511053	CCV3,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
54	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0511054	CCB3,CCB,1		1.000				
55	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4305	A0511055	N019654-009B,SAMP,1		1.000				
56	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4306	A0511056	N019654-010B,SAMP,1		1.000				
57	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4307	A0511057	N019655-001B,SAMP,1		1.000				
58	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2101	A0511058	MB-58318,MBLK,1		1.000				
59	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2102	A0511059	LCS-58318,LCS,1		1.000				
60	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2103	A0511060	N019610-001B,SAMP,1		1.000				
61	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2104	A0511061	N019610-002B,SAMP,1		1.000				
62	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2105	A0511062	N019610-003B,SAMP,1		1.000				
63	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2106	A0511063	N019610-004B,SAMP,1		1.000				
64	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2107	A0511064	N019610-005B,SAMP,1		1.000				
65	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0511065	CCV4,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
66	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0511066	CCB4,CCB,1		1.000				
67	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2108	A0511073	N019610-007B,SAMP,1		1.000				
68	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2109	A0511074	N019610-009B,SAMP,1		1.000				
69	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2110	A0511075	N019610-010B,SAMP,1		1.000				
70	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2111	A0511076	N019610-011B,SAMP,1		1.000				
71	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2112	A0511077	N019610-012B,SAMP,1		1.000				
72	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2201	A0511078	N019610-013B,SAMP,1		1.000				
73	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2202	A0511079	N019610-014B,SAMP,1		1.000				
74	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2203	A0511080	N019610-015B,SAMP,1		1.000				
75	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2204	A0511081	N019611-~~001~~B,SAMP,1 -002B		1.000				
76	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2205	A0511082	N019611-~~002~~B,SAMP,1 -001B		1.000				
77	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0511083	CCV5,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
78	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0511084	CCB5,CCB,1		1.000				
79	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2206	A0511085	N019611-003B,SAMP,1	5/19/2016	1.000				
80	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2207	A0511086	N019611-004B,SAMP,1		1.000				
81	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2208	A0511087	N019611-005B,SAMP,1		1.000				
82	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2209	A0511088	N019611-006B,SAMP,1		1.000				
83	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2210	A0511089	N019611-007B,SAMP,1		1.000				
84	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2211	A0511090	N019610-001B,SAMP,5		1.000				
85	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2212	A0511091	N019610-001B-PS,PS,1		1.000				
86	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2301	A0511092	N019610-001B-MS,MS,1		1.000				
87	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2302	A0511093	N019610-001B-MSD,MSD,1		1.000				
88	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2303	A0511094	N019610-013B-MS,MS,1		1.000				
89	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0511095	CCV6,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
90	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0511096	CCB6,CCB,1		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
91	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0511097	LLCCV2,CCV2,1	2MWST- 160201D	1.000				
92	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0511098	ICSA3,ICSA,1	2MWST- 160401D	1.000				
93	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0511099	ICSAB3,ICSAB,1	2MWST- 160401E	1.000				
94	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2304	A0511100	N019628-003B,SAMP,5		1.000				
95	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2305	A0511101	N019628-004B,SAMP,5		1.000				
96	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2306	A0511102	N019628-004B,SAMP,25		1.000				
97	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2307	A0511103	N019628-005B,SAMP,100		1.000				
98	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2308	A0511104	N019628-007B,SAMP,5		1.000				
99	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4301	A0511105	N019654-005B,SAMP,1		1.000				
100	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2309	A0511106	N019654-006B,SAMP,5		1.000				
101	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2310	A0511107	N019610-010B,SAMP,5		1.000				
102	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2311	A0511108	N019610-011B,SAMP,5		1.000				
103	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2312	A0511109	N019610-012B,SAMP,50		1.000				
104	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0511110	CCV7,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
105	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0511111	CCB7,CCB,1		1.000				
106	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2401	A0511112	N019610-013B,SAMP,50		1.000				
107	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2402	A0511113	N019610-014B,SAMP,5		1.000				
108	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2403	A0511114	N019610-015B,SAMP,10		1.000				
109	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2404	A0511115	N019611-~~001~~B,SAMP,5 -002B		1.000				
110	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2405	A0511116	N019611-~~002~~B,SAMP,10 -001B		1.000				
111	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2406	A0511117	N019611-003B,SAMP,5		1.000				
112	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2407	A0511118	N019611-005B,SAMP,5		1.000				
113	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2408	A0511119	N019611-007B,SAMP,5		1.000				
114	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2412	A0511120	N019628-007B,SAMP,1		1.000				
115	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0511121	CCV8,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
116	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0511122	CCB8,CCB,1		1.000				
117	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0511123	LLCCV3,CCV2,1	2MWST- 160201D	1.000				
118	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0511124	ICSA4,ICSA,1	2MWST- 160401D	1.000				
119	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0511125	ICSAB4,ICSAB,1	2MWST- 160401E	1.000				

5/19/2016

Quantitation Report

File Name	A0511002.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:07
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	---	100.00	4.863E-05	Pulse	0.30	3
B	11	6	3	0.000	ppb	---	17,672.85	8.596E-03	Pulse	0.30	3
Na	23	45	2	0.000	ppb	---	108,506.33	1.319E+00	Pulse	0.30	3
Mg	26	45	2	0.000	ppb	---	137.78	1.677E-03	Pulse	0.30	3
Al	27	45	2	0.000	ppb	---	162.22	1.973E-03	Pulse	0.30	3
K	39	45	2	0.000	ppb	---	21,354.33	2.596E-01	Pulse	0.30	3
Ca	44	45	3	0.000	ppb	---	21,387.80	9.404E-03	Pulse	0.30	3
V	51	45	2	0.000	ppb	---	632.26	7.686E-03	Pulse	0.30	3
Cr	52	45	2	0.000	ppb	---	1,089.96	1.324E-02	Pulse	0.30	3
Mn	55	45	2	0.000	ppb	---	253.42	3.070E-03	Pulse	0.30	3
Fe	56	45	2	0.000	ppb	---	2,204.04	2.679E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	---	32.10	3.901E-04	Pulse	0.30	3
Ni	60	72	2	0.000	ppb	---	511.00	1.014E-02	Pulse	0.30	3
Cu	63	72	2	0.000	ppb	---	3,907.17	7.753E-02	Pulse	0.30	3
Zn	66	72	2	0.000	ppb	---	1,451.82	2.880E-02	Pulse	0.30	3
As	75	72	2	0.000	ppb	---	11.56	2.298E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	2.22	4.285E-05	Pulse	0.30	3
Mo	95	103	2	0.000	ppb	---	45.56	3.127E-05	Pulse	0.30	3
Ag	107	103	3	0.000	ppb	---	1,867.10	5.915E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	---	961.50	3.163E-04	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	---	362.24	1.193E-04	Pulse	0.30	3
Ba	137	159	3	0.000	ppb	---	316.54	6.873E-05	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	---	1,112.31	3.898E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	---	8,401.47	2.945E-03	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.000	ppb	---	126.11	4.422E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,056,063.47	0.44	100.0	Analog	0.30	3
2	Sc	45	82,331.35	2.44	100.0	Pulse	0.30	3
3	Sc	45	2,274,355.07	0.36	100.0	Analog	0.30	3
1	Ge	72	52,239.95	1.52	100.0	Pulse	0.30	3
2	Ge	72	50,396.42	0.90	100.0	Pulse	0.30	3
2	Rh	103	1,455,078.64	0.92	100.0	Analog	0.30	3
3	Rh	103	3,156,889.43	0.50	100.0	Analog	0.30	3
3	In	115	3,039,319.09	0.55	100.0	Analog	0.30	3
3	Tb	159	4,602,021.81	0.88	100.0	Analog	0.30	3
3	Bi	209	2,853,612.39	0.71	100.0	Analog	0.30	3

Quantitation Report

FOR AS ONLY

File Name	A0511003.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:13
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.096	ppb	6.56	1,257.88	5.915E-04	Pulse	0.30	3
B	11	6	3	0.874	ppb	2.76	26,103.92	1.228E-02	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	109,715.02	1.284E+00	Pulse	0.30	3
Mg	26	45	2	5.903	ppb	4.07	778.94	9.110E-03	Pulse	0.30	3
Al	27	45	2	1.588	ppb	6.78	519.95	6.082E-03	Pulse	0.30	3
K	39	45	2	1.638	ppb	171.98	22,730.56	2.660E-01	Pulse	0.30	3
Ca	44	45	3	8.344	ppb	10.77	31,068.77	1.320E-02	Pulse	0.30	3
V	51	45	2	0.116	ppb	4.22	1,197.88	1.401E-02	Pulse	0.30	3
Cr	52	45	2	0.073	ppb	22.71	1,588.86	1.859E-02	Pulse	0.30	3
Mn	55	45	2	0.126	ppb	12.64	670.69	7.849E-03	Pulse	0.30	3
Fe	56	45	2	0.785	ppb	1.72	6,488.50	7.589E-02	Pulse	0.30	3
Co	59	45	2	0.094	ppb	7.88	1,061.06	1.240E-02	Pulse	0.30	3
Ni	60	72	2	0.100	ppb	10.84	802.04	1.536E-02	Pulse	0.30	3
Cu	63	72	2	0.133	ppb	20.29	5,091.64	9.748E-02	Pulse	0.30	3
Zn	66	72	2	0.271	ppb	57.85	1,827.31	3.498E-02	Pulse	0.30	3
As	75	72	2	0.106	ppb	22.13	82.22	1.574E-03	Pulse	0.75	3
Se	78	72	1	0.110	ppb	29.07	25.55	4.702E-04	Pulse	0.30	3
Mo	95	103	2	0.101	ppb	7.88	410.02	2.682E-04	Pulse	0.30	3
Ag	107	103	3	0.016	ppb	33.05	2,400.75	7.241E-04	Pulse	0.30	3
Cd	111	115	3	0.086	ppb	8.66	1,524.20	4.760E-04	Pulse	0.30	3
Sb	121	115	3	0.109	ppb	8.43	2,800.37	8.747E-04	Pulse	0.30	3
Ba	137	159	3	0.099	ppb	10.33	1,048.71	2.145E-04	Pulse	0.30	3
Tl	205	209	3	0.090	ppb	0.30	5,796.90	1.917E-03	Pulse	0.30	3
Pb	208	209	3	0.094	ppb	4.98	15,496.62	5.125E-03	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.100	ppb	1.67	7,986.20	2.641E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,126,193.64	0.76	103.4	Analog	0.30	3
2	Sc	45	85,502.40	1.45	103.9	Pulse	0.30	3
3	Sc	45	2,353,999.86	0.09	103.5	Analog	0.30	3
1	Ge	72	54,277.85	0.74	103.9	Pulse	0.30	3
2	Ge	72	52,231.11	0.23	103.6	Pulse	0.30	3
2	Rh	103	1,528,860.53	1.24	105.1	Analog	0.30	3
3	Rh	103	3,315,487.80	0.19	105.0	Analog	0.30	3
3	In	115	3,202,090.17	0.51	105.4	Analog	0.30	3
3	Tb	159	4,889,724.41	0.49	106.3	Analog	0.30	3
3	Bi	209	3,023,963.25	0.32	106.0	Analog	0.30	3

Quantitation Report

File Name	A0511004.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:18
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.471	ppb	3.60	5,667.85	2.715E-03	Pulse	0.30	3
B	11	6	3	4.436	ppb	2.11	56,943.84	2.728E-02	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	102,957.53	1.215E+00	Pulse	0.30	3
Mg	26	45	2	5.592	ppb	15.32	738.94	8.720E-03	Pulse	0.30	3
Al	27	45	2	2.712	ppb	16.19	762.20	8.990E-03	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	21,852.78	2.578E-01	Pulse	0.30	3
Ca	44	45	3	6.841	ppb	12.06	28,635.39	1.251E-02	Pulse	0.30	3
V	51	45	2	0.512	ppb	1.31	3,013.74	3.556E-02	Pulse	0.30	3
Cr	52	45	2	0.473	ppb	3.51	4,079.41	4.813E-02	Pulse	0.30	3
Mn	55	45	2	0.540	ppb	4.54	1,996.48	2.356E-02	Pulse	0.30	3
Fe	56	45	2	1.224	ppb	1.14	8,755.94	1.033E-01	Pulse	0.30	3
Co	59	45	2	0.483	ppb	3.90	5,288.72	6.239E-02	Pulse	0.30	3
Ni	60	72	2	0.529	ppb	10.20	1,989.99	3.774E-02	Pulse	0.30	3
Cu	63	72	2	0.495	ppb	5.42	7,991.99	1.516E-01	Pulse	0.30	3
Zn	66	72	2	0.736	ppb	19.01	2,405.21	4.561E-02	Pulse	0.30	3
As	75	72	2	0.453	ppb	7.94	313.34	5.943E-03	Pulse	0.75	3
Se	78	72	1	0.381	ppb	10.97	84.45	1.525E-03	Pulse	0.30	3
Mo	95	103	2	0.452	ppb	11.75	1,666.82	1.088E-03	Pulse	0.30	3
Ag	107	103	3	0.301	ppb	2.15	10,220.56	3.122E-03	Pulse	0.30	3
Cd	111	115	3	0.463	ppb	4.76	3,736.03	1.177E-03	Pulse	0.30	3
Sb	121	115	3	0.491	ppb	3.11	11,207.75	3.532E-03	Pulse	0.30	3
Ba	137	159	3	0.529	ppb	3.55	4,139.03	8.500E-04	Pulse	0.30	3
Tl	205	209	3	0.491	ppb	0.34	25,979.00	8.705E-03	Pulse	0.30	3
Pb	208	209	3	0.503	ppb	2.51	43,452.30	1.456E-02	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.499	ppb	1.17	38,964.03	1.306E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,087,524.61	0.82	101.5	Analog	0.30	3
2	Sc	45	84,763.28	0.52	103.0	Pulse	0.30	3
3	Sc	45	2,288,455.02	0.88	100.6	Analog	0.30	3
1	Ge	72	55,392.48	0.79	106.0	Pulse	0.30	3
2	Ge	72	52,715.94	0.58	104.6	Pulse	0.30	3
2	Rh	103	1,531,334.42	1.15	105.2	Analog	0.30	3
3	Rh	103	3,274,168.29	0.40	103.7	Analog	0.30	3
3	In	115	3,174,145.25	0.94	104.4	Analog	0.30	3
3	Tb	159	4,869,683.95	0.17	105.8	Analog	0.30	3
3	Bi	209	2,984,373.84	0.77	104.6	Analog	0.30	3

Quantitation Report

File Name	A0511005.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:24
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	4.899	ppb	1.57	57,566.27	2.781E-02	Pulse	0.30	3
B	11	6	3	46.686	ppb	1.74	424,833.28	2.052E-01	Pulse	0.30	3
Na	23	45	2	38.731	ppb	4.39	160,954.03	1.885E+00	Pulse	0.30	3
Mg	26	45	2	52.173	ppb	5.25	5,753.43	6.738E-02	Pulse	0.30	3
Al	27	45	2	8.507	ppb	1.15	2,048.53	2.399E-02	Pulse	0.30	3
K	39	45	2	44.166	ppb	4.33	36,871.55	4.317E-01	Pulse	0.30	3
Ca	44	45	3	54.252	ppb	0.65	78,175.65	3.407E-02	Pulse	0.30	3
V	51	45	2	5.103	ppb	1.01	24,365.33	2.853E-01	Pulse	0.30	3
Cr	52	45	2	4.903	ppb	1.63	32,010.16	3.747E-01	Pulse	0.30	3
Mn	55	45	2	5.044	ppb	1.68	16,597.03	1.943E-01	Pulse	0.30	3
Fe	56	45	2	6.184	ppb	0.40	35,316.37	4.135E-01	Pulse	0.30	3
Co	59	45	2	4.985	ppb	0.17	54,658.94	6.400E-01	Pulse	0.30	3
Ni	60	72	2	5.088	ppb	1.62	14,621.59	2.756E-01	Pulse	0.30	3
Cu	63	72	2	4.824	ppb	1.71	42,447.30	7.999E-01	Pulse	0.30	3
Zn	66	72	2	5.135	ppb	5.50	7,750.54	1.461E-01	Pulse	0.30	3
As	75	72	2	5.052	ppb	2.37	3,395.50	6.400E-02	Pulse	0.75	3
Se	78	72	1	5.062	ppb	4.49	1,071.19	1.974E-02	Pulse	0.30	3
Mo	95	103	2	4.973	ppb	1.18	17,863.93	1.165E-02	Pulse	0.30	3
Ag	107	103	3	4.673	ppb	0.25	131,187.71	3.986E-02	Pulse	0.30	3
Cd	111	115	3	4.988	ppb	1.48	30,934.01	9.593E-03	Pulse	0.30	3
Sb	121	115	3	4.923	ppb	0.73	110,786.48	3.436E-02	Pulse	0.30	3
Ba	137	159	3	5.120	ppb	1.40	36,976.11	7.630E-03	Pulse	0.30	3
Tl	205	209	3	5.041	ppb	0.49	259,008.66	8.578E-02	Pulse	0.30	3
Pb	208	209	3	5.091	ppb	0.60	363,908.59	1.205E-01	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	5.002	ppb	0.18	393,715.05	1.304E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,070,374.36	1.37	100.7	Analog	0.30	3
2	Sc	45	85,411.08	1.11	103.7	Pulse	0.30	3
3	Sc	45	2,294,279.25	0.35	100.9	Analog	0.30	3
1	Ge	72	54,269.85	0.91	103.9	Pulse	0.30	3
2	Ge	72	53,074.99	2.45	105.3	Pulse	0.30	3
2	Rh	103	1,533,860.03	1.22	105.4	Analog	0.30	3
3	Rh	103	3,290,761.65	0.84	104.2	Analog	0.30	3
3	In	115	3,224,758.30	0.85	106.1	Analog	0.30	3
3	Tb	159	4,846,218.58	0.48	105.3	Analog	0.30	3
3	Bi	209	3,019,563.39	0.72	105.8	Analog	0.30	3

Quantitation Report

File Name	A0511006.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:30
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.838	ppb	1.92	112,889.98	5.579E-02	Pulse	0.30	3
B	11	6	3	94.388	ppb	1.11	821,800.43	4.061E-01	Pulse	0.30	3
Na	23	45	2	85.655	ppb	1.89	215,959.37	2.570E+00	Pulse	0.30	3
Mg	26	45	2	99.970	ppb	1.09	10,720.48	1.276E-01	Pulse	0.30	3
Al	27	45	2	11.073	ppb	8.08	2,573.69	3.062E-02	Pulse	0.30	3
K	39	45	2	96.012	ppb	1.42	53,262.25	6.338E-01	Pulse	0.30	3
Ca	44	45	3	97.992	ppb	0.98	121,837.01	5.396E-02	Pulse	0.30	3
V	51	45	2	10.158	ppb	0.84	47,086.66	5.603E-01	Pulse	0.30	3
Cr	52	45	2	9.937	ppb	0.45	62,678.17	7.458E-01	Pulse	0.30	3
Mn	55	45	2	10.138	ppb	1.24	32,561.97	3.874E-01	Pulse	0.30	3
Fe	56	45	2	10.819	ppb	1.06	59,109.65	7.033E-01	Pulse	0.30	3
Co	59	45	2	9.930	ppb	0.31	107,094.95	1.274E+00	Pulse	0.30	3
Ni	60	72	2	10.067	ppb	0.97	27,989.47	5.352E-01	Pulse	0.30	3
Cu	63	72	2	9.667	ppb	0.60	79,744.52	1.525E+00	Pulse	0.30	3
Zn	66	72	2	9.902	ppb	2.60	13,337.79	2.551E-01	Pulse	0.30	3
As	75	72	2	9.815	ppb	1.34	6,490.69	1.241E-01	Pulse	0.75	3
Se	78	72	1	9.890	ppb	2.19	2,074.66	3.853E-02	Pulse	0.30	3
Mo	95	103	2	9.924	ppb	1.88	35,570.26	2.321E-02	Pulse	0.30	3
Ag	107	103	3	9.604	ppb	0.89	264,108.30	8.131E-02	Pulse	0.30	3
Cd	111	115	3	9.882	ppb	0.25	59,828.29	1.870E-02	Pulse	0.30	3
Sb	121	115	3	9.749	ppb	0.81	217,328.61	6.791E-02	Pulse	0.30	3
Ba	137	159	3	10.187	ppb	0.94	72,699.38	1.511E-02	Pulse	0.30	3
Tl	205	209	3	9.994	ppb	0.44	510,709.22	1.697E-01	Pulse	0.30	3
Pb	208	209	3	10.051	ppb	0.60	707,428.45	2.350E-01	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	9.920	ppb	0.82	778,232.75	2.586E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,023,627.01	1.17	98.4	Analog	0.30	3
2	Sc	45	84,040.01	1.19	102.1	Pulse	0.30	3
3	Sc	45	2,257,724.32	0.67	99.3	Analog	0.30	3
1	Ge	72	53,840.59	1.36	103.1	Pulse	0.30	3
2	Ge	72	52,291.14	0.59	103.8	Pulse	0.30	3
2	Rh	103	1,532,356.32	1.12	105.3	Analog	0.30	3
3	Rh	103	3,248,264.54	0.93	102.9	Analog	0.30	3
3	In	115	3,200,166.80	0.55	105.3	Analog	0.30	3
3	Tb	159	4,810,711.91	0.30	104.5	Analog	0.30	3
3	Bi	209	3,009,805.41	0.40	105.5	Analog	0.30	3

Quantitation Report

File Name	A0511007.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:35
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.804	ppb	0.07	221,012.01	1.123E-01	Pulse	0.30	3
B	11	6	3	198.633	ppb	2.04	1,663,905.29	8.452E-01	Analog	0.30	3
Na	23	45	2	259.929	ppb	1.72	417,313.05	5.115E+00	Pulse	0.30	3
Mg	26	45	2	206.183	ppb	1.92	21,319.75	2.613E-01	Pulse	0.30	3
Al	27	45	2	21.782	ppb	1.03	4,759.85	5.833E-02	Pulse	0.30	3
K	39	45	2	201.913	ppb	2.61	85,383.28	1.047E+00	Pulse	0.30	3
Ca	44	45	3	216.415	ppb	0.53	235,937.96	1.078E-01	Pulse	0.30	3
V	51	45	2	20.467	ppb	0.62	91,468.58	1.121E+00	Pulse	0.30	3
Cr	52	45	2	19.818	ppb	1.16	120,280.82	1.474E+00	Pulse	0.30	3
Mn	55	45	2	20.483	ppb	1.53	63,608.16	7.797E-01	Pulse	0.30	3
Fe	56	45	2	21.643	ppb	1.32	112,604.11	1.380E+00	Pulse	0.30	3
Co	59	45	2	19.815	ppb	1.84	207,420.37	2.543E+00	Pulse	0.30	3
Ni	60	72	2	20.282	ppb	0.87	54,745.21	1.068E+00	Pulse	0.30	3
Cu	63	72	2	19.674	ppb	1.45	154,967.15	3.024E+00	Pulse	0.30	3
Zn	66	72	2	20.040	ppb	1.95	24,941.44	4.867E-01	Pulse	0.30	3
As	75	72	2	19.861	ppb	1.62	12,859.82	2.509E-01	Pulse	0.75	3
Se	78	72	1	20.312	ppb	1.80	4,174.05	7.910E-02	Pulse	0.30	3
Mo	95	103	2	19.820	ppb	1.89	69,188.72	4.633E-02	Pulse	0.30	3
Ag	107	103	3	19.207	ppb	0.52	520,195.66	1.620E-01	Pulse	0.30	3
Cd	111	115	3	19.801	ppb	1.28	116,491.14	3.714E-02	Pulse	0.30	3
Sb	121	115	3	19.570	ppb	0.03	427,198.18	1.362E-01	Pulse	0.30	3
Ba	137	159	3	20.112	ppb	0.63	141,718.70	2.977E-02	Pulse	0.30	3
Tl	205	209	3	19.753	ppb	0.69	1,000,026.07	3.350E-01	Pulse	0.30	3
Pb	208	209	3	19.888	ppb	0.34	1,379,758.64	4.622E-01	Pulse	0.30	3
U	238	209	3	20.106	ppb	1.64	1,564,352.58	5.240E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,968,726.26	0.22	95.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	81,598.67	1.88	99.1	Pulse	0.30	3
3	Sc	45	2,188,342.76	0.30	96.2	Analog	0.30	3
1	Ge	72	52,777.50	1.41	101.0	Pulse	0.30	3
2	Ge	72	51,258.23	1.88	101.7	Pulse	0.30	3
2	Rh	103	1,493,709.44	2.49	102.7	Analog	0.30	3
3	Rh	103	3,210,722.77	0.85	101.7	Analog	0.30	3
3	In	115	3,136,298.57	0.48	103.2	Analog	0.30	3
3	Tb	159	4,760,486.94	0.45	103.4	Analog	0.30	3
3	Bi	209	2,985,244.40	0.39	104.6	Analog	0.30	3

Quantitation Report

File Name	A0511008.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:41
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	39.160	ppb	1.38	439,946.79	2.219E-01	Pulse	0.30	3
B	11	6	3	397.744	ppb	0.80	3,337,819.66	1.684E+00	Analog	0.30	3
Na	23	45	2	376.680	ppb	2.63	574,424.07	6.820E+00	Pulse	0.30	3
Mg	26	45	2	398.006	ppb	1.11	42,368.43	5.029E-01	Pulse	0.30	3
Al	27	45	2	41.990	ppb	3.39	9,316.47	1.106E-01	Pulse	0.30	3
K	39	45	2	394.615	ppb	2.13	151,423.11	1.798E+00	Pulse	0.30	3
Ca	44	45	3	397.422	ppb	1.27	424,493.58	1.901E-01	Pulse	0.30	3
V	51	45	2	40.155	ppb	2.00	184,635.55	2.192E+00	Pulse	0.30	3
Cr	52	45	2	38.972	ppb	2.29	243,102.74	2.886E+00	Pulse	0.30	3
Mn	55	45	2	40.958	ppb	0.87	131,077.10	1.556E+00	Pulse	0.30	3
Fe	56	45	2	40.723	ppb	1.69	216,755.91	2.573E+00	Pulse	0.30	3
Co	59	45	2	39.267	ppb	1.96	424,336.68	5.038E+00	Pulse	0.30	3
Ni	60	72	2	39.675	ppb	0.87	108,495.71	2.080E+00	Pulse	0.30	3
Cu	63	72	2	39.429	ppb	0.39	312,060.41	5.982E+00	Pulse	0.30	3
Zn	66	72	2	40.284	ppb	2.14	49,521.53	9.492E-01	Pulse	0.30	3
As	75	72	2	39.969	ppb	0.49	26,332.01	5.048E-01	Pulse	0.75	3
Se	78	72	1	40.603	ppb	5.39	8,472.56	1.581E-01	Pulse	0.30	3
Mo	95	103	2	39.936	ppb	1.63	142,768.84	9.331E-02	Pulse	0.30	3
Ag	107	103	3	40.202	ppb	0.95	1,101,301.06	3.385E-01	Analog	0.30	3
Cd	111	115	3	39.464	ppb	0.74	234,906.34	7.372E-02	Pulse	0.30	3
Sb	121	115	3	39.312	ppb	0.86	871,563.55	2.735E-01	Pulse	0.30	3
Ba	137	159	3	40.290	ppb	0.61	288,946.12	5.957E-02	Pulse	0.30	3
Tl	205	209	3	40.054	ppb	0.58	2,080,306.71	6.789E-01	Analog	0.30	3
Pb	208	209	3	39.828	ppb	0.39	2,827,439.71	9.227E-01	Analog	0.30	3
U	238	209	3	39.825	ppb	0.40	3,180,490.91	1.038E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,982,346.34	0.54	96.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	84,252.11	2.23	102.3	Pulse	0.30	3
3	Sc	45	2,232,813.66	0.77	98.2	Analog	0.30	3
1	Ge	72	53,601.06	0.15	102.6	Pulse	0.30	3
2	Ge	72	52,168.65	0.99	103.5	Pulse	0.30	3
2	Rh	103	1,529,942.09	0.66	105.1	Analog	0.30	3
3	Rh	103	3,253,698.04	0.41	103.1	Analog	0.30	3
3	In	115	3,186,669.30	0.17	104.8	Analog	0.30	3
3	Tb	159	4,850,781.35	0.75	105.4	Analog	0.30	3
3	Bi	209	3,064,400.68	0.49	107.4	Analog	0.30	3

Quantitation Report

File Name	A0511009.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:46
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	100.192	ppb	0.90	1,076,932.61	5.678E-01	Analog	0.30	3
B	11	6	3	989.075	ppb	1.68	7,917,288.67	4.174E+00	Analog	0.30	3
Na	23	45	2	1008.783	ppb	1.21	1,300,166.16	1.605E+01	Analog	0.30	3
Mg	26	45	2	1004.854	ppb	0.82	102,641.99	1.267E+00	Pulse	0.30	3
Al	27	45	2	101.092	ppb	2.48	21,347.26	2.636E-01	Pulse	0.30	3
K	39	45	2	1002.911	ppb	0.43	337,699.66	4.169E+00	Pulse	0.30	3
Ca	44	45	3	987.774	ppb	0.33	977,907.33	4.586E-01	Pulse	0.30	3
V	51	45	2	100.768	ppb	0.51	444,656.05	5.489E+00	Pulse	0.30	3
Cr	52	45	2	98.878	ppb	0.89	591,543.88	7.303E+00	Pulse	0.30	3
Mn	55	45	2	101.090	ppb	0.89	310,711.44	3.836E+00	Pulse	0.30	3
Fe	56	45	2	101.085	ppb	0.37	514,211.49	6.348E+00	Pulse	0.30	3
Co	59	45	2	98.759	ppb	0.65	1,026,343.06	1.267E+01	Pulse	0.30	3
Ni	60	72	2	100.468	ppb	0.30	264,158.68	5.251E+00	Pulse	0.30	3
Cu	63	72	2	97.913	ppb	0.91	741,465.90	1.474E+01	Pulse	0.30	3
Zn	66	72	2	101.066	ppb	0.72	117,614.30	2.338E+00	Pulse	0.30	3
As	75	72	2	99.547	ppb	1.02	63,229.16	1.257E+00	Pulse	0.75	3
Se	78	72	1	100.674	ppb	2.03	20,542.55	3.919E-01	Pulse	0.30	3
Mo	95	103	2	99.217	ppb	1.11	345,813.95	2.318E-01	Pulse	0.30	3
Ag	107	103	3	100.135	ppb	0.55	2,636,687.56	8.422E-01	Analog	0.30	3
Cd	111	115	3	98.451	ppb	0.38	567,277.10	1.834E-01	Pulse	0.30	3
Sb	121	115	3	100.281	ppb	0.49	2,157,122.66	6.975E-01	Analog	0.30	3
Ba	137	159	3	99.837	ppb	0.39	698,256.85	1.475E-01	Pulse	0.30	3
Tl	205	209	3	99.877	ppb	0.69	5,015,198.16	1.692E+00	Analog	0.30	3
Pb	208	209	3	100.411	ppb	0.64	6,880,610.89	2.322E+00	Analog	0.30	3
U	238	209	3	99.942	ppb	0.12	7,719,322.32	2.605E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,896,881.70	1.35	92.3	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	81,008.16	1.25	98.4	Pulse	0.30	3
3	Sc	45	2,132,476.46	0.73	93.8	Analog	0.30	3
1	Ge	72	52,434.01	1.71	100.4	Pulse	0.30	3
2	Ge	72	50,307.23	1.09	99.8	Pulse	0.30	3
2	Rh	103	1,491,969.42	0.44	102.5	Analog	0.30	3
3	Rh	103	3,130,622.45	0.55	99.2	Analog	0.30	3
3	In	115	3,092,702.12	0.51	101.8	Analog	0.30	3
3	Tb	159	4,733,759.55	0.45	102.9	Analog	0.30	3
3	Bi	209	2,963,793.71	1.21	103.9	Analog	0.30	3

Quantitation Report

File Name	A0511010.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:52
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	200.102	ppb	0.68	2,118,738.11	1.134E+00	Analog	0.30	3
B	11	6	3	2006.414	ppb	0.82	15,805,175.54	8.459E+00	Analog	0.30	3
Na	23	45	2	1995.279	ppb	0.27	2,455,238.40	3.046E+01	Analog	0.30	3
Mg	26	45	2	1997.301	ppb	0.02	202,893.18	2.517E+00	Pulse	0.30	3
Al	27	45	2	198.736	ppb	1.13	41,613.27	5.162E-01	Pulse	0.30	3
K	39	45	2	1999.775	ppb	0.95	649,264.86	8.055E+00	Pulse	0.30	3
Ca	44	45	3	2004.981	ppb	1.27	1,949,467.54	9.211E-01	Analog	0.30	3
V	51	45	2	199.528	ppb	0.48	875,533.94	1.086E+01	Pulse	0.30	3
Cr	52	45	2	200.791	ppb	1.07	1,194,346.63	1.482E+01	Analog	0.30	3
Mn	55	45	2	199.207	ppb	0.31	609,057.37	7.556E+00	Pulse	0.30	3
Fe	56	45	2	199.078	ppb	0.67	1,005,637.46	1.248E+01	Pulse	0.30	3
Co	59	45	2	200.790	ppb	0.79	2,076,502.56	2.576E+01	Analog	0.30	3
Ni	60	72	2	199.797	ppb	0.37	518,291.69	1.043E+01	Pulse	0.30	3
Cu	63	72	2	201.211	ppb	1.15	1,500,778.81	3.021E+01	Analog	0.30	3
Zn	66	72	2	199.408	ppb	0.59	227,794.15	4.585E+00	Pulse	0.30	3
As	75	72	2	200.255	ppb	0.41	125,598.24	2.528E+00	Pulse	0.75	3
Se	78	72	1	199.516	ppb	1.77	40,308.63	7.766E-01	Pulse	0.30	3
Mo	95	103	2	200.427	ppb	1.08	682,999.49	4.682E-01	Pulse	0.30	3
Ag	107	103	3	156.224	ppb	1.71	4,004,163.27	1.314E+00	Analog	0.30	3
Cd	111	115	3	200.908	ppb	1.76	1,137,583.03	3.740E-01	Analog	0.30	3
Sb	121	115	3	200.054	ppb	0.68	4,231,770.74	1.391E+00	Analog	0.30	3
Ba	137	159	3	203.516	ppb	1.29	1,412,519.94	3.006E-01	Analog	0.30	3
Tl	205	209	3	200.075	ppb	0.39	9,975,463.81	3.390E+00	Analog	0.30	3
Pb	208	209	3	199.835	ppb	0.38	13,589,607.74	4.618E+00	Analog	0.30	3
U	238	209	3	200.057	ppb	0.64	15,343,125.79	5.214E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,868,502.75	0.89	90.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	80,609.60	0.72	97.9	Pulse	0.30	3
3	Sc	45	2,116,194.28	0.92	93.0	Analog	0.30	3
1	Ge	72	51,909.03	0.40	99.4	Pulse	0.30	3
2	Ge	72	49,681.96	0.03	98.6	Pulse	0.30	3
2	Rh	103	1,458,886.18	1.19	100.3	Analog	0.30	3
3	Rh	103	3,048,579.12	1.62	96.6	Analog	0.30	3
3	In	115	3,041,431.94	1.00	100.1	Analog	0.30	3
3	Tb	159	4,698,507.91	1.02	102.1	Analog	0.30	3
3	Bi	209	2,943,079.71	1.29	103.1	Analog	0.30	3

Quantitation Report

File Name	A0511011.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 10:58
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	10/100 ug/L,200mL of 2MWST- 160201C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.277	ppb	1.47	90,704.22	5.261E-02	Pulse	0.30	3
B	11	6	3	1828.392	ppb	0.75	13,290,960.04	7.709E+00	Analog	0.30	3
Na	23	45	2	251.501	ppb	1.01	363,048.35	4.992E+00	Pulse	0.30	3
Mg	26	45	2	101.509	ppb	3.38	9,418.51	1.295E-01	Pulse	0.30	3
Al	27	45	2	190.330	ppb	1.28	35,960.38	4.945E-01	Pulse	0.30	3
K	39	45	2	94.297	ppb	1.89	45,608.70	6.271E-01	Pulse	0.30	3
Ca	44	45	3	153.576	ppb	0.45	153,832.43	7.924E-02	Pulse	0.30	3
V	51	45	2	9.684	ppb	2.58	38,870.82	5.345E-01	Pulse	0.30	3
Cr	52	45	2	9.406	ppb	0.87	51,394.99	7.067E-01	Pulse	0.30	3
Mn	55	45	2	95.247	ppb	0.30	262,858.33	3.614E+00	Pulse	0.30	3
Fe	56	45	2	102.933	ppb	0.56	470,070.46	6.463E+00	Pulse	0.30	3
Co	59	45	2	9.041	ppb	0.94	84,389.37	1.160E+00	Pulse	0.30	3
Ni	60	72	2	10.011	ppb	1.71	23,981.58	5.323E-01	Pulse	0.30	3
Cu	63	72	2	9.674	ppb	0.73	68,750.78	1.526E+00	Pulse	0.30	3
Zn	66	72	2	99.651	ppb	1.36	103,866.19	2.306E+00	Pulse	0.30	3
As	75	72	2	9.570	ppb	1.75	5,452.07	1.210E-01	Pulse	0.75	3
Se	78	72	1	10.227	ppb	2.23	1,867.96	3.985E-02	Pulse	0.30	3
Mo	95	103	2	10.103	ppb	0.84	31,557.45	2.363E-02	Pulse	0.30	3
Ag	107	103	3	10.354	ppb	0.95	249,935.49	8.761E-02	Pulse	0.30	3
Cd	111	115	3	9.632	ppb	0.93	51,238.75	1.823E-02	Pulse	0.30	3
Sb	121	115	3	9.738	ppb	0.44	190,654.51	6.784E-02	Pulse	0.30	3
Ba	137	159	3	98.689	ppb	0.27	619,997.31	1.458E-01	Pulse	0.30	3
Tl	205	209	3	10.229	ppb	0.30	465,822.74	1.737E-01	Pulse	0.30	3
Pb	208	209	3	9.652	ppb	0.85	605,727.37	2.258E-01	Pulse	0.30	3
U	238	209	3	9.633	ppb	0.36	673,409.28	2.511E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,724,023.99	0.59	83.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	72,729.04	0.57	88.3	Pulse	0.30	3
3	Sc	45	1,941,369.38	1.00	85.4	Analog	0.30	3
1	Ge	72	46,887.40	2.01	89.8	Pulse	0.30	3
2	Ge	72	45,049.51	0.55	89.4	Pulse	0.30	3
2	Rh	103	1,335,495.01	0.69	91.8	Analog	0.30	3
3	Rh	103	2,852,749.19	0.57	90.4	Analog	0.30	3
3	In	115	2,810,525.50	0.44	92.5	Analog	0.30	3
3	Tb	159	4,252,091.32	0.47	92.4	Analog	0.30	3
3	Bi	209	2,682,218.36	0.93	94.0	Analog	0.30	3

Quantitation Report

File Name	A0511012.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 11:03
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.007	ppb	52.16	165.56	8.920E-05	Pulse	0.30	3
B	11	6	3	34.510	ppb	2.75	285,573.50	1.539E-01	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	85,952.08	1.115E+00	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	26.67	3.469E-04	Pulse	0.30	3
Al	27	45	2	0.622	ppb	34.37	276.68	3.584E-03	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	18,405.23	2.388E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	15,224.22	7.268E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	314.46	4.078E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	821.08	1.065E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	200.27	2.603E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,733.38	2.245E-02	Pulse	0.30	3
Co	59	45	2	0.007	ppb	20.21	97.69	1.268E-03	Pulse	0.30	3
Ni	60	72	2	0.022	ppb	30.88	549.94	1.130E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	3,393.29	6.972E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	960.77	1.974E-02	Pulse	0.30	3
As	75	72	2	0.013	ppb	26.94	19.11	3.927E-04	Pulse	0.75	3
Se	78	72	1	0.028	ppb	90.43	7.78	1.537E-04	Pulse	0.30	3
Mo	95	103	2	0.165	ppb	3.00	596.70	4.166E-04	Pulse	0.30	3
Ag	107	103	3	0.746	ppb	13.41	21,200.05	6.862E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	702.17	2.335E-04	Pulse	0.30	3
Sb	121	115	3	0.099	ppb	4.78	2,432.51	8.097E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	93.31	2.035E-05	Pulse	0.30	3
Tl	205	209	3	0.120	ppb	7.17	6,872.95	2.422E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	6,327.47	2.229E-03	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.008	ppb	12.56	734.90	2.589E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,855,267.22	1.19	90.2	Analog	0.30	3
2	Sc	45	77,118.89	2.27	93.7	Pulse	0.30	3
3	Sc	45	2,094,837.42	0.38	92.1	Analog	0.30	3
1	Ge	72	50,507.93	0.44	96.7	Pulse	0.30	3
2	Ge	72	48,680.02	0.99	96.6	Pulse	0.30	3
2	Rh	103	1,431,947.39	2.62	98.4	Analog	0.30	3
3	Rh	103	3,089,915.26	0.70	97.9	Analog	0.30	3
3	In	115	3,005,199.48	1.26	98.9	Analog	0.30	3
3	Tb	159	4,584,594.24	0.25	99.6	Analog	0.30	3
3	Bi	209	2,838,520.96	0.55	99.5	Analog	0.30	3

Quantitation Report

File Name	A0511013.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 11:09
Sample Name	LLICV,CCV1,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.469	ppb	5.93	5,436.66	2.707E-03	Pulse	0.30	3
B	11	6	3	66.116	ppb	1.10	576,574.44	2.871E-01	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	91,344.26	1.081E+00	Pulse	0.30	3
Mg	26	45	2	0.787	ppb	28.75	225.57	2.669E-03	Pulse	0.30	3
Al	27	45	2	16.517	ppb	5.27	3,779.44	4.471E-02	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	18,500.92	2.189E-01	Pulse	0.30	3
Ca	44	45	3	4.617	ppb	5.80	25,890.97	1.150E-02	Pulse	0.30	3
V	51	45	2	0.898	ppb	5.80	4,777.55	5.653E-02	Pulse	0.30	3
Cr	52	45	2	0.990	ppb	5.30	7,286.24	8.623E-02	Pulse	0.30	3
Mn	55	45	2	0.507	ppb	4.94	1,884.40	2.230E-02	Pulse	0.30	3
Fe	56	45	2	11.447	ppb	0.98	62,760.11	7.426E-01	Pulse	0.30	3
Co	59	45	2	0.451	ppb	4.15	4,920.80	5.823E-02	Pulse	0.30	3
Ni	60	72	2	1.000	ppb	0.74	3,364.75	6.232E-02	Pulse	0.30	3
Cu	63	72	2	0.868	ppb	2.83	11,206.52	2.076E-01	Pulse	0.30	3
Zn	66	72	2	9.369	ppb	1.47	13,113.92	2.429E-01	Pulse	0.30	3
As	75	72	2	0.093	ppb	17.13	75.56	1.399E-03	Pulse	0.75	3
Se	78	72	1	0.509	ppb	16.55	111.12	2.026E-03	Pulse	0.30	3
Mo	95	103	2	0.536	ppb	3.10	2,012.44	1.283E-03	Pulse	0.30	3
Ag	107	103	3	0.619	ppb	2.61	19,203.75	5.791E-03	Pulse	0.30	3
Cd	111	115	3	0.555	ppb	1.86	4,407.56	1.348E-03	Pulse	0.30	3
Sb	121	115	3	0.536	ppb	3.99	12,577.72	3.847E-03	Pulse	0.30	3
Ba	137	159	3	0.956	ppb	1.77	7,360.57	1.481E-03	Pulse	0.30	3
Tl	205	209	3	0.479	ppb	0.91	26,224.95	8.506E-03	Pulse	0.30	3
Pb	208	209	3	0.923	ppb	0.96	74,805.30	2.426E-02	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.413	ppb	1.42	33,339.58	1.081E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,008,597.89	0.36	97.7	Analog	0.30	3
2	Sc	45	84,518.68	0.90	102.7	Pulse	0.30	3
3	Sc	45	2,250,543.61	1.11	99.0	Analog	0.30	3
1	Ge	72	54,918.89	1.21	105.1	Pulse	0.30	3
2	Ge	72	53,992.56	0.54	107.1	Pulse	0.30	3
2	Rh	103	1,568,742.06	0.34	107.8	Analog	0.30	3
3	Rh	103	3,316,280.16	0.46	105.0	Analog	0.30	3
3	In	115	3,270,343.56	0.58	107.6	Analog	0.30	3
3	Tb	159	4,969,424.89	0.47	108.0	Analog	0.30	3
3	Bi	209	3,083,029.64	0.39	108.0	Analog	0.30	3

Quantitation Report

File Name	A0511014.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 11:15
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	54.45	2.395E-05	Pulse	0.30	3
B	11	6	3	13.260	ppb	1.51	146,851.05	6.444E-02	Pulse	0.30	3
Na	23	45	2	98133.754	ppb	1.20	135,336,193.54	1.434E+03	Analog	0.30	3
Mg	26	45	2	100966.115	ppb	1.36	11,997,021.63	1.272E+02	Analog	0.30	3
Al	27	45	2	13.631	ppb	2.82	3,513.24	3.724E-02	Pulse	0.30	3
K	39	45	2	104220.529	ppb	1.31	38,353,153.31	4.065E+02	Analog	0.30	3
Ca	44	45	3	93988.641	ppb	0.98	113,736,472.75	4.275E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	402.24	4.260E-03	Pulse	0.30	3
Cr	52	45	2	0.118	ppb	8.82	2,070.24	2.194E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-15,472.25	-1.640E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	486.12	5.142E-03	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-60.09	-6.317E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	206.69	3.750E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-489.43	-8.878E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	917.52	1.666E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-4.43	-8.012E-05	Pulse	0.75	3
Se	78	72	1	0.029	ppb	28.95	8.89	1.575E-04	Pulse	0.30	3
Mo	95	103	2	0.065	ppb	1.90	262.23	1.821E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-20,255.58	-6.264E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-9,489.43	-2.996E-03	Pulse	0.30	3
Sb	121	115	3	0.043	ppb	9.60	1,336.78	4.181E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-71,762.32	-1.472E-02	Pulse	0.30	3
Tl	205	209	3	0.021	ppb	1.91	1,999.10	7.392E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-84,903.34	-3.143E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-6,639.29	-2.455E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,278,914.74	0.99	110.8	Analog	0.30	3
2	Sc	45	94,359.55	1.99	114.6	Pulse	0.30	3
3	Sc	45	2,660,745.66	1.77	117.0	Analog	0.30	3
1	Ge	72	56,403.66	0.80	108.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	55,114.89	1.29	109.4	Pulse	0.30	3
2	Rh	103	1,440,252.19	1.72	99.0	Analog	0.30	3
3	Rh	103	3,233,331.03	0.38	102.4	Analog	0.30	3
3	In	115	3,196,197.06	0.96	105.2	Analog	0.30	3
3	Tb	159	4,876,863.05	0.39	106.0	Analog	0.30	3
3	Bi	209	2,704,562.32	0.80	94.8	Analog	0.30	3

Quantitation Report

File Name	A0511015.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 11:19
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	20.878	ppb	1.32	176,927.80	1.183E-01	Pulse	0.30	3
B	11	6	3	221.808	ppb	2.38	1,409,323.03	9.428E-01	Analog	0.30	3
Na	23	45	2	97209.011	ppb	1.02	110,009,807.25	1.421E+03	Analog	0.30	3
Mg	26	45	2	97660.363	ppb	1.44	9,521,463.61	1.230E+02	Analog	0.30	3
Al	27	45	2	32.844	ppb	3.00	6,733.58	8.696E-02	Pulse	0.30	3
K	39	45	2	101542.993	ppb	1.31	30,663,777.32	3.961E+02	Analog	0.30	3
Ca	44	45	3	95220.020	ppb	0.20	97,900,237.43	4.331E+01	Analog	0.30	3
V	51	45	2	21.577	ppb	0.40	91,468.20	1.181E+00	Pulse	0.30	3
Cr	52	45	2	20.207	ppb	0.57	116,357.86	1.503E+00	Pulse	0.30	3
Mn	55	45	2	17.482	ppb	0.84	51,556.61	6.659E-01	Pulse	0.30	3
Fe	56	45	2	21.511	ppb	1.61	106,210.64	1.372E+00	Pulse	0.30	3
Co	59	45	2	19.478	ppb	1.34	193,503.06	2.499E+00	Pulse	0.30	3
Ni	60	72	2	19.037	ppb	0.52	48,092.87	1.003E+00	Pulse	0.30	3
Cu	63	72	2	16.934	ppb	0.91	125,285.04	2.613E+00	Pulse	0.30	3
Zn	66	72	2	17.053	ppb	1.07	20,062.19	4.184E-01	Pulse	0.30	3
As	75	72	2	20.078	ppb	2.08	12,162.80	2.537E-01	Pulse	0.75	3
Se	78	72	1	19.688	ppb	5.58	3,472.73	7.667E-02	Pulse	0.30	3
Mo	95	103	2	22.971	ppb	0.59	67,418.44	5.368E-02	Pulse	0.30	3
Ag	107	103	3	17.989	ppb	0.41	446,212.12	1.518E-01	Pulse	0.30	3
Cd	111	115	3	15.618	ppb	0.25	88,473.56	2.936E-02	Pulse	0.30	3
Sb	121	115	3	21.382	ppb	0.43	448,385.72	1.488E-01	Pulse	0.30	3
Ba	137	159	3	13.589	ppb	0.78	93,445.56	2.014E-02	Pulse	0.30	3
Tl	205	209	3	22.386	ppb	0.38	990,344.05	3.796E-01	Pulse	0.30	3
Pb	208	209	3	20.549	ppb	0.58	1,245,678.28	4.775E-01	Pulse	0.30	3
U	238	209	3	22.740	ppb	0.72	1,546,210.39	5.927E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,495,124.91	1.29	72.7	Analog	0.30	3
2	Sc	45	77,423.36	1.20	94.0	Pulse	0.30	3
3	Sc	45	2,260,464.98	0.28	99.4	Analog	0.30	3
1	Ge	72	45,298.39	0.56	86.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	47,943.60	1.14	95.1	Pulse	0.30	3
2	Rh	103	1,255,796.77	0.75	86.3	Analog	0.30	3
3	Rh	103	2,939,730.89	0.64	93.1	Analog	0.30	3
3	In	115	3,013,028.27	0.64	99.1	Analog	0.30	3
3	Tb	159	4,640,834.24	0.81	100.8	Analog	0.30	3
3	Bi	209	2,609,072.18	1.19	91.4	Analog	0.30	3

Quantitation Report

File Name	A0511016.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 11:32
Sample Name	MB-58354,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	51.11	2.590E-05	Pulse	0.30	3
B	11	6	3	30.932	ppb	0.56	274,333.18	1.389E-01	Pulse	0.30	3
Na	23	45	2	103.157	ppb	12.25	212,384.18	2.826E+00	Pulse	0.30	3
Mg	26	45	2	16.883	ppb	12.74	1,723.50	2.294E-02	Pulse	0.30	3
Al	27	45	2	35.100	ppb	1.52	6,978.19	9.279E-02	Pulse	0.30	3
K	39	45	2	25.451	ppb	18.26	26,971.44	3.588E-01	Pulse	0.30	3
Ca	44	45	3	18.880	ppb	9.45	37,415.25	1.799E-02	Pulse	0.30	3
V	51	45	2	0.191	ppb	4.09	1,361.23	1.810E-02	Pulse	0.30	3
Cr	52	45	2	0.018	ppb	105.11	1,095.30	1.456E-02	Pulse	0.30	3
Mn	55	45	2	0.054	ppb	50.67	384.21	5.116E-03	Pulse	0.30	3
Fe	56	45	2	0.415	ppb	12.69	3,966.24	5.274E-02	Pulse	0.30	3
Co	59	45	2	0.005	ppb	51.60	78.61	1.048E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	306.19	6.615E-03	Pulse	0.30	3
Cu	63	72	2	0.135	ppb	10.25	4,521.73	9.768E-02	Pulse	0.30	3
Zn	66	72	2	1.818	ppb	6.24	3,255.91	7.033E-02	Pulse	0.30	3
As	75	72	2	0.018	ppb	30.45	20.88	4.512E-04	Pulse	0.75	3
Se	78	72	1	0.036	ppb	57.32	8.89	1.817E-04	Pulse	0.30	3
Mo	95	103	2	0.081	ppb	11.58	305.57	2.214E-04	Pulse	0.30	3
Ag	107	103	3	0.497	ppb	14.11	14,361.92	4.768E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	458.49	1.541E-04	Pulse	0.30	3
Sb	121	115	3	0.024	ppb	17.23	854.51	2.872E-04	Pulse	0.30	3
Ba	137	159	3	0.005	ppb	235.15	346.38	7.600E-05	Pulse	0.30	3
Tl	205	209	3	0.001	ppb	200.92	1,162.32	4.040E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	5,677.18	1.974E-03	Pulse	0.30	3
U	238	209	3	0.002	ppb	13.67	309.74	1.077E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,975,460.30	0.55	96.1	Analog	0.30	3
2	Sc	45	75,210.09	1.39	91.4	Pulse	0.30	3
3	Sc	45	2,080,033.20	0.47	91.5	Analog	0.30	3
1	Ge	72	48,986.50	0.95	93.8	Pulse	0.30	3
2	Ge	72	46,294.40	0.30	91.9	Pulse	0.30	3
2	Rh	103	1,381,532.60	1.16	94.9	Analog	0.30	3
3	Rh	103	3,013,642.42	0.65	95.5	Analog	0.30	3
3	In	115	2,974,670.17	0.73	97.9	Analog	0.30	3
3	Tb	159	4,557,773.68	0.45	99.0	Analog	0.30	3
3	Bi	209	2,875,506.10	0.96	100.8	Analog	0.30	3

Quantitation Report

File Name	A0511017.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 11:37
Sample Name	LCS-58354,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.961	ppb	0.10	108,992.02	5.649E-02	Pulse	0.30	3
B	11	6	3	1941.127	ppb	1.10	15,789,990.08	8.184E+00	Analog	0.30	3
Na	23	45	2	288.685	ppb	1.37	438,346.27	5.535E+00	Pulse	0.30	3
Mg	26	45	2	104.425	ppb	1.27	10,548.15	1.332E-01	Pulse	0.30	3
Al	27	45	2	199.083	ppb	2.39	40,955.05	5.171E-01	Pulse	0.30	3
K	39	45	2	104.766	ppb	2.50	52,895.47	6.679E-01	Pulse	0.30	3
Ca	44	45	3	134.466	ppb	0.19	152,486.58	7.055E-02	Pulse	0.30	3
V	51	45	2	10.005	ppb	0.72	43,710.78	5.519E-01	Pulse	0.30	3
Cr	52	45	2	9.654	ppb	1.14	57,412.24	7.249E-01	Pulse	0.30	3
Mn	55	45	2	100.702	ppb	0.79	302,621.98	3.821E+00	Pulse	0.30	3
Fe	56	45	2	106.701	ppb	0.73	530,568.16	6.699E+00	Pulse	0.30	3
Co	59	45	2	9.406	ppb	1.16	95,600.00	1.207E+00	Pulse	0.30	3
Ni	60	72	2	10.074	ppb	2.17	26,136.82	5.356E-01	Pulse	0.30	3
Cu	63	72	2	9.610	ppb	1.15	74,001.89	1.517E+00	Pulse	0.30	3
Zn	66	72	2	98.009	ppb	1.66	110,669.46	2.268E+00	Pulse	0.30	3
As	75	72	2	9.829	ppb	1.41	6,066.08	1.243E-01	Pulse	0.75	3
Se	78	72	1	9.114	ppb	9.65	1,802.40	3.551E-02	Pulse	0.30	3
Mo	95	103	2	10.243	ppb	1.61	33,804.33	2.396E-02	Pulse	0.30	3
Ag	107	103	3	0.016	ppb	36.93	2,220.14	7.231E-04	Pulse	0.30	3
Cd	111	115	3	9.918	ppb	1.44	57,238.90	1.876E-02	Pulse	0.30	3
Sb	121	115	3	10.115	ppb	0.38	214,935.92	7.046E-02	Pulse	0.30	3
Ba	137	159	3	104.405	ppb	0.77	722,681.97	1.543E-01	Pulse	0.30	3
Tl	205	209	3	10.025	ppb	0.57	498,966.98	1.702E-01	Pulse	0.30	3
Pb	208	209	3	10.291	ppb	0.66	705,316.49	2.406E-01	Pulse	0.30	3
U	238	209	3	0.004	ppb	30.85	402.47	1.374E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,929,352.68	0.47	93.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	79,204.20	1.54	96.2	Pulse	0.30	3
3	Sc	45	2,161,372.61	0.49	95.0	Analog	0.30	3
1	Ge	72	50,776.45	1.30	97.2	Pulse	0.30	3
2	Ge	72	48,797.34	1.36	96.8	Pulse	0.30	3
2	Rh	103	1,410,892.25	1.29	97.0	Analog	0.30	3
3	Rh	103	3,070,366.48	0.32	97.3	Analog	0.30	3
3	In	115	3,050,492.22	0.52	100.4	Analog	0.30	3
3	Tb	159	4,685,227.84	0.54	101.8	Analog	0.30	3
3	Bi	209	2,931,630.41	0.66	102.7	Analog	0.30	3

Quantitation Report

File Name	A0511018.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 11:43
Sample Name	N019653-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	44.44	2.363E-05	Pulse	0.30	3
B	11	6	3	222.725	ppb	1.03	1,780,902.47	9.467E-01	Analog	0.30	3
Na	23	45	2	80729.093	ppb	0.37	96,060,879.68	1.180E+03	Analog	0.30	3
Mg	26	45	2	15321.325	ppb	1.34	1,570,328.29	1.930E+01	Analog	0.30	3
Al	27	45	2	0.064	ppb	425.83	173.40	2.139E-03	Pulse	0.30	3
K	39	45	2	4760.795	ppb	0.93	1,531,658.85	1.882E+01	Analog	0.30	3
Ca	44	45	3	72324.053	ppb	0.38	78,069,099.39	3.290E+01	Analog	0.30	3
V	51	45	2	1.929	ppb	0.99	9,164.02	1.126E-01	Pulse	0.30	3
Cr	52	45	2	0.421	ppb	4.30	3,604.95	4.431E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,148.81	-2.640E-02	Pulse	0.30	3
Fe	56	45	2	3.397	ppb	2.98	19,469.28	2.392E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	25.78	3.125E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	237.57	4.792E-03	Pulse	0.30	3
Cu	63	72	2	0.882	ppb	4.04	10,392.60	2.096E-01	Pulse	0.30	3
Zn	66	72	2	4.512	ppb	1.44	6,541.23	1.319E-01	Pulse	0.30	3
As	75	72	2	1.506	ppb	4.95	953.55	1.924E-02	Pulse	0.75	3
Se	78	72	1	0.211	ppb	10.03	44.45	8.648E-04	Pulse	0.30	3
Mo	95	103	2	1.427	ppb	6.38	4,495.26	3.364E-03	Pulse	0.30	3
Ag	107	103	3	0.018	ppb	8.15	2,150.97	7.402E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-20,000.40	-6.689E-03	Pulse	0.30	3
Sb	121	115	3	0.043	ppb	11.23	1,255.66	4.200E-04	Pulse	0.30	3
Ba	137	159	3	51.804	ppb	0.37	361,186.20	7.657E-02	Pulse	0.30	3
Tl	205	209	3	0.049	ppb	9.97	3,420.53	1.224E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-31,202.26	-1.116E-02	Pulse	0.30	3
U	238	209	3	20.943	ppb	0.83	1,525,939.79	5.458E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,881,282.54	0.34	91.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	81,389.25	1.90	98.9	Pulse	0.30	3
3	Sc	45	2,373,064.68	0.24	104.3	Analog	0.30	3
1	Ge	72	51,427.50	1.12	98.4	Pulse	0.30	3
2	Ge	72	49,588.42	2.61	98.4	Pulse	0.30	3
2	Rh	103	1,335,747.95	2.12	91.8	Analog	0.30	3
3	Rh	103	2,906,288.88	1.13	92.1	Analog	0.30	3
3	In	115	2,989,967.77	0.21	98.4	Analog	0.30	3
3	Tb	159	4,717,061.67	0.48	102.5	Analog	0.30	3
3	Bi	209	2,795,702.74	0.56	98.0	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511019.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 11:49
Sample Name	N019628-006B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.012	ppb	2.47	61.11	1.147E-04	Pulse	0.30	3
B	11	6	3	4237.651	ppb	2.37	9,511,701.03	1.786E+01	Analog	0.30	3
Na	23	45	2	2980100.078	ppb	0.42	3,343,021,425.74	4.352E+04	Analog	0.30	3
Mg	26	45	2	17619.063	ppb	0.99	1,703,945.16	2.219E+01	Analog	0.30	3
Al	27	45	2	13.471	ppb	8.78	2,832.14	3.683E-02	Pulse	0.30	3
K	39	45	2	39910.133	ppb	1.04	11,970,422.18	1.558E+02	Analog	0.30	3
Ca	44	45	3	242529.245	ppb	0.44	220,056,961.16	1.103E+02	Analog	0.30	3
V	51	45	2	0.011	ppb	175.67	636.71	8.272E-03	Pulse	0.30	3
Cr	52	45	2	0.023	ppb	371.21	1,129.67	1.491E-02	Pulse	0.30	3
Mn	55	45	2	471.243	ppb	0.61	1,372,739.81	1.787E+01	Analog	0.30	3
Fe	56	45	2	3709.656	ppb	0.48	17,820,028.80	2.320E+02	Analog	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,302.77	-4.300E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-3,241.59	-7.824E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-78,004.50	-1.882E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-8,643.76	-2.086E-01	Pulse	0.30	3
As	75	72	2	0.103	ppb	37.43	63.78	1.527E-03	Pulse	0.75	3
Se	78	72	1	0.190	ppb	39.63	32.22	7.829E-04	Pulse	0.30	3
Mo	95	103	2	2.953	ppb	0.77	6,759.47	6.928E-03	Pulse	0.30	3
Ag	107	103	3	0.043	ppb	195.34	2,037.50	9.547E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-282.55	-1.310E-04	Pulse	0.30	3
Sb	121	115	3	0.038	ppb	14.52	826.72	3.831E-04	Pulse	0.30	3
Ba	137	159	3	292.773	ppb	1.02	1,468,902.82	4.324E-01	Analog	0.30	3
Tl	205	209	3	0.000	ppb	2513.13	716.72	3.906E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-20,840.79	-1.135E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-1,656.74	-9.025E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	532,912.75	3.15	25.9	Analog	0.30	3
2	Sc	45	76,813.19	5.03	93.3	Pulse	0.30	3
3	Sc	45	1,995,247.83	1.99	87.7	Analog	0.30	3
1	Ge	72	41,296.47	1.35	79.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	41,445.74	4.74	82.2	Pulse	0.30	3
2	Rh	103	975,665.02	4.78	67.1	Pulse	0.30	3
3	Rh	103	2,121,262.68	1.74	67.2	Analog	0.30	3
3	In	115	2,158,387.87	2.30	71.0	Analog	0.30	3
3	Tb	159	3,396,620.68	1.78	73.8	Analog	0.30	3
3	Bi	209	1,836,126.31	1.86	64.3	Analog	0.30	3

Quantitation Report

DILUTION TEST

and reference sample for Mn Mo

File Name	A0511020.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 11:54
Sample Name	N019628-006B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	63.80	90.01	5.531E-05	Pulse	0.30	3
B	11	6	3	397.586	ppb	0.27	2,741,115.20	1.683E+00	Analog	0.30	3
Na	23	45	2	664925.560	ppb	0.26	823,179,756.62	9.712E+03	Analog	0.30	3
Mg	26	45	2	3849.630	ppb	1.07	411,013.92	4.850E+00	Pulse	0.30	3
Al	27	45	2	5.594	ppb	3.87	1,393.63	1.645E-02	Pulse	0.30	3
K	39	45	2	8587.414	ppb	0.59	2,859,414.26	3.373E+01	Analog	0.30	3
Ca	44	45	3	54217.179	ppb	0.21	57,206,725.26	2.466E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	260.01	3.058E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	725.98	8.560E-03	Pulse	0.30	3
Mn	55	45	2	103.916	ppb	0.08	334,199.18	3.943E+00	Pulse	0.30	3
Fe	56	45	2	867.137	ppb	0.62	4,598,135.15	5.425E+01	Analog	0.30	3
Co	59	45	2	<0.000	ppb	---	-747.46	-8.822E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-535.69	-1.078E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-17,567.18	-3.532E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,048.10	-2.109E-02	Pulse	0.30	3
As	75	72	2	0.022	ppb	66.74	24.99	5.039E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.629	ppb	3.55	1,897.96	1.501E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-866.79	-3.156E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	266.03	9.547E-05	Pulse	0.30	3
Sb	121	115	3	0.012	ppb	12.90	561.15	2.010E-04	Pulse	0.30	3
Ba	137	159	3	63.594	ppb	0.33	404,795.34	9.398E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	785.61	3.240E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,357.52	-9.713E-04	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-128.15	-5.285E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,628,535.33	1.50	79.2	Analog	0.30	3
2	Sc	45	84,759.89	2.21	102.9	Pulse	0.30	3
3	Sc	45	2,319,388.75	1.54	102.0	Analog	0.30	3
1	Ge	72	51,546.84	2.36	98.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	49,729.93	1.37	98.7	Pulse	0.30	3
2	Rh	103	1,265,833.97	3.60	87.0	Analog	0.30	3
3	Rh	103	2,742,197.25	2.28	86.9	Analog	0.30	3
3	In	115	2,790,997.51	1.54	91.8	Analog	0.30	3
3	Tb	159	4,306,975.08	1.64	93.6	Analog	0.30	3
3	Bi	209	2,425,025.31	1.56	85.0	Analog	0.30	3

Quantitation Report

File Name	A0511021.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:00
Sample Name	N019628-006B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	26.688	ppb	2.10	78,846.34	1.513E-01	Pulse	0.30	3
B	11	6	3	8808.796	ppb	1.89	19,343,355.53	3.711E+01	Analog	0.30	3
Na	23	45	2	2882210.062	ppb	0.73	3,195,785,410.16	4.209E+04	Analog	0.30	3
Mg	26	45	2	17415.437	ppb	0.59	1,665,501.68	2.193E+01	Analog	0.30	3
Al	27	45	2	206.498	ppb	2.89	40,704.22	5.363E-01	Pulse	0.30	3
K	39	45	2	38745.499	ppb	0.81	11,486,099.69	1.513E+02	Analog	0.30	3
Ca	44	45	3	234100.292	ppb	0.91	200,669,534.79	1.065E+02	Analog	0.30	3
V	51	45	2	9.557	ppb	1.62	40,052.53	5.276E-01	Pulse	0.30	3
Cr	52	45	2	8.602	ppb	0.87	49,156.75	6.474E-01	Pulse	0.30	3
Mn	55	45	2	543.110	ppb	1.41	1,563,510.47	2.059E+01	Analog	0.30	3
Fe	56	45	2	3707.943	ppb	0.08	17,606,923.82	2.319E+02	Analog	0.30	3
Co	59	45	2	7.148	ppb	1.30	69,663.43	9.175E-01	Pulse	0.30	3
Ni	60	72	2	7.341	ppb	1.06	16,100.34	3.931E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-23,645.18	-5.772E-01	Pulse	0.30	3
Zn	66	72	2	78.018	ppb	1.23	74,210.16	1.811E+00	Pulse	0.30	3
As	75	72	2	9.768	ppb	2.98	5,058.09	1.235E-01	Pulse	0.75	3
Se	78	72	1	8.600	ppb	3.48	1,432.35	3.351E-02	Pulse	0.30	3
Mo	95	103	2	14.874	ppb	0.80	34,248.66	3.477E-02	Pulse	0.30	3
Ag	107	103	3	1.212	ppb	3.49	21,595.69	1.078E-02	Pulse	0.30	3
Cd	111	115	3	8.728	ppb	2.60	33,775.67	1.655E-02	Pulse	0.30	3
Sb	121	115	3	9.785	ppb	0.76	139,188.34	6.816E-02	Pulse	0.30	3
Ba	137	159	3	389.754	ppb	0.20	1,844,440.10	5.756E-01	Analog	0.30	3
Tl	205	209	3	8.365	ppb	0.30	245,009.14	1.421E-01	Pulse	0.30	3
Pb	208	209	3	9.680	ppb	0.41	390,561.59	2.265E-01	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-1,263.60	-7.310E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	521,117.86	3.36	25.3	Analog	0.30	3
2	Sc	45	75,926.84	2.91	92.2	Pulse	0.30	3
3	Sc	45	1,885,375.13	5.07	82.9	Analog	0.30	3
1	Ge	72	42,739.17	0.22	81.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	40,964.54	2.48	81.3	Pulse	0.30	3
2	Rh	103	984,791.50	2.80	67.7	Pulse	0.30	3
3	Rh	103	2,004,211.57	3.84	63.5	Analog	0.30	3
3	In	115	2,042,236.26	5.26	67.2	Analog	0.30	3
3	Tb	159	3,204,295.58	4.55	69.6	Analog	0.30	3
3	Bi	209	1,724,496.26	3.92	60.4	Analog	0.30	3

Quantitation Report

File Name	A0511022.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:05
Sample Name	N019628-006B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	31.063	ppb	7.61	77,486.52	1.761E-01	Pulse	0.30	3
B	11	6	3	10646.445	ppb	5.95	19,756,311.68	4.485E+01	Analog	0.30	3
Na	23	45	2	2995322.819	ppb	0.69	3,250,251,684.90	4.375E+04	Analog	0.30	3
Mg	26	45	2	17867.808	ppb	0.54	1,671,927.23	2.250E+01	Analog	0.30	3
Al	27	45	2	198.303	ppb	0.79	38,266.91	5.151E-01	Pulse	0.30	3
K	39	45	2	39768.550	ppb	1.39	11,537,399.27	1.553E+02	Analog	0.30	3
Ca	44	45	3	243761.134	ppb	0.68	219,541,258.95	1.109E+02	Analog	0.30	3
V	51	45	2	9.453	ppb	0.93	38,778.65	5.219E-01	Pulse	0.30	3
Cr	52	45	2	8.604	ppb	2.27	48,100.11	6.475E-01	Pulse	0.30	3
Mn	55	45	2	560.259	ppb	0.28	1,578,402.32	2.124E+01	Analog	0.30	3
Fe	56	45	2	3799.832	ppb	0.73	17,656,544.34	2.376E+02	Analog	0.30	3
Co	59	45	2	7.233	ppb	0.90	68,970.63	9.283E-01	Pulse	0.30	3
Ni	60	72	2	7.482	ppb	2.17	15,958.36	4.004E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-25,601.35	-6.424E-01	Pulse	0.30	3
Zn	66	72	2	75.824	ppb	0.34	70,202.73	1.761E+00	Pulse	0.30	3
As	75	72	2	10.007	ppb	2.31	5,042.06	1.265E-01	Pulse	0.75	3
Se	78	72	1	7.900	ppb	5.06	1,296.78	3.079E-02	Pulse	0.30	3
Mo	95	103	2	15.163	ppb	1.05	34,535.77	3.545E-02	Pulse	0.30	3
Ag	107	103	3	1.359	ppb	1.59	25,665.76	1.202E-02	Pulse	0.30	3
Cd	111	115	3	8.920	ppb	0.01	37,118.64	1.691E-02	Pulse	0.30	3
Sb	121	115	3	9.847	ppb	0.37	150,609.80	6.860E-02	Pulse	0.30	3
Ba	137	159	3	400.216	ppb	0.41	2,016,372.43	5.911E-01	Analog	0.30	3
Tl	205	209	3	8.680	ppb	0.95	271,769.79	1.474E-01	Pulse	0.30	3
Pb	208	209	3	9.795	ppb	0.72	422,267.98	2.291E-01	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-1,411.53	-7.659E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	441,907.71	7.99	21.5	Analog	0.30	3
2	Sc	45	74,294.95	1.88	90.2	Pulse	0.30	3
3	Sc	45	1,980,646.80	3.14	87.1	Analog	0.30	3
1	Ge	72	42,139.57	1.89	80.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	39,859.55	2.39	79.1	Pulse	0.30	3
2	Rh	103	974,138.71	2.22	66.9	Pulse	0.30	3
3	Rh	103	2,136,126.72	2.72	67.7	Analog	0.30	3
3	In	115	2,195,601.99	2.43	72.2	Analog	0.30	3
3	Tb	159	3,411,069.64	2.71	74.1	Analog	0.30	3
3	Bi	209	1,843,101.67	3.10	64.6	Analog	0.30	3

Quantitation Report

File Name	A0511023.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:11
Sample Name	N019628-006B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	31.361	ppb	4.18	70,758.84	1.778E-01	Pulse	0.30	3
B	11	6	3	10843.279	ppb	4.18	18,183,378.83	4.568E+01	Analog	0.30	3
Na	23	45	2	3011013.529	ppb	0.09	3,289,764,039.87	4.397E+04	Analog	0.30	3
Mg	26	45	2	17883.725	ppb	0.23	1,685,008.69	2.252E+01	Analog	0.30	3
Al	27	45	2	197.281	ppb	2.74	38,348.98	5.124E-01	Pulse	0.30	3
K	39	45	2	39815.824	ppb	0.65	11,630,608.30	1.555E+02	Analog	0.30	3
Ca	44	45	3	245837.923	ppb	1.01	211,000,423.52	1.118E+02	Analog	0.30	3
V	51	45	2	9.579	ppb	1.56	39,570.64	5.288E-01	Pulse	0.30	3
Cr	52	45	2	8.627	ppb	0.52	48,574.78	6.493E-01	Pulse	0.30	3
Mn	55	45	2	561.149	ppb	0.67	1,591,796.41	2.128E+01	Analog	0.30	3
Fe	56	45	2	3806.129	ppb	0.39	17,808,011.02	2.380E+02	Analog	0.30	3
Co	59	45	2	7.346	ppb	0.63	70,534.94	9.428E-01	Pulse	0.30	3
Ni	60	72	2	7.376	ppb	3.03	16,031.60	3.949E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-25,800.32	-6.352E-01	Pulse	0.30	3
Zn	66	72	2	75.478	ppb	1.71	71,198.01	1.753E+00	Pulse	0.30	3
As	75	72	2	9.665	ppb	1.64	4,963.33	1.222E-01	Pulse	0.75	3
Se	78	72	1	8.620	ppb	5.34	1,370.12	3.359E-02	Pulse	0.30	3
Mo	95	103	2	14.887	ppb	1.16	34,783.00	3.480E-02	Pulse	0.30	3
Ag	107	103	3	1.358	ppb	2.07	24,731.30	1.201E-02	Pulse	0.30	3
Cd	111	115	3	8.834	ppb	0.83	36,395.13	1.675E-02	Pulse	0.30	3
Sb	121	115	3	9.934	ppb	0.34	150,389.95	6.921E-02	Pulse	0.30	3
Ba	137	159	3	395.060	ppb	0.57	1,991,773.21	5.835E-01	Analog	0.30	3
Tl	205	209	3	8.793	ppb	0.97	274,136.73	1.493E-01	Pulse	0.30	3
Pb	208	209	3	9.844	ppb	0.31	422,646.26	2.303E-01	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-1,371.56	-7.472E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	398,395.10	2.96	19.4	Analog	0.30	3
2	Sc	45	74,810.68	3.31	90.9	Pulse	0.30	3
3	Sc	45	1,887,197.54	0.82	83.0	Analog	0.30	3
1	Ge	72	40,792.86	2.42	78.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	40,614.80	3.25	80.6	Pulse	0.30	3
2	Rh	103	999,321.17	3.07	68.7	Pulse	0.30	3
3	Rh	103	2,060,177.73	1.91	65.3	Analog	0.30	3
3	In	115	2,173,137.02	1.57	71.5	Analog	0.30	3
3	Tb	159	3,413,386.97	1.59	74.2	Analog	0.30	3
3	Bi	209	1,835,525.18	2.19	64.3	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0511024.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:17
Sample Name	N019654-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	68.89	3.405E-05	Pulse	0.30	3
B	11	6	3	844.898	ppb	0.27	7,219,653.00	3.567E+00	Analog	0.30	3
Na	23	45	2	104826.000	ppb	0.80	142,416,694.55	1.532E+03	Analog	0.30	3
Mg	26	45	2	20272.804	ppb	1.55	2,373,221.09	2.553E+01	Analog	0.30	3
Al	27	45	2	3.203	ppb	12.73	953.43	1.026E-02	Pulse	0.30	3
K	39	45	2	4051.051	ppb	2.22	1,491,804.86	1.605E+01	Analog	0.30	3
Ca	44	45	3	108741.285	ppb	0.75	129,707,129.18	4.946E+01	Analog	0.30	3
V	51	45	2	4.944	ppb	1.87	25,713.11	2.767E-01	Pulse	0.30	3
Cr	52	45	2	134.068	ppb	0.32	919,912.77	9.897E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,173.64	-2.338E-02	Pulse	0.30	3
Fe	56	45	2	1.941	ppb	1.62	13,771.64	1.482E-01	Pulse	0.30	3
Co	59	45	2	0.028	ppb	13.28	372.64	4.010E-03	Pulse	0.30	3
Ni	60	72	2	1.616	ppb	2.23	5,192.49	9.445E-02	Pulse	0.30	3
Cu	63	72	2	0.945	ppb	3.72	12,039.86	2.190E-01	Pulse	0.30	3
Zn	66	72	2	1.023	ppb	4.54	2,869.21	5.218E-02	Pulse	0.30	3
As	75	72	2	0.613	ppb	3.77	437.78	7.961E-03	Pulse	0.75	3
Se	78	72	1	1.244	ppb	11.21	277.79	4.885E-03	Pulse	0.30	3
Mo	95	103	2	1.881	ppb	1.88	6,484.89	4.424E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,622.60	-5.197E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,664.22	-5.988E-03	Pulse	0.30	3
Sb	121	115	3	0.035	ppb	14.07	1,196.77	3.654E-04	Pulse	0.30	3
Ba	137	159	3	49.520	ppb	4.55	372,063.91	7.320E-02	Pulse	0.30	3
Tl	205	209	3	0.405	ppb	4.43	21,373.87	7.245E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-39,479.44	-1.337E-02	Pulse	0.30	3
U	238	209	3	41.085	ppb	0.34	3,158,792.31	1.071E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,023,944.57	0.33	98.4	Analog	0.30	3
2	Sc	45	92,948.54	0.75	112.9	Pulse	0.30	3
3	Sc	45	2,622,717.17	1.30	115.3	Analog	0.30	3
1	Ge	72	56,864.32	0.03	108.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	54,979.79	1.42	109.1	Pulse	0.30	3
2	Rh	103	1,466,319.98	2.49	100.8	Analog	0.30	3
3	Rh	103	3,122,119.26	0.99	98.9	Analog	0.30	3
3	In	115	3,275,196.76	0.55	107.8	Analog	0.30	3
3	Tb	159	5,083,894.79	0.62	110.5	Analog	0.30	3
3	Bi	209	2,950,128.60	0.29	103.4	Analog	0.30	3

Quantitation Report

File Name	A0511025.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:22
Sample Name	N019654-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.255	ppb	0.54	115,733.93	5.816E-02	Pulse	0.30	3
B	11	6	3	2843.599	ppb	0.13	23,850,480.31	1.199E+01	Analog	0.30	3
Na	23	45	2	101935.259	ppb	0.64	134,718,109.10	1.490E+03	Analog	0.30	3
Mg	26	45	2	20093.524	ppb	0.92	2,288,231.67	2.531E+01	Analog	0.30	3
Al	27	45	2	193.156	ppb	0.85	45,369.74	5.018E-01	Pulse	0.30	3
K	39	45	2	4087.587	ppb	0.69	1,464,132.22	1.619E+01	Analog	0.30	3
Ca	44	45	3	106206.667	ppb	0.70	125,806,569.24	4.831E+01	Analog	0.30	3
V	51	45	2	14.731	ppb	1.08	73,151.53	8.090E-01	Pulse	0.30	3
Cr	52	45	2	140.777	ppb	0.56	939,573.01	1.039E+01	Pulse	0.30	3
Mn	55	45	2	93.844	ppb	0.76	321,977.82	3.561E+00	Pulse	0.30	3
Fe	56	45	2	94.504	ppb	0.59	536,737.01	5.936E+00	Pulse	0.30	3
Co	59	45	2	8.604	ppb	1.33	99,836.36	1.104E+00	Pulse	0.30	3
Ni	60	72	2	10.795	ppb	1.50	30,977.86	5.732E-01	Pulse	0.30	3
Cu	63	72	2	9.592	ppb	0.70	81,811.16	1.514E+00	Pulse	0.30	3
Zn	66	72	2	93.950	ppb	0.41	117,559.21	2.175E+00	Pulse	0.30	3
As	75	72	2	10.647	ppb	2.25	7,273.99	1.346E-01	Pulse	0.75	3
Se	78	72	1	10.578	ppb	1.91	2,331.37	4.121E-02	Pulse	0.30	3
Mo	95	103	2	12.910	ppb	0.97	42,819.17	3.019E-02	Pulse	0.30	3
Ag	107	103	3	0.034	ppb	23.03	2,703.81	8.793E-04	Pulse	0.30	3
Cd	111	115	3	9.620	ppb	0.35	58,709.65	1.821E-02	Pulse	0.30	3
Sb	121	115	3	10.166	ppb	0.15	228,330.78	7.081E-02	Pulse	0.30	3
Ba	137	159	3	155.892	ppb	1.02	1,158,531.29	2.303E-01	Analog	0.30	3
Tl	205	209	3	10.124	ppb	0.95	500,057.42	1.719E-01	Pulse	0.30	3
Pb	208	209	3	10.307	ppb	0.44	700,970.12	2.409E-01	Pulse	0.30	3
U	238	209	3	40.734	ppb	1.10	3,088,164.71	1.062E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,990,004.50	0.72	96.8	Analog	0.30	3
2	Sc	45	90,416.97	0.67	109.8	Pulse	0.30	3
3	Sc	45	2,604,404.09	0.16	114.5	Analog	0.30	3
1	Ge	72	56,566.56	1.36	108.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	54,037.98	0.69	107.2	Pulse	0.30	3
2	Rh	103	1,418,590.26	1.13	97.5	Analog	0.30	3
3	Rh	103	3,074,762.80	0.42	97.4	Analog	0.30	3
3	In	115	3,224,397.24	0.30	106.1	Analog	0.30	3
3	Tb	159	5,030,980.90	0.53	109.3	Analog	0.30	3
3	Bi	209	2,909,291.66	1.06	102.0	Analog	0.30	3

Quantitation Report

File Name	A0511026.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:28
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.331	ppb	1.19	247,287.70	1.096E-01	Pulse	0.30	3
B	11	6	3	254.141	ppb	1.87	2,434,748.65	1.079E+00	Analog	0.30	3
Na	23	45	2	711.716	ppb	4.87	1,175,892.87	1.171E+01	Analog	0.30	3
Mg	26	45	2	206.330	ppb	1.34	26,266.75	2.615E-01	Pulse	0.30	3
Al	27	45	2	22.018	ppb	3.48	5,920.90	5.895E-02	Pulse	0.30	3
K	39	45	2	218.921	ppb	2.44	111,763.01	1.113E+00	Pulse	0.30	3
Ca	44	45	3	233.597	ppb	0.68	308,107.44	1.156E-01	Pulse	0.30	3
V	51	45	2	19.906	ppb	0.98	109,528.65	1.091E+00	Pulse	0.30	3
Cr	52	45	2	19.291	ppb	1.02	144,166.86	1.435E+00	Pulse	0.30	3
Mn	55	45	2	20.152	ppb	1.51	77,042.82	7.671E-01	Pulse	0.30	3
Fe	56	45	2	21.326	ppb	0.81	136,633.53	1.360E+00	Pulse	0.30	3
Co	59	45	2	19.391	ppb	1.02	249,895.53	2.488E+00	Pulse	0.30	3
Ni	60	72	2	19.285	ppb	1.24	64,248.69	1.016E+00	Pulse	0.30	3
Cu	63	72	2	18.701	ppb	1.47	181,971.01	2.878E+00	Pulse	0.30	3
Zn	66	72	2	19.142	ppb	1.61	29,478.23	4.662E-01	Pulse	0.30	3
As	75	72	2	19.008	ppb	2.14	15,185.39	2.402E-01	Pulse	0.75	3
Se	78	72	1	20.745	ppb	1.12	5,228.83	8.078E-02	Pulse	0.30	3
Mo	95	103	2	19.948	ppb	1.73	82,339.02	4.663E-02	Pulse	0.30	3
Ag	107	103	3	19.621	ppb	0.62	613,819.81	1.655E-01	Pulse	0.30	3
Cd	111	115	3	19.858	ppb	0.49	139,578.60	3.725E-02	Pulse	0.30	3
Sb	121	115	3	19.836	ppb	1.03	517,322.91	1.381E-01	Pulse	0.30	3
Ba	137	159	3	20.620	ppb	0.65	173,940.43	3.052E-02	Pulse	0.30	3
Tl	205	209	3	20.186	ppb	0.76	1,221,348.52	3.423E-01	Analog	0.30	3
Pb	208	209	3	20.174	ppb	0.97	1,672,566.15	4.688E-01	Pulse	0.30	3
U	238	209	3	19.986	ppb	0.78	1,858,378.71	5.209E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,256,729.30	1.02	109.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	100,448.41	1.92	122.0	Pulse	0.30	3
3	Sc	45	2,664,644.01	0.44	117.2	Analog	0.30	3
1	Ge	72	64,725.46	0.07	123.9	Pulse	0.30	3
2	Ge	72	63,232.80	0.67	125.5	Pulse	0.30	3
2	Rh	103	1,766,034.16	1.17	121.4	Analog	0.30	3
3	Rh	103	3,708,780.60	0.43	117.5	Analog	0.30	3
3	In	115	3,747,091.55	0.61	123.3	Analog	0.30	3
3	Tb	159	5,699,463.25	0.83	123.8	Analog	0.30	3
3	Bi	209	3,567,835.33	0.67	125.0	Analog	0.30	3

Quantitation Report

File Name	A0511027.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:33
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	102.23	4.755E-05	Pulse	0.30	3
B	11	6	3	31.219	ppb	2.22	301,163.57	1.401E-01	Pulse	0.30	3
Na	23	45	2	287.715	ppb	5.71	531,624.54	5.521E+00	Pulse	0.30	3
Mg	26	45	2	1.473	ppb	13.68	340.02	3.532E-03	Pulse	0.30	3
Al	27	45	2	0.080	ppb	15.55	209.98	2.180E-03	Pulse	0.30	3
K	39	45	2	7.075	ppb	61.66	27,645.90	2.871E-01	Pulse	0.30	3
Ca	44	45	3	6.762	ppb	4.68	32,104.00	1.248E-02	Pulse	0.30	3
V	51	45	2	0.010	ppb	60.72	791.17	8.210E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,046.19	1.086E-02	Pulse	0.30	3
Mn	55	45	2	0.003	ppb	548.55	305.63	3.178E-03	Pulse	0.30	3
Fe	56	45	2	0.120	ppb	11.01	3,304.58	3.430E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	107.59	46.11	4.792E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	377.21	6.153E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	3,777.99	6.160E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,053.80	1.717E-02	Pulse	0.30	3
As	75	72	2	0.016	ppb	17.11	26.66	4.345E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	2.22	3.546E-05	Pulse	0.30	3
Mo	95	103	2	0.080	ppb	9.04	377.79	2.183E-04	Pulse	0.30	3
Ag	107	103	3	0.776	ppb	14.27	25,990.17	7.110E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	511.57	1.400E-04	Pulse	0.30	3
Sb	121	115	3	0.040	ppb	5.34	1,446.80	3.953E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	377.31	6.734E-05	Pulse	0.30	3
Tl	205	209	3	0.050	ppb	1.30	4,256.32	1.231E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	5,218.56	1.510E-03	Pulse	0.30	3
U	238	209	3	0.006	ppb	14.90	653.84	1.891E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,150,088.49	0.79	104.6	Analog	0.30	3
2	Sc	45	96,333.91	1.47	117.0	Pulse	0.30	3
3	Sc	45	2,572,661.44	0.22	113.1	Analog	0.30	3
1	Ge	72	62,123.47	1.00	118.9	Pulse	0.30	3
2	Ge	72	61,344.89	0.88	121.7	Pulse	0.30	3
2	Rh	103	1,730,088.31	0.97	118.9	Analog	0.30	3
3	Rh	103	3,657,231.37	0.70	115.8	Analog	0.30	3
3	In	115	3,658,733.92	1.20	120.4	Analog	0.30	3
3	Tb	159	5,598,768.67	0.97	121.7	Analog	0.30	3
3	Bi	209	3,456,273.45	0.39	121.1	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0511028.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:39
Sample Name	N019628-006B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.015	ppb	18.06	58.89	1.357E-04	Pulse	0.30	3
B	11	6	3	4195.668	ppb	2.53	7,634,389.34	1.768E+01	Analog	0.30	3
Na	23	45	2	2963670.727	ppb	0.66	3,061,274,052.16	4.328E+04	Analog	0.30	3
Mg	26	45	2	17623.223	ppb	1.50	1,569,761.78	2.220E+01	Analog	0.30	3
Al	27	45	2	12.108	ppb	6.47	2,354.90	3.330E-02	Pulse	0.30	3
K	39	45	2	39840.859	ppb	0.32	11,002,013.45	1.556E+02	Analog	0.30	3
Ca	44	45	3	243198.433	ppb	0.71	194,935,032.65	1.106E+02	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	475.58	6.721E-03	Pulse	0.30	3
Cr	52	45	2	0.083	ppb	44.10	1,367.07	1.934E-02	Pulse	0.30	3
Mn	55	45	2	468.973	ppb	0.81	1,257,745.41	1.778E+01	Analog	0.30	3
Fe	56	45	2	3719.208	ppb	0.82	16,450,517.48	2.326E+02	Analog	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,025.08	-4.277E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-2,920.83	-7.536E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-71,442.03	-1.843E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-8,048.25	-2.076E-01	Pulse	0.30	3
As	75	72	2	0.073	ppb	31.82	44.63	1.149E-03	Pulse	0.75	3
Se	78	72	1	0.011	ppb	204.21	3.33	8.434E-05	Pulse	0.30	3
Mo	95	103	2	2.920	ppb	1.24	6,477.12	6.851E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-4,122.63	-2.134E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-315.28	-1.573E-04	Pulse	0.30	3
Sb	121	115	3	0.030	ppb	11.94	660.04	3.294E-04	Pulse	0.30	3
Ba	137	159	3	290.364	ppb	0.94	1,364,619.12	4.289E-01	Analog	0.30	3
Tl	205	209	3	0.038	ppb	13.15	1,773.51	1.031E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-19,423.33	-1.129E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-1,308.62	-7.613E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	432,175.84	6.12	21.0	Analog	0.30	3
2	Sc	45	70,728.39	0.97	85.9	Pulse	0.30	3
3	Sc	45	1,762,904.61	4.92	77.5	Analog	0.30	3
1	Ge	72	39,676.76	0.67	76.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	38,762.47	1.44	76.9	Pulse	0.30	3
2	Rh	103	945,357.23	0.85	65.0	Pulse	0.30	3
3	Rh	103	1,936,371.81	4.11	61.3	Analog	0.30	3
3	In	115	2,008,160.28	4.69	66.1	Analog	0.30	3
3	Tb	159	3,182,779.33	4.80	69.2	Analog	0.30	3
3	Bi	209	1,719,737.08	3.59	60.3	Analog	0.30	3

Quantitation Report

File Name A0511029.D
File Path C:\ICPMH\1\DATA\160511A.B
Method File DEFAULT.M
Method Path C:\ICPMH\1\METHODS\
Acq Time 05/11/2016 12:45
Sample Name N019628-006B,SAMP,25
Sample Type Sample
Comment dilution test for Mn Mo
Prep Dilution 1.000
Auto Dilution N/A
Total Dilution 1.000
Operator Name
Acq Mode Spectrum
Cal Title
Cal Type External Calibration
Last Calib 05/11/2016 16:51
Bkg File
Bkg Mode Count Subtraction except for ISTD
Interference File Acq. Defined
FQ Blank File
VIS Fit Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	63.34	3.487E-05	Pulse	0.30	3
B	11	6	3	98.896	ppb	1.19	772,300.75	4.251E-01	Pulse	0.30	3
Na	23	45	2	138049.824	ppb	0.64	182,174,321.73	2.017E+03	Analog	0.30	3
Mg	26	45	2	785.057	ppb	0.17	89,426.98	9.903E-01	Pulse	0.30	3
Al	27	45	2	1.702	ppb	26.86	575.57	6.376E-03	Pulse	0.30	3
K	39	45	2	1761.274	ppb	0.20	643,359.55	7.125E+00	Pulse	0.30	3
Ca	44	45	3	11279.814	ppb	0.25	12,461,761.21	5.139E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	313.35	3.468E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	810.79	8.980E-03	Pulse	0.30	3
Mn	55	45	2	21.547	ppb	0.70	74,047.08	8.200E-01	Pulse	0.30	3
Fe	56	45	2	181.806	ppb	0.35	1,029,013.08	1.140E+01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-139.11	-1.540E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	132.34	2.356E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-677.48	-1.207E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	533.11	9.505E-03	Pulse	0.30	3
As	75	72	2	0.009	ppb	32.29	19.28	3.436E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	2.22	3.941E-05	Pulse	0.30	3
Mo	95	103	2	0.119	ppb	14.83	468.92	3.103E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	171.58	5.415E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	412.84	1.271E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	386.69	1.189E-04	Pulse	0.30	3
Ba	137	159	3	12.938	ppb	0.57	96,162.87	1.917E-02	Pulse	0.30	3
Tl	205	209	3	0.018	ppb	8.34	2,060.22	7.006E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	2,351.43	8.004E-04	Pulse	0.30	3
U	238	209	3	0.000	ppb	101.01	158.73	5.405E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,816,682.15	0.17	88.4	Analog	0.30	3
2	Sc	45	90,298.48	0.78	109.7	Pulse	0.30	3
3	Sc	45	2,425,044.60	0.55	106.6	Analog	0.30	3
1	Ge	72	57,319.48	1.37	109.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	56,128.23	0.54	111.4	Pulse	0.30	3
2	Rh	103	1,509,379.44	1.43	103.7	Analog	0.30	3
3	Rh	103	3,167,029.26	1.00	100.3	Analog	0.30	3
3	In	115	3,248,926.53	1.07	106.9	Analog	0.30	3
3	Tb	159	5,015,133.99	0.80	109.0	Analog	0.30	3
3	Bi	209	2,940,110.93	1.08	103.0	Analog	0.30	3

Quantitation Report

File Name	A0511030.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:50
Sample Name	N019628-006B-PS,PS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.322	ppb	1.70	17,613.04	1.321E-02	Pulse	0.30	3
B	11	6	3	830.559	ppb	0.81	4,677,010.82	3.507E+00	Analog	0.30	3
Na	23	45	2	619105.912	ppb	0.40	719,184,069.28	9.043E+03	Analog	0.30	3
Mg	26	45	2	3574.310	ppb	0.94	358,112.17	4.503E+00	Pulse	0.30	3
Al	27	45	2	41.160	ppb	2.74	8,626.20	1.085E-01	Pulse	0.30	3
K	39	45	2	8043.444	ppb	0.29	2,514,262.46	3.161E+01	Analog	0.30	3
Ca	44	45	3	51770.588	ppb	0.36	48,062,025.39	2.355E+01	Analog	0.30	3
V	51	45	2	1.934	ppb	2.68	8,974.98	1.129E-01	Pulse	0.30	3
Cr	52	45	2	1.835	ppb	3.72	11,812.03	1.486E-01	Pulse	0.30	3
Mn	55	45	2	117.395	ppb	0.30	354,232.26	4.454E+00	Pulse	0.30	3
Fe	56	45	2	820.194	ppb	0.46	4,081,207.13	5.132E+01	Analog	0.30	3
Co	59	45	2	1.637	ppb	0.51	16,738.95	2.105E-01	Pulse	0.30	3
Ni	60	72	2	1.476	ppb	4.48	4,181.85	8.714E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,966.43	-6.168E-02	Pulse	0.30	3
Zn	66	72	2	16.478	ppb	2.11	19,450.80	4.053E-01	Pulse	0.30	3
As	75	72	2	2.062	ppb	1.63	1,260.77	2.626E-02	Pulse	0.75	3
Se	78	72	1	1.911	ppb	3.58	366.69	7.482E-03	Pulse	0.30	3
Mo	95	103	2	2.774	ppb	2.44	8,101.23	6.511E-03	Pulse	0.30	3
Ag	107	103	3	0.108	ppb	12.20	3,828.02	1.502E-03	Pulse	0.30	3
Cd	111	115	3	1.834	ppb	2.17	9,963.17	3.728E-03	Pulse	0.30	3
Sb	121	115	3	2.115	ppb	1.17	39,620.79	1.483E-02	Pulse	0.30	3
Ba	137	159	3	80.651	ppb	0.32	502,196.06	1.192E-01	Pulse	0.30	3
Tl	205	209	3	1.660	ppb	1.04	68,737.26	2.851E-02	Pulse	0.30	3
Pb	208	209	3	1.985	ppb	0.80	117,632.48	4.879E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-216.66	-8.970E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,333,618.88	1.66	64.9	Analog	0.30	3
2	Sc	45	79,535.36	1.85	96.6	Pulse	0.30	3
3	Sc	45	2,040,655.06	3.06	89.7	Analog	0.30	3
1	Ge	72	49,013.42	0.53	93.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	48,002.54	2.00	95.2	Pulse	0.30	3
2	Rh	103	1,244,330.01	0.45	85.5	Analog	0.30	3
3	Rh	103	2,551,507.77	2.23	80.8	Analog	0.30	3
3	In	115	2,672,063.04	2.93	87.9	Analog	0.30	3
3	Tb	159	4,213,882.12	2.05	91.6	Analog	0.30	3
3	Bi	209	2,411,144.93	2.09	84.5	Analog	0.30	3

Quantitation Report

File Name	A0511031.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 12:56
Sample Name	N019628-006B-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.374	ppb	2.26	16,913.40	1.350E-02	Pulse	0.30	3
B	11	6	3	876.225	ppb	3.03	4,633,211.23	3.699E+00	Analog	0.30	3
Na	23	45	2	643193.834	ppb	0.90	741,076,317.85	9.395E+03	Analog	0.30	3
Mg	26	45	2	3710.218	ppb	1.13	368,722.35	4.674E+00	Pulse	0.30	3
Al	27	45	2	39.800	ppb	4.82	8,278.97	1.050E-01	Pulse	0.30	3
K	39	45	2	8348.066	ppb	0.49	2,587,207.67	3.280E+01	Analog	0.30	3
Ca	44	45	3	54120.942	ppb	1.89	49,059,392.60	2.462E+01	Analog	0.30	3
V	51	45	2	2.040	ppb	2.10	9,359.68	1.187E-01	Pulse	0.30	3
Cr	52	45	2	1.881	ppb	3.39	11,983.96	1.519E-01	Pulse	0.30	3
Mn	55	45	2	120.856	ppb	0.75	361,683.02	4.585E+00	Pulse	0.30	3
Fe	56	45	2	858.618	ppb	0.63	4,237,127.48	5.372E+01	Analog	0.30	3
Co	59	45	2	1.673	ppb	1.93	16,964.77	2.151E-01	Pulse	0.30	3
Ni	60	72	2	1.567	ppb	6.88	4,395.42	9.186E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-3,385.86	-7.071E-02	Pulse	0.30	3
Zn	66	72	2	16.299	ppb	2.12	19,209.56	4.012E-01	Pulse	0.30	3
As	75	72	2	2.057	ppb	1.75	1,254.52	2.619E-02	Pulse	0.75	3
Se	78	72	1	1.933	ppb	11.06	347.79	7.565E-03	Pulse	0.30	3
Mo	95	103	2	2.913	ppb	2.79	8,478.13	6.835E-03	Pulse	0.30	3
Ag	107	103	3	0.258	ppb	3.73	6,871.43	2.757E-03	Pulse	0.30	3
Cd	111	115	3	1.833	ppb	1.10	9,768.58	3.725E-03	Pulse	0.30	3
Sb	121	115	3	2.128	ppb	1.66	39,116.23	1.492E-02	Pulse	0.30	3
Ba	137	159	3	82.227	ppb	0.84	505,197.16	1.215E-01	Pulse	0.30	3
Tl	205	209	3	1.707	ppb	1.25	68,862.22	2.931E-02	Pulse	0.30	3
Pb	208	209	3	1.998	ppb	1.11	115,288.26	4.907E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-226.59	-9.647E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,253,047.11	2.08	60.9	Analog	0.30	3
2	Sc	45	78,878.04	1.51	95.8	Pulse	0.30	3
3	Sc	45	1,993,218.70	2.33	87.6	Analog	0.30	3
1	Ge	72	46,003.54	1.68	88.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	47,891.13	2.35	95.0	Pulse	0.30	3
2	Rh	103	1,240,618.29	2.07	85.3	Analog	0.30	3
3	Rh	103	2,493,162.83	1.05	79.0	Analog	0.30	3
3	In	115	2,622,233.89	0.36	86.3	Analog	0.30	3
3	Tb	159	4,158,290.67	1.17	90.4	Analog	0.30	3
3	Bi	209	2,349,526.98	1.07	82.3	Analog	0.30	3

Quantitation Report

File Name	A0511032.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:01
Sample Name	N019628-006B-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.358	ppb	0.49	16,190.41	1.341E-02	Pulse	0.30	3
B	11	6	3	865.781	ppb	0.11	4,413,744.37	3.655E+00	Analog	0.30	3
Na	23	45	2	645732.715	ppb	1.76	721,862,673.69	9.432E+03	Analog	0.30	3
Mg	26	45	2	3738.670	ppb	1.37	360,504.82	4.710E+00	Pulse	0.30	3
Al	27	45	2	41.324	ppb	3.87	8,331.98	1.089E-01	Pulse	0.30	3
K	39	45	2	8374.992	ppb	1.74	2,518,448.26	3.290E+01	Analog	0.30	3
Ca	44	45	3	53935.859	ppb	0.42	46,696,677.08	2.454E+01	Analog	0.30	3
V	51	45	2	1.993	ppb	2.04	8,888.31	1.161E-01	Pulse	0.30	3
Cr	52	45	2	1.869	ppb	1.56	11,563.34	1.510E-01	Pulse	0.30	3
Mn	55	45	2	120.839	ppb	1.15	350,911.45	4.585E+00	Pulse	0.30	3
Fe	56	45	2	858.164	ppb	1.26	4,109,871.71	5.369E+01	Analog	0.30	3
Co	59	45	2	1.676	ppb	3.16	16,483.48	2.154E-01	Pulse	0.30	3
Ni	60	72	2	1.539	ppb	3.60	4,190.86	9.040E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-3,459.81	-7.465E-02	Pulse	0.30	3
Zn	66	72	2	15.801	ppb	3.15	18,071.07	3.898E-01	Pulse	0.30	3
As	75	72	2	2.011	ppb	4.26	1,187.43	2.562E-02	Pulse	0.75	3
Se	78	72	1	1.808	ppb	2.81	331.13	7.079E-03	Pulse	0.30	3
Mo	95	103	2	2.865	ppb	1.45	8,102.34	6.724E-03	Pulse	0.30	3
Ag	107	103	3	0.266	ppb	2.44	6,701.09	2.830E-03	Pulse	0.30	3
Cd	111	115	3	1.843	ppb	2.73	9,363.03	3.745E-03	Pulse	0.30	3
Sb	121	115	3	2.104	ppb	0.75	36,875.25	1.475E-02	Pulse	0.30	3
Ba	137	159	3	82.392	ppb	0.88	482,445.43	1.217E-01	Pulse	0.30	3
Tl	205	209	3	1.700	ppb	1.33	66,034.47	2.918E-02	Pulse	0.30	3
Pb	208	209	3	1.990	ppb	0.43	110,643.60	4.890E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-178.42	-7.885E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,207,568.43	1.04	58.7	Analog	0.30	3
2	Sc	45	76,555.45	2.28	93.0	Pulse	0.30	3
3	Sc	45	1,903,160.75	0.70	83.7	Analog	0.30	3
1	Ge	72	46,764.50	1.47	89.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	46,354.68	0.72	92.0	Pulse	0.30	3
2	Rh	103	1,204,837.35	0.73	82.8	Analog	0.30	3
3	Rh	103	2,367,411.72	1.47	75.0	Analog	0.30	3
3	In	115	2,500,447.27	1.40	82.3	Analog	0.30	3
3	Tb	159	3,962,955.29	1.38	86.1	Analog	0.30	3
3	Bi	209	2,262,776.25	0.81	79.3	Analog	0.30	3

Quantitation Report

File Name	A0511033.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:07
Sample Name	N019628-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	222.61	41.11	6.900E-05	Pulse	0.30	3
B	11	6	3	3247.811	ppb	1.19	8,172,263.81	1.369E+01	Analog	0.30	3
Na	23	45	2	2712996.329	ppb	0.47	2,573,324,157.21	3.962E+04	Analog	0.30	3
Mg	26	45	2	40753.265	ppb	0.24	3,333,552.83	5.132E+01	Analog	0.30	3
Al	27	45	2	2.944	ppb	7.00	623.21	9.591E-03	Pulse	0.30	3
K	39	45	2	25653.737	ppb	0.84	6,511,176.43	1.003E+02	Analog	0.30	3
Ca	44	45	3	317160.169	ppb	1.01	271,238,280.40	1.442E+02	Analog	0.30	3
V	51	45	2	5.249	ppb	0.97	19,042.67	2.932E-01	Pulse	0.30	3
Cr	52	45	2	108.055	ppb	0.94	518,181.86	7.979E+00	Pulse	0.30	3
Mn	55	45	2	11.693	ppb	1.51	28,987.15	4.464E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-193,413.51	-2.978E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-544.06	-8.416E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-596.78	-1.684E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-52,795.72	-1.469E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-3,490.57	-9.722E-02	Pulse	0.30	3
As	75	72	2	4.437	ppb	2.82	2,021.27	5.624E-02	Pulse	0.75	3
Se	78	72	1	1.530	ppb	14.81	220.01	5.997E-03	Pulse	0.30	3
Mo	95	103	2	52.234	ppb	0.26	108,356.71	1.220E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,965.05	-1.432E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-246.97	-1.133E-04	Pulse	0.30	3
Sb	121	115	3	2.223	ppb	0.38	33,921.79	1.558E-02	Pulse	0.30	3
Ba	137	159	3	46.257	ppb	0.52	236,099.08	6.838E-02	Pulse	0.30	3
Tl	205	209	3	0.107	ppb	1.44	4,058.50	2.203E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-17,576.91	-9.542E-03	Pulse	0.30	3
U	238	209	3	0.436	ppb	1.14	21,002.27	1.140E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	597,102.59	1.06	29.0	Analog	0.30	3
2	Sc	45	64,953.02	3.13	78.9	Pulse	0.30	3
3	Sc	45	1,880,593.06	0.45	82.7	Analog	0.30	3
1	Ge	72	36,692.07	0.49	70.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	35,954.95	4.24	71.3	Pulse	0.30	3
2	Rh	103	887,875.93	2.59	61.0	Pulse	0.30	3
3	Rh	103	2,071,257.94	0.78	65.6	Analog	0.30	3
3	In	115	2,177,166.04	0.61	71.6	Analog	0.30	3
3	Tb	159	3,452,762.83	0.12	75.0	Analog	0.30	3
3	Bi	209	1,842,043.49	0.47	64.6	Analog	0.30	3

Quantitation Report

File Name	A0511034.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:13
Sample Name	N019628-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	160.58	30.00	5.667E-05	Pulse	0.30	3
B	11	6	3	3166.190	ppb	2.40	7,106,764.12	1.334E+01	Analog	0.30	3
Na	23	45	2	2735047.894	ppb	1.28	2,530,718,984.51	3.994E+04	Analog	0.30	3
Mg	26	45	2	43379.449	ppb	0.71	3,461,557.00	5.463E+01	Analog	0.30	3
Al	27	45	2	1.066	ppb	24.04	300.37	4.733E-03	Pulse	0.30	3
K	39	45	2	24871.855	ppb	0.40	6,159,487.76	9.721E+01	Analog	0.30	3
Ca	44	45	3	324507.662	ppb	0.54	252,085,140.69	1.476E+02	Analog	0.30	3
V	51	45	2	5.432	ppb	0.78	19,209.64	3.032E-01	Pulse	0.30	3
Cr	52	45	2	113.844	ppb	0.89	532,617.76	8.406E+00	Pulse	0.30	3
Mn	55	45	2	1.277	ppb	2.89	3,261.10	5.148E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-213,430.09	-3.369E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-2,800.69	-4.420E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-2,584.51	-7.251E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-50,322.64	-1.412E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-5,727.94	-1.607E-01	Pulse	0.30	3
As	75	72	2	4.133	ppb	2.01	1,867.53	5.240E-02	Pulse	0.75	3
Se	78	72	1	1.630	ppb	5.98	216.68	6.388E-03	Pulse	0.30	3
Mo	95	103	2	49.535	ppb	0.52	103,153.83	1.157E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-4,175.50	-2.189E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-410.18	-2.016E-04	Pulse	0.30	3
Sb	121	115	3	0.036	ppb	7.29	747.83	3.678E-04	Pulse	0.30	3
Ba	137	159	3	47.580	ppb	0.23	227,566.38	7.033E-02	Pulse	0.30	3
Tl	205	209	3	0.072	ppb	3.17	2,792.60	1.611E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-16,538.53	-9.538E-03	Pulse	0.30	3
U	238	209	3	0.486	ppb	0.98	22,042.81	1.272E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	532,856.89	4.28	25.9	Analog	0.30	3
2	Sc	45	63,365.87	2.12	77.0	Pulse	0.30	3
3	Sc	45	1,708,409.89	3.88	75.1	Analog	0.30	3
1	Ge	72	33,922.73	2.06	64.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	35,643.11	0.89	70.7	Pulse	0.30	3
2	Rh	103	891,286.06	1.38	61.3	Pulse	0.30	3
3	Rh	103	1,907,917.58	3.50	60.4	Analog	0.30	3
3	In	115	2,035,564.37	3.57	67.0	Analog	0.30	3
3	Tb	159	3,235,673.01	2.90	70.3	Analog	0.30	3
3	Bi	209	1,733,498.69	2.87	60.7	Analog	0.30	3

Quantitation Report

File Name	A0511035.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:19
Sample Name	N019628-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.031	ppb	17.29	64.45	2.269E-04	Pulse	0.30	3
B	11	6	3	7184.738	ppb	8.41	8,538,625.19	3.027E+01	Analog	0.30	3
Na	23	45	2	4051384.655	ppb	1.02	3,884,911,159.89	5.917E+04	Analog	0.30	3
Mg	26	45	2	5473.246	ppb	0.99	452,690.81	6.894E+00	Pulse	0.30	3
Al	27	45	2	11.485	ppb	5.53	2,078.40	3.169E-02	Pulse	0.30	3
K	39	45	2	42816.970	ppb	0.38	10,978,460.32	1.672E+02	Analog	0.30	3
Ca	44	45	3	332685.047	ppb	1.04	275,767,518.11	1.513E+02	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	437.80	6.652E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	624.28	9.614E-03	Pulse	0.30	3
Mn	55	45	2	277.262	ppb	0.27	690,619.75	1.052E+01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-241,732.71	-3.682E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-4,168.99	-6.348E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-3,835.10	-1.057E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-89,530.07	-2.467E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,775.49	-2.971E-01	Pulse	0.30	3
As	75	72	2	0.819	ppb	8.43	384.43	1.057E-02	Pulse	0.75	3
Se	78	72	1	0.044	ppb	123.85	6.67	2.128E-04	Pulse	0.30	3
Mo	95	103	2	35.574	ppb	1.38	74,226.74	8.312E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-7,582.07	-3.738E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-555.86	-2.554E-04	Pulse	0.30	3
Sb	121	115	3	0.024	ppb	10.10	621.15	2.853E-04	Pulse	0.30	3
Ba	137	159	3	64.755	ppb	0.32	328,310.97	9.570E-02	Pulse	0.30	3
Tl	205	209	3	0.016	ppb	10.94	1,190.10	6.554E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-26,203.17	-1.442E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-1,207.35	-6.641E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	282,817.04	4.59	13.8	Analog	0.30	3
2	Sc	45	65,678.00	4.25	79.8	Pulse	0.30	3
3	Sc	45	1,822,926.26	4.54	80.2	Analog	0.30	3
1	Ge	72	31,556.87	2.66	60.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	36,294.67	3.93	72.0	Pulse	0.30	3
2	Rh	103	892,950.48	3.39	61.4	Pulse	0.30	3
3	Rh	103	2,028,762.14	3.99	64.3	Analog	0.30	3
3	In	115	2,172,930.46	4.85	71.5	Analog	0.30	3
3	Tb	159	3,431,030.85	4.56	74.6	Analog	0.30	3
3	Bi	209	1,817,551.36	4.50	63.7	Analog	0.30	3

Quantitation Report

File Name	A0511036.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:24
Sample Name	N019628-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	140.52	28.89	7.435E-05	Pulse	0.30	3
B	11	6	3	4352.340	ppb	1.04	7,148,980.82	1.834E+01	Analog	0.30	3
Na	23	45	2	2907094.971	ppb	0.66	2,748,497,399.04	4.246E+04	Analog	0.30	3
Mg	26	45	2	21495.910	ppb	0.81	1,752,278.46	2.707E+01	Analog	0.30	3
Al	27	45	2	3.810	ppb	9.54	767.53	1.183E-02	Pulse	0.30	3
K	39	45	2	38340.858	ppb	0.59	9,691,481.25	1.497E+02	Analog	0.30	3
Ca	44	45	3	441332.109	ppb	0.43	353,370,230.29	2.007E+02	Analog	0.30	3
V	51	45	2	0.973	ppb	2.77	3,925.07	6.060E-02	Pulse	0.30	3
Cr	52	45	2	1892.990	ppb	0.70	9,035,584.20	1.396E+02	Analog	0.30	3
Mn	55	45	2	36.906	ppb	1.10	90,798.93	1.402E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-213,344.15	-3.296E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-2,463.61	-3.806E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	146.42	3.925E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-42,677.64	-1.133E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-4,645.51	-1.233E-01	Pulse	0.30	3
As	75	72	2	1.510	ppb	5.84	727.22	1.928E-02	Pulse	0.75	3
Se	78	72	1	4.296	ppb	6.66	570.03	1.676E-02	Pulse	0.30	3
Mo	95	103	2	23.550	ppb	0.25	51,599.56	5.504E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-3,152.78	-1.548E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-739.81	-3.367E-04	Pulse	0.30	3
Sb	121	115	3	0.033	ppb	5.88	758.94	3.457E-04	Pulse	0.30	3
Ba	137	159	3	44.025	ppb	0.63	230,997.33	6.508E-02	Pulse	0.30	3
Tl	205	209	3	0.568	ppb	0.25	19,017.22	1.001E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-25,797.65	-1.359E-02	Pulse	0.30	3
U	238	209	3	5.379	ppb	1.24	266,281.31	1.402E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	389,838.13	1.10	19.0	Analog	0.30	3
2	Sc	45	64,734.25	4.56	78.6	Pulse	0.30	3
3	Sc	45	1,760,715.69	1.15	77.4	Analog	0.30	3
1	Ge	72	34,007.46	0.65	65.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	37,676.78	5.61	74.8	Pulse	0.30	3
2	Rh	103	937,481.74	4.43	64.4	Pulse	0.30	3
3	Rh	103	2,037,185.44	1.31	64.5	Analog	0.30	3
3	In	115	2,195,692.29	1.43	72.2	Analog	0.30	3
3	Tb	159	3,549,339.50	1.27	77.1	Analog	0.30	3
3	Bi	209	1,898,910.89	0.48	66.5	Analog	0.30	3

Quantitation Report

File Name	A0511037.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:30
Sample Name	N019533-009B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	26.67	1.867E-05	Pulse	0.30	3
B	11	6	3	192.856	ppb	1.64	1,173,181.89	8.209E-01	Analog	0.30	3
Na	23	45	2	103635.841	ppb	0.54	118,955,488.23	1.515E+03	Analog	0.30	3
Mg	26	45	2	29475.930	ppb	0.72	2,915,172.21	3.712E+01	Analog	0.30	3
Al	27	45	2	0.118	ppb	267.01	178.18	2.279E-03	Pulse	0.30	3
K	39	45	2	5020.058	ppb	0.60	1,557,044.98	1.983E+01	Analog	0.30	3
Ca	44	45	3	94583.971	ppb	0.58	91,101,574.20	4.302E+01	Analog	0.30	3
V	51	45	2	0.510	ppb	0.72	2,780.36	3.540E-02	Pulse	0.30	3
Cr	52	45	2	0.503	ppb	8.51	3,952.64	5.030E-02	Pulse	0.30	3
Mn	55	45	2	9.777	ppb	0.60	29,351.54	3.738E-01	Pulse	0.30	3
Fe	56	45	2	0.160	ppb	34.65	2,892.24	3.679E-02	Pulse	0.30	3
Co	59	45	2	0.006	ppb	72.70	91.09	1.166E-03	Pulse	0.30	3
Ni	60	72	2	0.267	ppb	11.62	1,195.99	2.406E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,582.68	5.200E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	529.39	1.064E-02	Pulse	0.30	3
As	75	72	2	1.132	ppb	4.08	721.95	1.452E-02	Pulse	0.75	3
Se	78	72	1	0.452	ppb	5.86	85.56	1.801E-03	Pulse	0.30	3
Mo	95	103	2	4.995	ppb	1.26	15,723.79	1.170E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,494.29	-5.391E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-22,731.05	-7.680E-03	Pulse	0.30	3
Sb	121	115	3	0.057	ppb	9.12	1,523.47	5.147E-04	Pulse	0.30	3
Ba	137	159	3	61.929	ppb	0.58	424,997.07	9.152E-02	Pulse	0.30	3
Tl	205	209	3	0.060	ppb	5.28	3,811.75	1.398E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-41,871.20	-1.536E-02	Pulse	0.30	3
U	238	209	3	4.440	ppb	0.38	315,609.26	1.158E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,429,362.15	1.21	69.5	Analog	0.30	3
2	Sc	45	78,532.81	1.93	95.4	Pulse	0.30	3
3	Sc	45	2,117,647.64	0.99	93.1	Analog	0.30	3
1	Ge	72	47,458.82	2.43	90.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	49,717.66	1.47	98.7	Pulse	0.30	3
2	Rh	103	1,343,995.26	1.00	92.4	Analog	0.30	3
3	Rh	103	2,771,518.12	0.59	87.8	Analog	0.30	3
3	In	115	2,960,108.40	0.92	97.4	Analog	0.30	3
3	Tb	159	4,643,666.63	1.06	100.9	Analog	0.30	3
3	Bi	209	2,726,464.58	0.50	95.5	Analog	0.30	3

Quantitation Report

File Name	A0511038.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:35
Sample Name	CCV2,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.543	ppb	0.39	176,582.36	1.108E-01	Pulse	0.30	3
B	11	6	3	237.186	ppb	0.98	1,605,970.76	1.008E+00	Analog	0.30	3
Na	23	45	2	1266.141	ppb	4.36	1,718,508.83	1.981E+01	Analog	0.30	3
Mg	26	45	2	200.724	ppb	1.21	22,082.94	2.545E-01	Pulse	0.30	3
Al	27	45	2	20.954	ppb	4.05	4,877.61	5.619E-02	Pulse	0.30	3
K	39	45	2	233.064	ppb	1.91	101,354.64	1.168E+00	Pulse	0.30	3
Ca	44	45	3	252.326	ppb	0.09	275,528.42	1.241E-01	Pulse	0.30	3
V	51	45	2	20.341	ppb	0.99	96,701.60	1.114E+00	Pulse	0.30	3
Cr	52	45	2	19.678	ppb	0.85	127,043.35	1.464E+00	Pulse	0.30	3
Mn	55	45	2	19.911	ppb	1.08	65,777.07	7.580E-01	Pulse	0.30	3
Fe	56	45	2	21.037	ppb	0.65	116,484.41	1.342E+00	Pulse	0.30	3
Co	59	45	2	19.661	ppb	0.51	218,940.42	2.523E+00	Pulse	0.30	3
Ni	60	72	2	18.751	ppb	0.94	55,753.45	9.882E-01	Pulse	0.30	3
Cu	63	72	2	18.507	ppb	1.32	160,720.91	2.849E+00	Pulse	0.30	3
Zn	66	72	2	18.733	ppb	0.49	25,774.39	4.568E-01	Pulse	0.30	3
As	75	72	2	19.168	ppb	0.72	13,663.59	2.422E-01	Pulse	0.75	3
Se	78	72	1	20.069	ppb	2.67	4,197.39	7.815E-02	Pulse	0.30	3
Mo	95	103	2	20.005	ppb	1.59	74,198.56	4.676E-02	Pulse	0.30	3
Ag	107	103	3	19.199	ppb	0.57	532,110.79	1.620E-01	Pulse	0.30	3
Cd	111	115	3	19.610	ppb	1.00	124,683.03	3.679E-02	Pulse	0.30	3
Sb	121	115	3	20.093	ppb	0.77	473,990.01	1.399E-01	Pulse	0.30	3
Ba	137	159	3	20.867	ppb	1.11	160,823.52	3.088E-02	Pulse	0.30	3
Tl	205	209	3	19.974	ppb	0.22	1,122,732.53	3.387E-01	Analog	0.30	3
Pb	208	209	3	20.247	ppb	0.67	1,559,483.36	4.705E-01	Pulse	0.30	3
U	238	209	3	20.058	ppb	0.92	1,732,598.09	5.228E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,593,961.38	0.72	77.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	86,786.99	1.56	105.4	Pulse	0.30	3
3	Sc	45	2,219,385.40	0.76	97.6	Analog	0.30	3
1	Ge	72	53,707.06	1.01	102.8	Pulse	0.30	3
2	Ge	72	56,422.83	1.84	112.0	Pulse	0.30	3
2	Rh	103	1,586,840.85	1.31	109.1	Analog	0.30	3
3	Rh	103	3,285,530.09	0.50	104.1	Analog	0.30	3
3	In	115	3,389,378.90	0.98	111.5	Analog	0.30	3
3	Tb	159	5,207,091.00	0.85	113.1	Analog	0.30	3
3	Bi	209	3,314,555.96	0.83	116.2	Analog	0.30	3

Quantitation Report

File Name	A0511039.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:41
Sample Name	CCB2,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	35.56	2.459E-05	Pulse	0.30	3
B	11	6	3	25.321	ppb	1.62	166,597.16	1.152E-01	Pulse	0.30	3
Na	23	45	2	601.974	ppb	6.35	835,911.21	1.011E+01	Pulse	0.30	3
Mg	26	45	2	1.036	ppb	30.67	246.68	2.981E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	148.87	1.798E-03	Pulse	0.30	3
K	39	45	2	22.911	ppb	17.71	28,846.82	3.489E-01	Pulse	0.30	3
Ca	44	45	3	8.559	ppb	7.14	27,742.93	1.330E-02	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	616.71	7.463E-03	Pulse	0.30	3
Cr	52	45	2	0.078	ppb	9.37	1,571.51	1.900E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	231.48	2.796E-03	Pulse	0.30	3
Fe	56	45	2	0.036	ppb	40.74	2,402.10	2.904E-02	Pulse	0.30	3
Co	59	45	2	0.003	ppb	61.68	59.14	7.133E-04	Pulse	0.30	3
Ni	60	72	2	0.105	ppb	42.95	849.19	1.561E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	4,094.31	7.525E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	848.51	1.559E-02	Pulse	0.30	3
As	75	72	2	0.004	ppb	108.83	15.11	2.779E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	4678.50	2.22	4.366E-05	Pulse	0.30	3
Mo	95	103	2	0.074	ppb	8.42	318.91	2.049E-04	Pulse	0.30	3
Ag	107	103	3	0.679	ppb	14.52	19,999.05	6.301E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	268.78	8.314E-05	Pulse	0.30	3
Sb	121	115	3	0.033	ppb	12.04	1,138.97	3.521E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	268.55	5.347E-05	Pulse	0.30	3
Tl	205	209	3	0.005	ppb	28.90	1,484.58	4.674E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	4,049.00	1.275E-03	Pulse	0.30	3
U	238	209	3	0.003	ppb	18.29	390.55	1.228E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,445,672.93	0.35	70.3	Analog	0.30	3
2	Sc	45	82,716.44	1.28	100.5	Pulse	0.30	3
3	Sc	45	2,086,967.50	1.57	91.8	Analog	0.30	3
1	Ge	72	50,610.30	1.88	96.9	Pulse	0.30	3
2	Ge	72	54,397.24	0.79	107.9	Pulse	0.30	3
2	Rh	103	1,556,726.21	0.88	107.0	Analog	0.30	3
3	Rh	103	3,171,433.64	0.93	100.5	Analog	0.30	3
3	In	115	3,236,732.03	1.32	106.5	Analog	0.30	3
3	Tb	159	5,024,916.69	0.70	109.2	Analog	0.30	3
3	Bi	209	3,175,702.35	1.53	111.3	Analog	0.30	3

Quantitation Report

File Name	A0511040.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:47
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.476	ppb	3.20	4,157.34	2.744E-03	Pulse	0.30	3
B	11	6	3	71.638	ppb	0.75	470,208.75	3.103E-01	Pulse	0.30	3
Na	23	45	2	371.823	ppb	6.59	598,651.00	6.749E+00	Pulse	0.30	3
Mg	26	45	2	1.401	ppb	9.15	305.57	3.441E-03	Pulse	0.30	3
Al	27	45	2	15.819	ppb	1.91	3,807.23	4.290E-02	Pulse	0.30	3
K	39	45	2	9.137	ppb	26.00	26,190.19	2.952E-01	Pulse	0.30	3
Ca	44	45	3	7.827	ppb	1.77	28,835.77	1.296E-02	Pulse	0.30	3
V	51	45	2	0.945	ppb	0.85	5,245.47	5.911E-02	Pulse	0.30	3
Cr	52	45	2	1.018	ppb	3.32	7,835.99	8.832E-02	Pulse	0.30	3
Mn	55	45	2	0.500	ppb	4.34	1,955.05	2.203E-02	Pulse	0.30	3
Fe	56	45	2	11.340	ppb	2.48	65,299.57	7.359E-01	Pulse	0.30	3
Co	59	45	2	0.446	ppb	0.90	5,113.68	5.762E-02	Pulse	0.30	3
Ni	60	72	2	1.026	ppb	4.85	3,826.60	6.366E-02	Pulse	0.30	3
Cu	63	72	2	0.798	ppb	3.74	11,837.10	1.970E-01	Pulse	0.30	3
Zn	66	72	2	8.598	ppb	2.15	13,532.79	2.252E-01	Pulse	0.30	3
As	75	72	2	0.076	ppb	31.35	72.00	1.195E-03	Pulse	0.75	3
Se	78	72	1	0.536	ppb	14.66	116.67	2.130E-03	Pulse	0.30	3
Mo	95	103	2	0.487	ppb	2.67	1,970.20	1.168E-03	Pulse	0.30	3
Ag	107	103	3	0.558	ppb	2.22	17,938.51	5.283E-03	Pulse	0.30	3
Cd	111	115	3	0.476	ppb	4.17	4,243.64	1.202E-03	Pulse	0.30	3
Sb	121	115	3	0.491	ppb	1.30	12,483.19	3.536E-03	Pulse	0.30	3
Ba	137	159	3	0.984	ppb	2.61	8,351.84	1.522E-03	Pulse	0.30	3
Tl	205	209	3	0.444	ppb	1.58	27,561.92	7.917E-03	Pulse	0.30	3
Pb	208	209	3	0.897	ppb	0.15	82,352.59	2.365E-02	Pulse	0.30	3
U	238	209	3	0.412	ppb	2.01	37,490.59	1.077E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,515,279.86	0.60	73.7	Analog	0.30	3
2	Sc	45	88,753.95	1.75	107.8	Pulse	0.30	3
3	Sc	45	2,224,363.56	0.69	97.8	Analog	0.30	3
1	Ge	72	54,778.32	0.08	104.9	Pulse	0.30	3
2	Ge	72	60,092.38	1.65	119.2	Pulse	0.30	3
2	Rh	103	1,686,551.99	1.13	115.9	Analog	0.30	3
3	Rh	103	3,395,922.97	0.64	107.6	Analog	0.30	3
3	In	115	3,530,105.61	0.63	116.1	Analog	0.30	3
3	Tb	159	5,487,915.75	0.91	119.3	Analog	0.30	3
3	Bi	209	3,481,747.17	1.37	122.0	Analog	0.30	3

Quantitation Report

File Name	A0511041.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:52
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	31.11	2.238E-05	Pulse	0.30	3
B	11	6	3	17.822	ppb	1.62	116,910.42	8.366E-02	Pulse	0.30	3
Na	23	45	2	98504.312	ppb	0.76	134,445,348.00	1.440E+03	Analog	0.30	3
Mg	26	45	2	98631.955	ppb	0.73	11,598,921.22	1.242E+02	Analog	0.30	3
Al	27	45	2	12.894	ppb	6.33	3,296.19	3.534E-02	Pulse	0.30	3
K	39	45	2	104674.773	ppb	0.64	38,126,723.32	4.083E+02	Analog	0.30	3
Ca	44	45	3	95105.422	ppb	0.67	105,055,807.32	4.326E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	370.02	3.950E-03	Pulse	0.30	3
Cr	52	45	2	0.200	ppb	5.86	2,617.08	2.802E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-14,360.90	-1.538E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,223.94	1.308E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-51.11	-5.531E-04	Pulse	0.30	3
Ni	60	72	2	0.037	ppb	76.89	715.94	1.206E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,802.67	-4.735E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	880.06	1.487E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-10.79	-1.801E-04	Pulse	0.75	3
Se	78	72	1	0.022	ppb	129.51	6.66	1.295E-04	Pulse	0.30	3
Mo	95	103	2	0.039	ppb	12.85	187.79	1.214E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-18,188.98	-5.554E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-23,345.08	-6.826E-03	Pulse	0.30	3
Sb	121	115	3	0.010	ppb	14.08	647.82	1.894E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-76,770.13	-1.421E-02	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	9.65	1,342.34	4.432E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-102,967.07	-3.400E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-5,932.03	-1.959E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,397,818.94	2.39	68.0	Analog	0.30	3
2	Sc	45	93,384.83	2.88	113.4	Pulse	0.30	3
3	Sc	45	2,428,594.17	0.20	106.8	Analog	0.30	3
1	Ge	72	51,464.24	0.06	98.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	59,249.46	2.31	117.6	Pulse	0.30	3
2	Rh	103	1,546,902.56	1.68	106.3	Analog	0.30	3
3	Rh	103	3,275,670.44	1.24	103.8	Analog	0.30	3
3	In	115	3,420,018.17	0.76	112.5	Analog	0.30	3
3	Tb	159	5,402,110.55	0.78	117.4	Analog	0.30	3
3	Bi	209	3,028,674.30	0.48	106.1	Analog	0.30	3

Quantitation Report

File Name	A0511042.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 13:56
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/11/2016 16:51
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	21.461	ppb	1.66	159,091.37	1.217E-01	Pulse	0.30	3
B	11	6	3	230.482	ppb	3.72	1,280,293.33	9.793E-01	Analog	0.30	3
Na	23	45	2	95001.317	ppb	1.16	115,378,873.84	1.389E+03	Analog	0.30	3
Mg	26	45	2	95816.920	ppb	1.27	10,025,354.92	1.207E+02	Analog	0.30	3
Al	27	45	2	32.836	ppb	3.37	7,221.36	8.694E-02	Pulse	0.30	3
K	39	45	2	102463.887	ppb	0.66	33,205,683.40	3.997E+02	Analog	0.30	3
Ca	44	45	3	94321.812	ppb	0.43	95,340,741.91	4.290E+01	Analog	0.30	3
V	51	45	2	21.844	ppb	0.99	99,363.61	1.196E+00	Pulse	0.30	3
Cr	52	45	2	20.424	ppb	1.07	126,205.29	1.519E+00	Pulse	0.30	3
Mn	55	45	2	17.454	ppb	0.04	55,238.60	6.648E-01	Pulse	0.30	3
Fe	56	45	2	21.390	ppb	2.25	113,355.38	1.364E+00	Pulse	0.30	3
Co	59	45	2	19.662	ppb	0.34	209,612.02	2.523E+00	Pulse	0.30	3
Ni	60	72	2	19.410	ppb	1.58	52,688.54	1.023E+00	Pulse	0.30	3
Cu	63	72	2	17.156	ppb	1.41	136,351.65	2.647E+00	Pulse	0.30	3
Zn	66	72	2	16.787	ppb	1.74	21,251.92	4.124E-01	Pulse	0.30	3
As	75	72	2	20.479	ppb	0.65	13,331.54	2.587E-01	Pulse	0.75	3
Se	78	72	1	19.722	ppb	3.43	3,940.65	7.680E-02	Pulse	0.30	3
Mo	95	103	2	22.686	ppb	1.23	71,961.92	5.302E-02	Pulse	0.30	3
Ag	107	103	3	18.134	ppb	0.21	440,368.85	1.530E-01	Pulse	0.30	3
Cd	111	115	3	15.458	ppb	0.56	84,091.94	2.907E-02	Pulse	0.30	3
Sb	121	115	3	21.346	ppb	0.62	429,799.46	1.486E-01	Pulse	0.30	3
Ba	137	159	3	14.210	ppb	1.03	91,779.77	2.105E-02	Pulse	0.30	3
Tl	205	209	3	22.125	ppb	0.92	913,613.79	3.752E-01	Pulse	0.30	3
Pb	208	209	3	20.177	ppb	0.96	1,141,813.88	4.689E-01	Pulse	0.30	3
U	238	209	3	22.319	ppb	0.83	1,416,337.37	5.817E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,308,150.66	3.54	63.6	Analog	0.30	3
2	Sc	45	83,089.68	1.49	100.9	Pulse	0.30	3
3	Sc	45	2,222,404.92	2.19	97.7	Analog	0.30	3
1	Ge	72	51,293.50	1.61	98.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	51,527.83	1.75	102.2	Pulse	0.30	3
2	Rh	103	1,357,243.69	1.15	93.3	Analog	0.30	3
3	Rh	103	2,878,167.94	1.90	91.2	Analog	0.30	3
3	In	115	2,893,030.06	1.95	95.2	Analog	0.30	3
3	Tb	159	4,359,098.34	1.35	94.7	Analog	0.30	3
3	Bi	209	2,435,109.74	1.35	85.3	Analog	0.30	3



Quantitation Report

File Name	A0511043.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:03
Sample Name	N019628-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	31.11	2.700E-05	Pulse	0.30	3
B	11	6	3	655.883	ppb	0.78	3,176,431.08	2.771E+00	Analog	0.30	3
Na	23	45	2	445836.999	ppb	1.21	485,873,406.09	6.512E+03	Analog	0.30	3
Mg	26	45	2	24627.831	ppb	1.89	2,313,993.40	3.102E+01	Analog	0.30	3
Al	27	45	2	2.280	ppb	18.41	587.09	7.874E-03	Pulse	0.30	3
K	39	45	2	11137.924	ppb	1.28	3,258,604.92	4.367E+01	Analog	0.30	3
Ca	44	45	3	205687.211	ppb	0.76	186,910,130.55	9.354E+01	Analog	0.30	3
V	51	45	2	6.705	ppb	1.42	27,785.24	3.724E-01	Pulse	0.30	3
Cr	52	45	2	9607.344	ppb	1.55	52,843,152.60	7.083E+02	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	-3,479.14	-4.663E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-24,829.81	-3.328E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-634.36	-8.502E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-381.16	-8.089E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-9,762.99	-2.071E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,108.46	-4.474E-02	Pulse	0.30	3
As	75	72	2	2.772	ppb	2.89	1,659.84	3.522E-02	Pulse	0.75	3
Se	78	72	1	11.357	ppb	4.32	2,010.20	4.425E-02	Pulse	0.30	3
Mo	95	103	2	38.495	ppb	1.15	111,483.30	8.995E-02	Pulse	0.30	3
Ag	107	103	3	0.539	ppb	9.65	12,796.18	5.120E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-322.19	-1.218E-04	Pulse	0.30	3
Sb	121	115	3	0.064	ppb	7.44	1,495.69	5.649E-04	Pulse	0.30	3
Ba	137	159	3	23.258	ppb	1.01	145,021.20	3.442E-02	Pulse	0.30	3
Tl	205	209	3	0.094	ppb	5.02	4,716.50	1.986E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-9,071.59	-3.819E-03	Pulse	0.30	3
U	238	209	3	4.174	ppb	0.86	258,495.00	1.088E-01	Pulse	0.30	3

OLR

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,146,383.87	1.71	55.8	Analog	0.30	3
2	Sc	45	74,614.41	1.07	90.6	Pulse	0.30	3
3	Sc	45	1,998,232.39	1.24	87.9	Analog	0.30	3
1	Ge	72	45,427.36	0.85	87.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	47,128.85	0.99	93.5	Pulse	0.30	3
2	Rh	103	1,239,623.08	2.03	85.2	Analog	0.30	3
3	Rh	103	2,500,068.63	0.58	79.2	Analog	0.30	3
3	In	115	2,646,445.38	1.04	87.1	Analog	0.30	3
3	Tb	159	4,213,826.12	0.67	91.6	Analog	0.30	3
3	Bi	209	2,375,297.92	0.72	83.2	Analog	0.30	3

Quantitation Report

File Name	A0511044.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:09
Sample Name	N019628-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	not reported
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.008	ppb	190.38	14.45	9.295E-05	Pulse	0.30	3
B	11	6	3	4862.518	ppb	5.33	3,207,076.57	2.049E+01	Analog	0.30	3
Na	23	45	2	3314386.983	ppb	0.13	3,085,648,949.58	4.840E+04	Analog	0.30	3
Mg	26	45	2	33350.502	ppb	0.76	2,677,407.39	4.200E+01	Analog	0.30	3
Al	27	45	2	3.550	ppb	9.01	710.82	1.116E-02	Pulse	0.30	3
K	39	45	2	41869.850	ppb	0.34	10,420,677.83	1.635E+02	Analog	0.30	3
Ca	44	45	3	317864.073	ppb	0.73	234,726,807.61	1.446E+02	Analog	0.30	3
V	51	45	2	3.545	ppb	2.14	12,778.74	2.005E-01	Pulse	0.30	3
Cr	52	45	2	2.503	ppb	5.35	12,607.73	1.978E-01	Pulse	0.30	3
Mn	55	45	2	15.966	ppb	1.20	38,777.83	6.084E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-265,408.30	-4.163E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,273.99	-5.135E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-865.27	-2.360E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-53,096.12	-1.449E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,685.17	-4.601E-02	Pulse	0.30	3
As	75	72	2	1.584	ppb	1.60	741.33	2.023E-02	Pulse	0.75	3
Se	78	72	1	0.140	ppb	44.08	18.89	5.879E-04	Pulse	0.30	3
Mo	95	103	2	10.961	ppb	0.86	22,968.21	2.563E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,605.08	-8.549E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-263.97	-1.311E-04	Pulse	0.30	3
Sb	121	115	3	0.150	ppb	5.21	2,344.72	1.163E-03	Pulse	0.30	3
Ba	137	159	3	73.636	ppb	0.18	351,282.98	1.088E-01	Pulse	0.30	3
Tl	205	209	3	0.014	ppb	26.65	1,083.42	6.262E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-21,391.04	-1.237E-02	Pulse	0.30	3
U	238	209	3	0.529	ppb	1.43	23,897.72	1.382E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	156,863.15	5.98	7.6	Analog	0.30	3
2	Sc	45	63,746.04	1.85	77.4	Pulse	0.30	3
3	Sc	45	1,623,878.20	2.12	71.4	Analog	0.30	3
1	Ge	72	32,141.25	2.13	61.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	36,652.08	2.26	72.7	Pulse	0.30	3
2	Rh	103	896,151.72	1.93	61.6	Pulse	0.30	3
3	Rh	103	1,873,026.00	1.60	59.3	Analog	0.30	3
3	In	115	2,015,515.45	1.54	66.3	Analog	0.30	3
3	Tb	159	3,228,393.94	1.20	70.2	Analog	0.30	3
3	Bi	209	1,728,725.25	1.24	60.6	Analog	0.30	3

Quantitation Report

File Name	A0511045.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:14
Sample Name	N019651-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	30.00	2.159E-05	Pulse	0.30	3
B	11	6	3	209.172	ppb	0.82	1,234,409.19	8.896E-01	Analog	0.30	3
Na	23	45	2	80225.983	ppb	1.14	90,929,330.87	1.173E+03	Analog	0.30	3
Mg	26	45	2	17625.436	ppb	1.18	1,720,929.94	2.220E+01	Analog	0.30	3
Al	27	45	2	0.421	ppb	26.03	237.28	3.063E-03	Pulse	0.30	3
K	39	45	2	6198.426	ppb	1.38	1,893,194.76	2.442E+01	Analog	0.30	3
Ca	44	45	3	83721.763	ppb	1.20	85,074,392.62	3.808E+01	Analog	0.30	3
V	51	45	2	6.182	ppb	0.33	26,667.87	3.440E-01	Pulse	0.30	3
Cr	52	45	2	58.822	ppb	0.91	337,212.45	4.350E+00	Pulse	0.30	3
Mn	55	45	2	5.426	ppb	0.65	16,187.84	2.088E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-2,318.56	-2.990E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-7.71	-9.639E-05	Pulse	0.30	3
Ni	60	72	2	0.119	ppb	20.32	820.29	1.635E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	3,469.34	6.913E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	506.93	1.011E-02	Pulse	0.30	3
As	75	72	2	1.381	ppb	7.34	886.44	1.766E-02	Pulse	0.75	3
Se	78	72	1	0.101	ppb	78.00	21.11	4.374E-04	Pulse	0.30	3
Mo	95	103	2	2.053	ppb	2.45	6,471.57	4.828E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,691.22	-6.096E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-17,197.34	-5.795E-03	Pulse	0.30	3
Sb	121	115	3	0.034	ppb	10.76	1,056.75	3.561E-04	Pulse	0.30	3
Ba	137	159	3	68.858	ppb	0.38	481,653.39	1.018E-01	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	16.45	1,583.49	5.666E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-34,293.73	-1.227E-02	Pulse	0.30	3
U	238	209	3	39.632	ppb	1.03	2,886,486.64	1.033E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,387,699.40	0.89	67.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	77,530.85	1.41	94.2	Pulse	0.30	3
3	Sc	45	2,234,133.47	0.54	98.2	Analog	0.30	3
1	Ge	72	48,097.34	1.02	92.1	Pulse	0.30	3
2	Ge	72	50,180.26	0.60	99.6	Pulse	0.30	3
2	Rh	103	1,340,410.99	0.81	92.1	Analog	0.30	3
3	Rh	103	2,774,317.49	0.60	87.9	Analog	0.30	3
3	In	115	2,967,715.41	0.32	97.6	Analog	0.30	3
3	Tb	159	4,733,415.97	0.26	102.9	Analog	0.30	3
3	Bi	209	2,794,689.09	0.28	97.9	Analog	0.30	3

Quantitation Report

File Name	A0511046.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:20
Sample Name	N019651-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	37.78	2.513E-05	Pulse	0.30	3
B	11	6	3	208.411	ppb	1.56	1,339,087.22	8.864E-01	Analog	0.30	3
Na	23	45	2	81530.376	ppb	0.63	97,890,601.87	1.192E+03	Analog	0.30	3
Mg	26	45	2	18208.991	ppb	0.92	1,883,342.75	2.293E+01	Analog	0.30	3
Al	27	45	2	0.122	ppb	126.51	187.75	2.288E-03	Pulse	0.30	3
K	39	45	2	6373.293	ppb	0.95	2,061,578.53	2.510E+01	Analog	0.30	3
Ca	44	45	3	85753.212	ppb	0.09	94,657,219.70	3.900E+01	Analog	0.30	3
V	51	45	2	6.323	ppb	1.59	28,877.13	3.517E-01	Pulse	0.30	3
Cr	52	45	2	60.547	ppb	0.78	367,656.60	4.477E+00	Pulse	0.30	3
Mn	55	45	2	5.106	ppb	1.06	16,150.23	1.966E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-5,534.04	-6.732E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	4.24	4.588E-05	Pulse	0.30	3
Ni	60	72	2	0.183	ppb	12.22	1,051.93	1.966E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	3,044.11	5.693E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	565.03	1.057E-02	Pulse	0.30	3
As	75	72	2	1.424	ppb	4.98	973.95	1.821E-02	Pulse	0.75	3
Se	78	72	1	0.153	ppb	12.82	31.11	6.369E-04	Pulse	0.30	3
Mo	95	103	2	2.143	ppb	3.75	7,178.54	5.036E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,899.67	-6.343E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,174.84	-5.973E-03	Pulse	0.30	3
Sb	121	115	3	0.032	ppb	7.91	1,101.20	3.431E-04	Pulse	0.30	3
Ba	137	159	3	71.010	ppb	0.34	533,547.38	1.049E-01	Pulse	0.30	3
Tl	205	209	3	0.015	ppb	5.34	1,927.98	6.421E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-40,164.11	-1.338E-02	Pulse	0.30	3
U	238	209	3	40.875	ppb	0.55	3,198,570.57	1.065E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,510,901.21	1.23	73.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	82,129.45	1.76	99.8	Pulse	0.30	3
3	Sc	45	2,426,827.69	0.76	106.7	Analog	0.30	3
1	Ge	72	48,833.13	0.82	93.5	Pulse	0.30	3
2	Ge	72	53,480.78	0.89	106.1	Pulse	0.30	3
2	Rh	103	1,425,730.31	1.30	98.0	Analog	0.30	3
3	Rh	103	2,995,128.11	0.66	94.9	Analog	0.30	3
3	In	115	3,210,280.10	0.95	105.6	Analog	0.30	3
3	Tb	159	5,084,630.31	0.21	110.5	Analog	0.30	3
3	Bi	209	3,002,703.88	0.43	105.2	Analog	0.30	3

Quantitation Report

File Name	A0511047.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:26
Sample Name	N019654-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	7.968E-06	Pulse	0.30	3
B	11	6	3	174.145	ppb	0.66	1,137,129.69	7.421E-01	Analog	0.30	3
Na	23	45	2	61423.756	ppb	0.70	73,797,625.57	8.984E+02	Analog	0.30	3
Mg	26	45	2	14106.532	ppb	0.54	1,459,537.56	1.777E+01	Analog	0.30	3
Al	27	45	2	2.106	ppb	12.42	610.04	7.423E-03	Pulse	0.30	3
K	39	45	2	3976.871	ppb	1.15	1,294,841.47	1.576E+01	Analog	0.30	3
Ca	44	45	3	76405.204	ppb	1.06	82,156,265.44	3.475E+01	Analog	0.30	3
V	51	45	2	5.333	ppb	1.98	24,462.10	2.978E-01	Pulse	0.30	3
Cr	52	45	2	10.683	ppb	1.03	65,790.00	8.009E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-1,466.16	-1.784E-02	Pulse	0.30	3
Fe	56	45	2	3.334	ppb	3.48	19,326.19	2.353E-01	Pulse	0.30	3
Co	59	45	2	0.010	ppb	19.45	138.77	1.690E-03	Pulse	0.30	3
Ni	60	72	2	0.464	ppb	7.68	1,820.74	3.432E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,295.48	4.328E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	576.53	1.086E-02	Pulse	0.30	3
As	75	72	2	1.540	ppb	3.84	1,043.67	1.966E-02	Pulse	0.75	3
Se	78	72	1	1.146	ppb	14.60	230.01	4.504E-03	Pulse	0.30	3
Mo	95	103	2	3.661	ppb	2.50	12,135.03	8.583E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,327.95	-4.418E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-14,567.15	-4.507E-03	Pulse	0.30	3
Sb	121	115	3	0.033	ppb	5.06	1,128.97	3.493E-04	Pulse	0.30	3
Ba	137	159	3	112.118	ppb	0.49	842,700.65	1.656E-01	Pulse	0.30	3
Tl	205	209	3	0.016	ppb	7.98	1,979.10	6.558E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-29,701.05	-9.842E-03	Pulse	0.30	3
U	238	209	3	19.099	ppb	0.92	1,502,139.43	4.978E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,532,387.51	0.32	74.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	82,150.33	0.77	99.8	Pulse	0.30	3
3	Sc	45	2,364,118.63	1.29	103.9	Analog	0.30	3
1	Ge	72	51,146.62	1.50	97.9	Pulse	0.30	3
2	Ge	72	53,060.42	1.23	105.3	Pulse	0.30	3
2	Rh	103	1,414,112.42	0.96	97.2	Analog	0.30	3
3	Rh	103	3,005,766.28	0.61	95.2	Analog	0.30	3
3	In	115	3,232,018.41	0.48	106.3	Analog	0.30	3
3	Tb	159	5,087,712.36	1.41	110.6	Analog	0.30	3
3	Bi	209	3,017,920.34	1.29	105.8	Analog	0.30	3

Quantitation Report

File Name	A0511048.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:31
Sample Name	N019654-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	45.56	2.976E-05	Pulse	0.30	3
B	11	6	3	116.305	ppb	1.35	762,430.59	4.984E-01	Pulse	0.30	3
Na	23	45	2	44699.339	ppb	0.82	55,088,633.07	6.541E+02	Analog	0.30	3
Mg	26	45	2	7328.073	ppb	0.84	777,371.05	9.230E+00	Pulse	0.30	3
Al	27	45	2	2.955	ppb	8.33	810.32	9.620E-03	Pulse	0.30	3
K	39	45	2	3094.905	ppb	0.97	1,037,851.88	1.232E+01	Pulse	0.30	3
Ca	44	45	3	27109.720	ppb	1.12	29,947,036.22	1.234E+01	Analog	0.30	3
V	51	45	2	0.907	ppb	3.94	4,803.12	5.704E-02	Pulse	0.30	3
Cr	52	45	2	0.156	ppb	16.24	2,083.79	2.474E-02	Pulse	0.30	3
Mn	55	45	2	111.423	ppb	0.41	356,042.16	4.228E+00	Pulse	0.30	3
Fe	56	45	2	55.686	ppb	1.68	295,516.30	3.509E+00	Pulse	0.30	3
Co	59	45	2	0.015	ppb	22.92	194.63	2.312E-03	Pulse	0.30	3
Ni	60	72	2	0.193	ppb	30.27	1,104.48	2.022E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,509.87	2.765E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	543.26	9.948E-03	Pulse	0.30	3
As	75	72	2	1.639	ppb	0.92	1,142.62	2.092E-02	Pulse	0.75	3
Se	78	72	1	0.134	ppb	51.31	28.89	5.643E-04	Pulse	0.30	3
Mo	95	103	2	3.607	ppb	0.36	12,309.62	8.456E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-781.76	-2.574E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-10,596.50	-3.317E-03	Pulse	0.30	3
Sb	121	115	3	0.019	ppb	12.36	794.50	2.488E-04	Pulse	0.30	3
Ba	137	159	3	108.323	ppb	0.67	802,486.29	1.600E-01	Pulse	0.30	3
Tl	205	209	3	0.027	ppb	3.33	2,530.33	8.470E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-20,719.25	-6.936E-03	Pulse	0.30	3
U	238	209	3	15.401	ppb	0.94	1,199,134.32	4.014E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,529,714.87	0.74	74.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	84,220.96	0.41	102.3	Pulse	0.30	3
3	Sc	45	2,427,516.66	1.13	106.7	Analog	0.30	3
1	Ge	72	51,295.97	1.16	98.2	Pulse	0.30	3
2	Ge	72	54,608.74	0.50	108.4	Pulse	0.30	3
2	Rh	103	1,455,780.12	0.23	100.0	Analog	0.30	3
3	Rh	103	3,037,470.37	0.16	96.2	Analog	0.30	3
3	In	115	3,194,453.74	0.74	105.1	Analog	0.30	3
3	Tb	159	5,014,546.21	1.01	109.0	Analog	0.30	3
3	Bi	209	2,987,344.40	0.45	104.7	Analog	0.30	3

Quantitation Report

File Name	A0511049.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:37
Sample Name	N019654-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	65.56	4.163E-05	Pulse	0.30	3
B	11	6	3	136.059	ppb	0.50	916,247.07	5.816E-01	Pulse	0.30	3
Na	23	45	2	42025.245	ppb	0.18	52,622,333.66	6.151E+02	Analog	0.30	3
Mg	26	45	2	7599.188	ppb	0.13	818,933.03	9.572E+00	Pulse	0.30	3
Al	27	45	2	77.044	ppb	4.27	17,228.53	2.013E-01	Pulse	0.30	3
K	39	45	2	3484.527	ppb	1.17	1,184,130.66	1.384E+01	Analog	0.30	3
Ca	44	45	3	25036.337	ppb	0.24	28,752,284.29	1.139E+01	Analog	0.30	3
V	51	45	2	0.364	ppb	3.25	2,351.40	2.748E-02	Pulse	0.30	3
Cr	52	45	2	0.591	ppb	6.33	4,856.18	5.679E-02	Pulse	0.30	3
Mn	55	45	2	148.142	ppb	1.12	480,746.71	5.620E+00	Pulse	0.30	3
Fe	56	45	2	275.797	ppb	0.83	1,478,005.54	1.727E+01	Analog	0.30	3
Co	59	45	2	0.070	ppb	1.12	800.43	9.354E-03	Pulse	0.30	3
Ni	60	72	2	0.594	ppb	5.44	2,301.22	4.112E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,935.72	3.459E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,267.73	2.265E-02	Pulse	0.30	3
As	75	72	2	0.199	ppb	15.80	153.10	2.736E-03	Pulse	0.75	3
Se	78	72	1	0.011	ppb	235.54	4.44	8.377E-05	Pulse	0.30	3
Mo	95	103	2	3.229	ppb	3.00	11,346.64	7.573E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-861.40	-2.737E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-10,356.69	-3.128E-03	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	4834.46	396.69	1.198E-04	Pulse	0.30	3
Ba	137	159	3	103.885	ppb	0.40	785,787.17	1.535E-01	Pulse	0.30	3
Tl	205	209	3	0.030	ppb	3.14	2,717.02	8.937E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-17,715.49	-5.827E-03	Pulse	0.30	3
U	238	209	3	0.173	ppb	1.40	13,801.66	4.540E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,575,295.70	0.53	76.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	85,558.68	1.90	103.9	Pulse	0.30	3
3	Sc	45	2,523,364.72	0.36	110.9	Analog	0.30	3
1	Ge	72	52,839.74	1.34	101.1	Pulse	0.30	3
2	Ge	72	55,967.85	1.20	111.1	Pulse	0.30	3
2	Rh	103	1,498,278.88	1.26	103.0	Analog	0.30	3
3	Rh	103	3,146,951.06	0.84	99.7	Analog	0.30	3
3	In	115	3,311,417.02	0.26	109.0	Analog	0.30	3
3	Tb	159	5,119,799.30	0.78	111.3	Analog	0.30	3
3	Bi	209	3,040,116.41	0.07	106.5	Analog	0.30	3

Quantitation Report

File Name A0511050.D
File Path C:\ICPMH\1\DATA\160511A.B
Method File DEFAULT.M
Method Path C:\ICPMH\1\METHODS\
Acq Time 05/11/2016 14:42
Sample Name N019654-006B,SAMP,1
Sample Type Sample
Comment
Prep Dilution 1.000
Auto Dilution N/A
Total Dilution 1.000
Operator Name
Acq Mode Spectrum
Cal Title
Cal Type External Calibration
Last Calib 05/12/2016 20:49
Bkg File
Bkg Mode Count Subtraction except for ISTD
Interference File Acq. Defined
FQ Blank File
VIS Fit Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.056	ppb	5.14	520.03	3.669E-04	Pulse	0.30	3
B	11	6	3	368.110	ppb	0.18	2,209,595.05	1.559E+00	Analog	0.30	3
Na	23	45	2	98236.146	ppb	1.02	108,953,256.16	1.436E+03	Analog	0.30	3
Mg	26	45	2	17890.151	ppb	0.75	1,709,637.65	2.253E+01	Analog	0.30	3
Al	27	45	2	1325.345	ppb	0.36	260,368.89	3.431E+00	Pulse	0.30	3
K	39	45	2	6606.008	ppb	0.32	1,973,590.75	2.601E+01	Analog	0.30	3
Ca	44	45	3	97785.685	ppb	1.39	96,364,681.90	4.448E+01	Analog	0.30	3
V	51	45	2	7.952	ppb	0.06	33,409.16	4.403E-01	Pulse	0.30	3
Cr	52	45	2	355.844	ppb	0.31	1,991,617.98	2.625E+01	Analog	0.30	3
Mn	55	45	2	34.097	ppb	0.15	98,327.43	1.296E+00	Pulse	0.30	3
Fe	56	45	2	1299.659	ppb	1.22	6,168,091.97	8.130E+01	Analog	0.30	3
Co	59	45	2	0.605	ppb	3.22	5,926.03	7.807E-02	Pulse	0.30	3
Ni	60	72	2	5.138	ppb	0.77	13,473.15	2.781E-01	Pulse	0.30	3
Cu	63	72	2	1.083	ppb	3.50	11,610.71	2.397E-01	Pulse	0.30	3
Zn	66	72	2	6.718	ppb	1.38	8,832.93	1.823E-01	Pulse	0.30	3
As	75	72	2	4.011	ppb	2.24	2,463.54	5.086E-02	Pulse	0.75	3
Se	78	72	1	0.864	ppb	12.68	164.45	3.407E-03	Pulse	0.30	3
Mo	95	103	2	3.986	ppb	2.31	11,956.27	9.341E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,812.84	-6.656E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-21,489.62	-7.472E-03	Pulse	0.30	3
Sb	121	115	3	0.135	ppb	2.97	3,037.09	1.056E-03	Pulse	0.30	3
Ba	137	159	3	39.015	ppb	0.42	263,537.88	5.769E-02	Pulse	0.30	3
Tl	205	209	3	0.041	ppb	3.68	2,912.64	1.082E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-15,998.95	-5.942E-03	Pulse	0.30	3
U	238	209	3	32.560	ppb	0.35	2,284,729.61	8.486E-01	Analog	0.30	3

OLR

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,417,323.40	0.44	68.9	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	75,882.44	1.89	92.2	Pulse	0.30	3
3	Sc	45	2,166,803.15	0.80	95.3	Analog	0.30	3
1	Ge	72	48,283.39	0.57	92.4	Pulse	0.30	3
2	Ge	72	48,445.10	1.46	96.1	Pulse	0.30	3
2	Rh	103	1,279,692.12	1.75	87.9	Analog	0.30	3
3	Rh	103	2,723,516.77	0.32	86.3	Analog	0.30	3
3	In	115	2,875,837.57	0.58	94.6	Analog	0.30	3
3	Tb	159	4,568,607.54	1.05	99.3	Analog	0.30	3
3	Bi	209	2,692,420.38	1.40	94.4	Analog	0.30	3

Quantitation Report

File Name	A0511051.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:48
Sample Name	N019654-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	21.11	1.324E-05	Pulse	0.30	3
B	11	6	3	124.953	ppb	0.54	853,319.86	5.349E-01	Pulse	0.30	3
Na	23	45	2	50847.588	ppb	0.57	61,272,847.98	7.439E+02	Analog	0.30	3
Mg	26	45	2	5703.536	ppb	0.06	591,754.10	7.184E+00	Pulse	0.30	3
Al	27	45	2	5.021	ppb	8.82	1,232.20	1.496E-02	Pulse	0.30	3
K	39	45	2	4859.067	ppb	1.21	1,581,476.73	1.920E+01	Analog	0.30	3
Ca	44	45	3	32910.140	ppb	0.27	36,454,806.40	1.497E+01	Analog	0.30	3
V	51	45	2	18.173	ppb	1.38	82,063.14	9.963E-01	Pulse	0.30	3
Cr	52	45	2	2.105	ppb	1.52	13,870.67	1.684E-01	Pulse	0.30	3
Mn	55	45	2	0.852	ppb	5.82	2,912.22	3.536E-02	Pulse	0.30	3
Fe	56	45	2	7.919	ppb	2.70	42,987.21	5.220E-01	Pulse	0.30	3
Co	59	45	2	0.020	ppb	25.66	240.08	2.916E-03	Pulse	0.30	3
Ni	60	72	2	0.934	ppb	3.01	3,167.44	5.888E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,057.76	3.828E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,378.01	2.564E-02	Pulse	0.30	3
As	75	72	2	8.576	ppb	1.08	5,833.13	1.085E-01	Pulse	0.75	3
Se	78	72	1	0.095	ppb	86.51	21.11	4.123E-04	Pulse	0.30	3
Mo	95	103	2	5.326	ppb	1.44	17,702.59	1.247E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,218.27	-4.003E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-12,305.34	-3.838E-03	Pulse	0.30	3
Sb	121	115	3	0.104	ppb	2.31	2,711.45	8.459E-04	Pulse	0.30	3
Ba	137	159	3	22.083	ppb	0.46	163,549.32	3.268E-02	Pulse	0.30	3
Tl	205	209	3	0.026	ppb	2.31	2,458.08	8.233E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-25,410.99	-8.511E-03	Pulse	0.30	3
U	238	209	3	20.081	ppb	1.00	1,562,446.49	5.233E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,595,392.75	0.45	77.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	82,365.90	0.56	100.0	Pulse	0.30	3
3	Sc	45	2,434,403.42	0.31	107.0	Analog	0.30	3
1	Ge	72	51,125.44	0.57	97.9	Pulse	0.30	3
2	Ge	72	53,775.01	2.08	106.7	Pulse	0.30	3
2	Rh	103	1,419,490.69	1.52	97.6	Analog	0.30	3
3	Rh	103	3,043,228.53	0.45	96.4	Analog	0.30	3
3	In	115	3,205,785.36	0.76	105.5	Analog	0.30	3
3	Tb	159	5,004,439.40	0.40	108.7	Analog	0.30	3
3	Bi	209	2,985,677.14	1.03	104.6	Analog	0.30	3

Quantitation Report

File Name	A0511052.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:54
Sample Name	N019654-008B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	20.00	1.337E-05	Pulse	0.30	3
B	11	6	3	569.446	ppb	1.35	3,601,392.74	2.407E+00	Analog	0.30	3
Na	23	45	2	139330.881	ppb	1.20	162,065,743.14	2.036E+03	Analog	0.30	3
Mg	26	45	2	29161.582	ppb	0.47	2,923,330.37	3.673E+01	Analog	0.30	3
Al	27	45	2	0.887	ppb	18.89	339.60	4.268E-03	Pulse	0.30	3
K	39	45	2	8050.355	ppb	1.34	2,518,333.44	3.164E+01	Analog	0.30	3
Ca	44	45	3	163484.070	ppb	0.47	170,859,141.90	7.435E+01	Analog	0.30	3
V	51	45	2	4.286	ppb	2.13	19,170.60	2.409E-01	Pulse	0.30	3
Cr	52	45	2	113.876	ppb	1.10	669,299.97	8.408E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-1,520.32	-1.910E-02	Pulse	0.30	3
Fe	56	45	2	0.611	ppb	2.17	5,175.30	6.501E-02	Pulse	0.30	3
Co	59	45	2	0.062	ppb	4.37	661.37	8.308E-03	Pulse	0.30	3
Ni	60	72	2	1.920	ppb	3.52	5,604.85	1.103E-01	Pulse	0.30	3
Cu	63	72	2	0.650	ppb	9.57	8,879.83	1.748E-01	Pulse	0.30	3
Zn	66	72	2	0.452	ppb	10.62	1,988.24	3.913E-02	Pulse	0.30	3
As	75	72	2	3.184	ppb	1.39	2,054.06	4.042E-02	Pulse	0.75	3
Se	78	72	1	0.546	ppb	15.34	111.11	2.166E-03	Pulse	0.30	3
Mo	95	103	2	2.526	ppb	2.58	7,774.41	5.930E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,722.35	-9.551E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-479.38	-1.573E-04	Pulse	0.30	3
Sb	121	115	3	0.092	ppb	2.61	2,305.81	7.567E-04	Pulse	0.30	3
Ba	137	159	3	69.764	ppb	0.96	490,301.38	1.031E-01	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	35.61	1,620.15	5.905E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-8,633.19	-3.146E-03	Pulse	0.30	3
U	238	209	3	46.985	ppb	0.43	3,360,450.73	1.224E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,496,300.13	0.67	72.8	Analog	0.30	3
2	Sc	45	79,599.32	0.87	96.7	Pulse	0.30	3
3	Sc	45	2,298,000.29	0.37	101.0	Analog	0.30	3
1	Ge	72	51,369.47	1.50	98.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	50,822.27	2.31	100.8	Pulse	0.30	3
2	Rh	103	1,310,842.08	0.88	90.1	Analog	0.30	3
3	Rh	103	2,850,409.68	0.39	90.3	Analog	0.30	3
3	In	115	3,047,289.68	0.37	100.3	Analog	0.30	3
3	Tb	159	4,755,877.67	0.04	103.3	Analog	0.30	3
3	Bi	209	2,744,394.16	0.42	96.2	Analog	0.30	3

Quantitation Report

File Name	A0511053.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 14:59
Sample Name	CCV3,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.218	ppb	0.92	191,633.01	1.089E-01	Pulse	0.30	3
B	11	6	3	215.510	ppb	1.49	1,611,662.15	9.163E-01	Analog	0.30	3
Na	23	45	2	512.209	ppb	5.20	792,729.00	8.799E+00	Pulse	0.30	3
Mg	26	45	2	199.512	ppb	0.99	22,798.27	2.529E-01	Pulse	0.30	3
Al	27	45	2	21.323	ppb	1.04	5,150.93	5.715E-02	Pulse	0.30	3
K	39	45	2	213.327	ppb	1.80	98,342.01	1.091E+00	Pulse	0.30	3
Ca	44	45	3	240.793	ppb	0.58	282,636.84	1.189E-01	Pulse	0.30	3
V	51	45	2	20.435	ppb	0.88	100,890.99	1.119E+00	Pulse	0.30	3
Cr	52	45	2	19.445	ppb	1.23	130,400.79	1.447E+00	Pulse	0.30	3
Mn	55	45	2	20.188	ppb	0.84	69,268.32	7.685E-01	Pulse	0.30	3
Fe	56	45	2	21.397	ppb	0.53	123,024.01	1.365E+00	Pulse	0.30	3
Co	59	45	2	19.714	ppb	2.09	227,964.90	2.530E+00	Pulse	0.30	3
Ni	60	72	2	18.486	ppb	1.02	58,347.53	9.744E-01	Pulse	0.30	3
Cu	63	72	2	17.939	ppb	0.55	165,496.14	2.764E+00	Pulse	0.30	3
Zn	66	72	2	18.401	ppb	1.83	26,897.64	4.492E-01	Pulse	0.30	3
As	75	72	2	19.331	ppb	0.55	14,625.31	2.442E-01	Pulse	0.75	3
Se	78	72	1	20.149	ppb	1.06	4,520.82	7.846E-02	Pulse	0.30	3
Mo	95	103	2	20.158	ppb	0.57	78,688.62	4.711E-02	Pulse	0.30	3
Ag	107	103	3	19.336	ppb	0.32	580,823.02	1.631E-01	Pulse	0.30	3
Cd	111	115	3	19.697	ppb	0.37	135,570.80	3.695E-02	Pulse	0.30	3
Sb	121	115	3	20.059	ppb	0.30	512,247.88	1.396E-01	Pulse	0.30	3
Ba	137	159	3	21.183	ppb	1.04	174,282.29	3.135E-02	Pulse	0.30	3
Tl	205	209	3	20.296	ppb	0.55	1,198,207.82	3.442E-01	Analog	0.30	3
Pb	208	209	3	20.309	ppb	0.95	1,642,798.77	4.719E-01	Pulse	0.30	3
U	238	209	3	20.065	ppb	0.13	1,820,494.85	5.229E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,759,003.91	0.44	85.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	90,148.18	2.23	109.5	Pulse	0.30	3
3	Sc	45	2,377,117.97	0.80	104.5	Analog	0.30	3
1	Ge	72	57,619.14	0.39	110.3	Pulse	0.30	3
2	Ge	72	59,878.30	1.40	118.8	Pulse	0.30	3
2	Rh	103	1,670,121.55	1.39	114.8	Analog	0.30	3
3	Rh	103	3,560,960.92	0.52	112.8	Analog	0.30	3
3	In	115	3,669,069.58	0.33	120.7	Analog	0.30	3
3	Tb	159	5,559,075.54	0.47	120.8	Analog	0.30	3
3	Bi	209	3,481,339.91	1.08	122.0	Analog	0.30	3

Quantitation Report

File Name	A0511054.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:05
Sample Name	CCB3,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	57.78	3.494E-05	Pulse	0.30	3
B	11	6	3	12.087	ppb	1.64	98,435.02	5.950E-02	Pulse	0.30	3
Na	23	45	2	165.216	ppb	7.61	318,264.62	3.732E+00	Pulse	0.30	3
Mg	26	45	2	0.383	ppb	76.30	184.45	2.159E-03	Pulse	0.30	3
Al	27	45	2	0.136	ppb	74.10	198.88	2.325E-03	Pulse	0.30	3
K	39	45	2	9.436	ppb	37.66	25,275.38	2.964E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	18,238.40	7.892E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	577.81	6.761E-03	Pulse	0.30	3
Cr	52	45	2	0.032	ppb	46.38	1,327.55	1.557E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	252.99	2.967E-03	Pulse	0.30	3
Fe	56	45	2	0.200	ppb	12.13	3,355.08	3.929E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	30.77	3.610E-04	Pulse	0.30	3
Ni	60	72	2	0.265	ppb	9.11	1,398.65	2.398E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,535.09	4.346E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	755.54	1.292E-02	Pulse	0.30	3
As	75	72	2	0.005	ppb	138.72	17.33	2.982E-04	Pulse	0.75	3
Se	78	72	1	0.010	ppb	247.15	4.44	8.044E-05	Pulse	0.30	3
Mo	95	103	2	0.064	ppb	12.57	295.57	1.810E-04	Pulse	0.30	3
Ag	107	103	3	0.725	ppb	15.02	23,291.12	6.686E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	414.98	1.165E-04	Pulse	0.30	3
Sb	121	115	3	0.036	ppb	4.19	1,324.55	3.716E-04	Pulse	0.30	3
Ba	137	159	3	0.007	ppb	99.38	429.37	7.841E-05	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	1,022.30	3.001E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	3,696.03	1.085E-03	Pulse	0.30	3
U	238	209	3	0.005	ppb	4.41	573.78	1.684E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,654,249.05	0.09	80.5	Analog	0.30	3
2	Sc	45	85,355.54	2.64	103.7	Pulse	0.30	3
3	Sc	45	2,310,941.04	0.27	101.6	Analog	0.30	3
1	Ge	72	55,664.62	1.22	106.6	Pulse	0.30	3
2	Ge	72	58,340.53	2.91	115.8	Pulse	0.30	3
2	Rh	103	1,631,971.21	1.84	112.2	Analog	0.30	3
3	Rh	103	3,481,719.25	0.76	110.3	Analog	0.30	3
3	In	115	3,563,869.66	0.24	117.3	Analog	0.30	3
3	Tb	159	5,476,323.95	0.43	119.0	Analog	0.30	3
3	Bi	209	3,406,426.06	0.32	119.4	Analog	0.30	3

Quantitation Report

File Name	A0511055.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:10
Sample Name	N019654-009B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	35.56	2.593E-05	Pulse	0.30	3
B	11	6	3	598.571	ppb	0.46	3,478,331.87	2.530E+00	Analog	0.30	3
Na	23	45	2	147974.111	ppb	0.68	168,283,634.16	2.162E+03	Analog	0.30	3
Mg	26	45	2	30756.104	ppb	0.32	3,014,647.94	3.873E+01	Analog	0.30	3
Al	27	45	2	0.118	ppb	95.92	177.15	2.278E-03	Pulse	0.30	3
K	39	45	2	8546.916	ppb	0.89	2,613,173.19	3.357E+01	Analog	0.30	3
Ca	44	45	3	172645.982	ppb	1.37	169,650,268.58	7.852E+01	Analog	0.30	3
V	51	45	2	4.536	ppb	1.24	19,800.37	2.544E-01	Pulse	0.30	3
Cr	52	45	2	121.085	ppb	1.30	695,753.29	8.940E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-1,751.31	-2.253E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-120.97	-1.541E-03	Pulse	0.30	3
Co	59	45	2	0.060	ppb	9.18	628.18	8.076E-03	Pulse	0.30	3
Ni	60	72	2	2.196	ppb	2.97	6,296.29	1.247E-01	Pulse	0.30	3
Cu	63	72	2	0.640	ppb	8.94	8,758.48	1.734E-01	Pulse	0.30	3
Zn	66	72	2	0.310	ppb	24.03	1,812.51	3.589E-02	Pulse	0.30	3
As	75	72	2	3.286	ppb	1.44	2,106.69	4.171E-02	Pulse	0.75	3
Se	78	72	1	0.483	ppb	22.64	91.12	1.924E-03	Pulse	0.30	3
Mo	95	103	2	2.601	ppb	2.36	8,072.33	6.107E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,462.02	-8.965E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-471.89	-1.605E-04	Pulse	0.30	3
Sb	121	115	3	0.118	ppb	3.41	2,762.58	9.395E-04	Pulse	0.30	3
Ba	137	159	3	72.345	ppb	0.60	500,544.88	1.069E-01	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	23.65	1,175.65	4.360E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-7,444.30	-2.761E-03	Pulse	0.30	3
U	238	209	3	49.404	ppb	0.70	3,471,992.24	1.288E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,375,011.34	0.87	66.9	Analog	0.30	3
2	Sc	45	77,827.42	1.12	94.5	Pulse	0.30	3
3	Sc	45	2,160,864.50	1.14	95.0	Analog	0.30	3
1	Ge	72	47,370.76	0.49	90.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	50,506.66	0.55	100.2	Pulse	0.30	3
2	Rh	103	1,322,365.19	2.56	90.9	Analog	0.30	3
3	Rh	103	2,746,269.30	1.62	87.0	Analog	0.30	3
3	In	115	2,940,988.97	1.27	96.8	Analog	0.30	3
3	Tb	159	4,682,077.99	0.62	101.7	Analog	0.30	3
3	Bi	209	2,696,657.84	0.48	94.5	Analog	0.30	3

Quantitation Report

File Name	A0511056.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:16
Sample Name	N019654-010B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	155.20	88.89	5.837E-05	Pulse	0.30	3
B	11	6	3	435.935	ppb	0.47	2,804,132.52	1.845E+00	Analog	0.30	3
Na	23	45	2	130013.535	ppb	0.49	148,599,297.78	1.900E+03	Analog	0.30	3
Mg	26	45	2	13955.768	ppb	2.73	1,374,619.41	1.758E+01	Analog	0.30	3
Al	27	45	2	76.911	ppb	1.57	15,718.07	2.010E-01	Pulse	0.30	3
K	39	45	2	3068.259	ppb	0.61	955,677.95	1.222E+01	Pulse	0.30	3
Ca	44	45	3	76933.789	ppb	0.37	78,607,894.39	3.499E+01	Analog	0.30	3
V	51	45	2	5.372	ppb	1.56	23,457.43	2.999E-01	Pulse	0.30	3
Cr	52	45	2	7.254	ppb	1.26	42,861.20	5.480E-01	Pulse	0.30	3
Mn	55	45	2	79.194	ppb	0.70	235,071.10	3.006E+00	Pulse	0.30	3
Fe	56	45	2	125.004	ppb	0.53	613,432.80	7.844E+00	Pulse	0.30	3
Co	59	45	2	0.157	ppb	3.42	1,602.73	2.049E-02	Pulse	0.30	3
Ni	60	72	2	0.816	ppb	2.30	2,693.60	5.273E-02	Pulse	0.30	3
Cu	63	72	2	0.680	ppb	5.10	9,156.95	1.793E-01	Pulse	0.30	3
Zn	66	72	2	1.322	ppb	5.74	3,015.16	5.901E-02	Pulse	0.30	3
As	75	72	2	1.399	ppb	6.01	913.25	1.789E-02	Pulse	0.75	3
Se	78	72	1	0.345	ppb	25.80	67.78	1.385E-03	Pulse	0.30	3
Mo	95	103	2	1.014	ppb	4.42	3,248.25	2.400E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-970.22	-3.333E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-140.73	-4.504E-05	Pulse	0.30	3
Sb	121	115	3	0.056	ppb	3.88	1,597.93	5.111E-04	Pulse	0.30	3
Ba	137	159	3	48.280	ppb	0.46	348,105.53	7.137E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	15.07	1,581.26	5.590E-04	Pulse	0.30	3
Pb	208	209	3	0.068	ppb	5.07	12,760.66	4.509E-03	Pulse	0.30	3
U	238	209	3	18.380	ppb	0.43	1,355,513.09	4.790E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,520,174.31	1.46	73.9	Analog	0.30	3
2	Sc	45	78,209.38	0.42	95.0	Pulse	0.30	3
3	Sc	45	2,246,355.38	0.82	98.8	Analog	0.30	3
1	Ge	72	48,957.55	0.63	93.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	51,086.33	1.63	101.4	Pulse	0.30	3
2	Rh	103	1,353,939.21	1.06	93.0	Analog	0.30	3
3	Rh	103	2,910,684.92	0.74	92.2	Analog	0.30	3
3	In	115	3,126,227.55	0.83	102.9	Analog	0.30	3
3	Tb	159	4,877,535.93	1.22	106.0	Analog	0.30	3
3	Bi	209	2,829,616.56	1.13	99.2	Analog	0.30	3

Quantitation Report

File Name	A0511057.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:22
Sample Name	N019655-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	32.22	2.003E-05	Pulse	0.30	3
B	11	6	3	339.957	ppb	1.78	2,316,957.56	1.440E+00	Analog	0.30	3
Na	23	45	2	74114.283	ppb	0.42	91,304,545.30	1.084E+03	Analog	0.30	3
Mg	26	45	2	3027.697	ppb	0.77	321,395.70	3.815E+00	Pulse	0.30	3
Al	27	45	2	3.284	ppb	10.10	882.45	1.047E-02	Pulse	0.30	3
K	39	45	2	7649.754	ppb	0.76	2,534,229.20	3.008E+01	Analog	0.30	3
Ca	44	45	3	14737.012	ppb	0.74	16,136,082.95	6.711E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	190.01	2.252E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	685.43	8.136E-03	Pulse	0.30	3
Mn	55	45	2	42.133	ppb	0.73	134,857.57	1.600E+00	Pulse	0.30	3
Fe	56	45	2	14.722	ppb	0.45	79,818.07	9.474E-01	Pulse	0.30	3
Co	59	45	2	0.002	ppb	123.29	52.34	6.202E-04	Pulse	0.30	3
Ni	60	72	2	0.345	ppb	4.49	1,553.23	2.814E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	605.58	1.094E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	272.90	4.921E-03	Pulse	0.30	3
As	75	72	2	5.301	ppb	2.46	3,706.19	6.714E-02	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	2.106E-05	Pulse	0.30	3
Mo	95	103	2	6.573	ppb	0.83	22,544.36	1.538E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,612.18	-5.168E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-18,099.11	-5.511E-03	Pulse	0.30	3
Sb	121	115	3	0.257	ppb	4.71	6,268.15	1.908E-03	Pulse	0.30	3
Ba	137	159	3	34.948	ppb	0.09	262,315.94	5.168E-02	Pulse	0.30	3
Tl	205	209	3	0.020	ppb	9.89	2,175.80	7.203E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-36,706.94	-1.215E-02	Pulse	0.30	3
U	238	209	3	0.440	ppb	0.81	34,741.37	1.150E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,608,527.69	0.10	78.2	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	84,255.82	1.20	102.3	Pulse	0.30	3
3	Sc	45	2,404,556.79	0.89	105.7	Analog	0.30	3
1	Ge	72	52,095.12	1.11	99.7	Pulse	0.30	3
2	Ge	72	55,228.82	3.30	109.6	Pulse	0.30	3
2	Rh	103	1,465,330.95	0.96	100.7	Analog	0.30	3
3	Rh	103	3,119,405.23	0.09	98.8	Analog	0.30	3
3	In	115	3,284,459.83	0.28	108.1	Analog	0.30	3
3	Tb	159	5,075,866.84	0.24	110.3	Analog	0.30	3
3	Bi	209	3,020,421.10	0.49	105.8	Analog	0.30	3

Quantitation Report

File Name	A0511058.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:26
Sample Name	MB-58318,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	8.368E-06	Pulse	0.30	3
B	11	6	3	3.854	ppb	7.91	39,689.74	2.483E-02	Pulse	0.30	3
Na	23	45	2	141.133	ppb	9.82	270,233.17	3.380E+00	Pulse	0.30	3
Mg	26	45	2	0.564	ppb	31.30	191.12	2.387E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	124.43	1.559E-03	Pulse	0.30	3
K	39	45	2	26.980	ppb	7.36	29,170.61	3.647E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	10,012.30	4.304E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	453.36	5.659E-03	Pulse	0.30	3
Cr	52	45	2	0.095	ppb	17.06	1,616.53	2.021E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	208.34	2.603E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,705.96	2.133E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	27.50	3.430E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	489.74	9.038E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,665.99	3.075E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	480.13	8.860E-03	Pulse	0.30	3
As	75	72	2	0.004	ppb	157.39	15.11	2.797E-04	Pulse	0.75	3
Se	78	72	1	0.005	ppb	590.47	3.33	6.064E-05	Pulse	0.30	3
Mo	95	103	2	<0.000	ppb	---	37.78	2.503E-05	Pulse	0.30	3
Ag	107	103	3	0.756	ppb	13.49	23,682.28	6.946E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	269.82	7.970E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	326.68	9.649E-05	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-49.75	-9.998E-06	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	1,014.52	3.312E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	3,135.30	1.024E-03	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	30.79	1.006E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,598,910.74	1.30	77.8	Analog	0.30	3
2	Sc	45	79,992.65	1.40	97.2	Pulse	0.30	3
3	Sc	45	2,326,212.41	0.40	102.3	Analog	0.30	3
1	Ge	72	54,488.21	0.86	104.3	Pulse	0.30	3
2	Ge	72	54,158.61	1.31	107.5	Pulse	0.30	3
2	Rh	103	1,509,729.18	0.44	103.8	Analog	0.30	3
3	Rh	103	3,408,271.72	0.48	108.0	Analog	0.30	3
3	In	115	3,385,287.42	0.19	111.4	Analog	0.30	3
3	Tb	159	4,982,051.70	0.57	108.3	Analog	0.30	3
3	Bi	209	3,062,885.93	0.29	107.3	Analog	0.30	3

Quantitation Report

File Name	A0511059.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:32
Sample Name	LCS-58318,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.749	ppb	1.29	89,241.15	5.529E-02	Pulse	0.30	3
B	11	6	3	1908.131	ppb	0.53	12,985,623.52	8.045E+00	Analog	0.30	3
Na	23	45	2	370.152	ppb	1.37	549,932.89	6.725E+00	Pulse	0.30	3
Mg	26	45	2	100.357	ppb	2.45	10,471.46	1.281E-01	Pulse	0.30	3
Al	27	45	2	182.684	ppb	1.59	38,815.62	4.747E-01	Pulse	0.30	3
K	39	45	2	117.247	ppb	2.43	58,598.06	7.166E-01	Pulse	0.30	3
Ca	44	45	3	138.696	ppb	0.64	163,651.41	7.247E-02	Pulse	0.30	3
V	51	45	2	10.217	ppb	0.61	46,084.79	5.635E-01	Pulse	0.30	3
Cr	52	45	2	9.752	ppb	0.94	59,875.52	7.322E-01	Pulse	0.30	3
Mn	55	45	2	99.639	ppb	0.67	309,210.73	3.781E+00	Pulse	0.30	3
Fe	56	45	2	104.257	ppb	0.55	535,359.99	6.546E+00	Pulse	0.30	3
Co	59	45	2	9.544	ppb	1.26	100,165.35	1.225E+00	Pulse	0.30	3
Ni	60	72	2	10.069	ppb	1.42	28,681.99	5.354E-01	Pulse	0.30	3
Cu	63	72	2	9.191	ppb	2.05	77,882.96	1.454E+00	Pulse	0.30	3
Zn	66	72	2	97.451	ppb	0.95	120,833.39	2.255E+00	Pulse	0.30	3
As	75	72	2	9.768	ppb	1.97	6,618.30	1.235E-01	Pulse	0.75	3
Se	78	72	1	9.198	ppb	2.68	1,944.64	3.584E-02	Pulse	0.30	3
Mo	95	103	2	10.155	ppb	0.59	35,529.15	2.375E-02	Pulse	0.30	3
Ag	107	103	3	0.051	ppb	7.45	3,352.29	1.017E-03	Pulse	0.30	3
Cd	111	115	3	9.813	ppb	0.41	62,294.26	1.857E-02	Pulse	0.30	3
Sb	121	115	3	10.135	ppb	0.40	236,880.94	7.060E-02	Pulse	0.30	3
Ba	137	159	3	111.268	ppb	0.69	819,215.30	1.644E-01	Pulse	0.30	3
Tl	205	209	3	10.145	ppb	0.47	528,071.45	1.722E-01	Pulse	0.30	3
Pb	208	209	3	10.506	ppb	1.04	752,807.54	2.456E-01	Pulse	0.30	3
U	238	209	3	10.530	ppb	0.83	841,490.97	2.745E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,614,132.57	1.04	78.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	81,786.31	1.49	99.3	Pulse	0.30	3
3	Sc	45	2,258,040.40	0.26	99.3	Analog	0.30	3
1	Ge	72	54,263.33	0.83	103.9	Pulse	0.30	3
2	Ge	72	53,574.22	0.95	106.3	Pulse	0.30	3
2	Rh	103	1,495,898.00	1.32	102.8	Analog	0.30	3
3	Rh	103	3,295,473.84	0.46	104.4	Analog	0.30	3
3	In	115	3,355,230.61	1.26	110.4	Analog	0.30	3
3	Tb	159	4,983,728.78	1.23	108.3	Analog	0.30	3
3	Bi	209	3,066,033.32	1.21	107.4	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0511060.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:37
Sample Name	N019610-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	57.78	4.631E-05	Pulse	0.30	3
B	11	6	3	537.149	ppb	0.68	2,836,010.39	2.271E+00	Analog	0.30	3
Na	23	45	2	135911.766	ppb	0.69	136,449,666.85	1.986E+03	Analog	0.30	3
Mg	26	45	2	24118.413	ppb	0.96	2,086,743.03	3.038E+01	Analog	0.30	3
Al	27	45	2	2.703	ppb	10.78	616.39	8.968E-03	Pulse	0.30	3
K	39	45	2	4158.664	ppb	0.27	1,131,501.11	1.647E+01	Mix	0.30	3
Ca	44	45	3	134422.175	ppb	0.82	116,324,430.49	6.114E+01	Analog	0.30	3
V	51	45	2	4.379	ppb	0.97	16,895.89	2.459E-01	Pulse	0.30	3
Cr	52	45	2	5.026	ppb	1.61	26,363.74	3.837E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,987.92	-4.350E-02	Pulse	0.30	3
Fe	56	45	2	1.788	ppb	2.83	9,522.20	1.386E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-23.87	-3.452E-04	Pulse	0.30	3
Ni	60	72	2	0.215	ppb	14.67	945.80	2.134E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-237.61	-5.370E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	969.72	2.188E-02	Pulse	0.30	3
As	75	72	2	0.405	ppb	3.51	236.86	5.345E-03	Pulse	0.75	3
Se	78	72	1	0.133	ppb	27.93	25.55	5.586E-04	Pulse	0.30	3
Mo	95	103	2	0.922	ppb	2.45	2,531.41	2.185E-03	Pulse	0.30	3
Ag	107	103	3	0.112	ppb	4.06	3,775.80	1.533E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-26,700.32	-1.008E-02	Pulse	0.30	3
Sb	121	115	3	0.036	ppb	16.75	980.07	3.699E-04	Pulse	0.30	3
Ba	137	159	3	25.307	ppb	0.59	156,291.89	3.744E-02	Pulse	0.30	3
Tl	205	209	3	0.030	ppb	5.48	2,194.69	9.033E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-50,577.91	-2.082E-02	Pulse	0.30	3
U	238	209	3	34.413	ppb	0.55	2,179,042.45	8.968E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,248,860.96	0.65	60.7	Analog	0.30	3
2	Sc	45	68,702.14	0.80	83.4	Pulse	0.30	3
3	Sc	45	1,902,737.35	0.51	83.7	Analog	0.30	3
1	Ge	72	45,653.59	1.38	87.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	44,311.15	0.36	87.9	Pulse	0.30	3
2	Rh	103	1,158,342.54	0.22	79.6	Analog	0.30	3
3	Rh	103	2,464,030.90	0.81	78.1	Analog	0.30	3
3	In	115	2,650,059.17	0.40	87.2	Analog	0.30	3
3	Tb	159	4,174,243.86	0.74	90.7	Analog	0.30	3
3	Bi	209	2,429,744.29	0.70	85.1	Analog	0.30	3

Quantitation Report

File Name	A0511061.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:43
Sample Name	N019610-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	45.60	83.34	6.370E-05	Pulse	0.30	3
B	11	6	3	562.327	ppb	1.80	3,110,493.98	2.377E+00	Analog	0.30	3
Na	23	45	2	143307.195	ppb	0.72	143,208,652.31	2.094E+03	Analog	0.30	3
Mg	26	45	2	27449.863	ppb	1.90	2,364,203.70	3.457E+01	Analog	0.30	3
Al	27	45	2	1.660	ppb	13.02	428.70	6.269E-03	Pulse	0.30	3
K	39	45	2	4226.466	ppb	3.06	1,144,452.66	1.673E+01	Mix	0.30	3
Ca	44	45	3	153892.216	ppb	0.86	142,050,590.10	6.999E+01	Analog	0.30	3
V	51	45	2	3.967	ppb	1.32	15,284.22	2.235E-01	Pulse	0.30	3
Cr	52	45	2	3.435	ppb	0.82	18,220.97	2.665E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-4,379.02	-6.403E-02	Pulse	0.30	3
Fe	56	45	2	4.445	ppb	10.84	20,838.65	3.047E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-31.64	-4.609E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	385.99	8.702E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-767.73	-1.730E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-70.16	-1.583E-03	Pulse	0.30	3
As	75	72	2	0.448	ppb	7.26	260.92	5.882E-03	Pulse	0.75	3
Se	78	72	1	0.247	ppb	22.03	42.23	1.004E-03	Pulse	0.30	3
Mo	95	103	2	1.523	ppb	2.62	4,241.84	3.588E-03	Pulse	0.30	3
Ag	107	103	3	0.061	ppb	17.18	2,915.82	1.104E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,836.09	-7.045E-03	Pulse	0.30	3
Sb	121	115	3	0.026	ppb	1.80	845.61	2.989E-04	Pulse	0.30	3
Ba	137	159	3	29.848	ppb	9.98	196,419.69	4.415E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	20.30	1,449.02	5.607E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-40,874.11	-1.587E-02	Pulse	0.30	3
U	238	209	3	32.645	ppb	0.79	2,199,092.71	8.508E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,308,584.81	0.96	63.6	Analog	0.30	3
2	Sc	45	68,384.32	0.48	83.1	Pulse	0.30	3
3	Sc	45	2,029,593.72	0.85	89.2	Analog	0.30	3
1	Ge	72	41,970.51	1.72	80.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	44,355.70	0.32	88.0	Pulse	0.30	3
2	Rh	103	1,182,370.93	1.44	81.3	Analog	0.30	3
3	Rh	103	2,639,719.91	1.17	83.6	Analog	0.30	3
3	In	115	2,828,811.49	0.83	93.1	Analog	0.30	3
3	Tb	159	4,446,763.06	1.00	96.6	Analog	0.30	3
3	Bi	209	2,584,840.64	0.75	90.6	Analog	0.30	3

Quantitation Report

File Name	A0511062.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:48
Sample Name	N019610-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	197.66	75.56	5.634E-05	Pulse	0.30	3
B	11	6	3	579.917	ppb	1.36	3,290,233.70	2.451E+00	Analog	0.30	3
Na	23	45	2	145806.131	ppb	0.66	147,261,803.36	2.131E+03	Analog	0.30	3
Mg	26	45	2	27896.478	ppb	1.68	2,427,974.77	3.513E+01	Analog	0.30	3
Al	27	45	2	0.742	ppb	37.60	270.11	3.894E-03	Pulse	0.30	3
K	39	45	2	4222.124	ppb	0.69	1,155,415.75	1.672E+01	Analog	0.30	3
Ca	44	45	3	157600.001	ppb	1.09	149,524,414.44	7.168E+01	Analog	0.30	3
V	51	45	2	4.079	ppb	3.05	15,869.25	2.296E-01	Pulse	0.30	3
Cr	52	45	2	3.571	ppb	1.42	19,114.49	2.765E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-4,594.49	-6.649E-02	Pulse	0.30	3
Fe	56	45	2	1.205	ppb	4.99	7,058.72	1.022E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-73.91	-1.066E-03	Pulse	0.30	3
Ni	60	72	2	0.035	ppb	78.09	544.05	1.199E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-675.58	-1.479E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-133.36	-2.917E-03	Pulse	0.30	3
As	75	72	2	0.440	ppb	14.55	263.83	5.790E-03	Pulse	0.75	3
Se	78	72	1	0.222	ppb	61.63	40.00	9.083E-04	Pulse	0.30	3
Mo	95	103	2	1.622	ppb	4.12	4,460.80	3.819E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,282.29	4.721E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-456.20	-1.566E-04	Pulse	0.30	3
Sb	121	115	3	0.022	ppb	1.67	801.17	2.749E-04	Pulse	0.30	3
Ba	137	159	3	33.765	ppb	1.08	229,187.58	4.993E-02	Pulse	0.30	3
Tl	205	209	3	0.005	ppb	8.28	1,250.10	4.710E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,776.33	-1.800E-03	Pulse	0.30	3
U	238	209	3	33.283	ppb	0.67	2,301,759.74	8.674E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,342,322.17	0.55	65.3	Analog	0.30	3
2	Sc	45	69,122.87	3.44	84.0	Pulse	0.30	3
3	Sc	45	2,086,321.82	1.44	91.7	Analog	0.30	3
1	Ge	72	43,784.30	1.53	83.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	45,471.02	3.46	90.2	Pulse	0.30	3
2	Rh	103	1,167,830.48	0.76	80.3	Analog	0.30	3
3	Rh	103	2,717,036.87	0.31	86.1	Analog	0.30	3
3	In	115	2,914,653.40	0.72	95.9	Analog	0.30	3
3	Tb	159	4,589,900.59	0.48	99.7	Analog	0.30	3
3	Bi	209	2,653,746.28	1.14	93.0	Analog	0.30	3

Quantitation Report

File Name	A0511063.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 15:54
Sample Name	N019610-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	61.98	84.45	7.051E-05	Pulse	0.30	3
B	11	6	3	763.568	ppb	2.09	3,859,343.81	3.225E+00	Analog	0.30	3
Na	23	45	2	282826.250	ppb	0.31	265,013,291.60	4.132E+03	Analog	0.30	3
Mg	26	45	2	38786.762	ppb	0.23	3,133,195.93	4.885E+01	Analog	0.30	3
Al	27	45	2	2.639	ppb	8.34	564.24	8.802E-03	Pulse	0.30	3
K	39	45	2	5133.063	ppb	2.62	1,300,401.16	2.027E+01	Analog	0.30	3
Ca	44	45	3	222313.178	ppb	0.31	191,965,043.80	1.011E+02	Analog	0.30	3
V	51	45	2	4.704	ppb	1.13	16,903.67	2.636E-01	Pulse	0.30	3
Cr	52	45	2	3.610	ppb	2.72	17,921.71	2.794E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-5,538.76	-8.634E-02	Pulse	0.30	3
Fe	56	45	2	0.330	ppb	58.25	3,051.04	4.743E-02	Pulse	0.30	3
Co	59	45	2	0.011	ppb	28.53	116.57	1.820E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	422.94	1.013E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,011.24	-2.422E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,066.91	-2.556E-02	Pulse	0.30	3
As	75	72	2	0.565	ppb	13.60	307.50	7.366E-03	Pulse	0.75	3
Se	78	72	1	0.569	ppb	10.06	90.00	2.257E-03	Pulse	0.30	3
Mo	95	103	2	1.168	ppb	2.93	2,941.50	2.760E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,387.27	5.700E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-552.88	-2.121E-04	Pulse	0.30	3
Sb	121	115	3	0.023	ppb	10.54	728.93	2.796E-04	Pulse	0.30	3
Ba	137	159	3	28.203	ppb	0.57	171,731.27	4.172E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	828.94	3.561E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-6,558.57	-2.820E-03	Pulse	0.30	3
U	238	209	3	44.427	ppb	0.59	2,692,732.08	1.158E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,197,031.15	1.77	58.2	Analog	0.30	3
2	Sc	45	64,142.83	1.65	77.9	Pulse	0.30	3
3	Sc	45	1,898,705.74	1.02	83.5	Analog	0.30	3
1	Ge	72	39,879.64	0.96	76.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	41,740.85	0.13	82.8	Pulse	0.30	3
2	Rh	103	1,065,526.35	1.59	73.2	Pulse	0.30	3
3	Rh	103	2,435,834.11	1.12	77.2	Analog	0.30	3
3	In	115	2,606,964.15	1.29	85.8	Analog	0.30	3
3	Tb	159	4,116,300.81	1.16	89.4	Analog	0.30	3
3	Bi	209	2,325,832.54	1.47	81.5	Analog	0.30	3

Quantitation Report

File Name	A0511064.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:00
Sample Name	N019610-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	16.67	1.317E-05	Pulse	0.30	3
B	11	6	3	271.876	ppb	1.25	1,460,649.63	1.154E+00	Analog	0.30	3
Na	23	45	2	66632.575	ppb	0.44	63,008,777.95	9.744E+02	Analog	0.30	3
Mg	26	45	2	14414.759	ppb	1.07	1,173,999.83	1.815E+01	Analog	0.30	3
Al	27	45	2	4.738	ppb	11.59	920.77	1.423E-02	Pulse	0.30	3
K	39	45	2	3479.051	ppb	0.59	893,693.38	1.382E+01	Pulse	0.30	3
Ca	44	45	3	78748.421	ppb	0.36	68,541,729.53	3.582E+01	Analog	0.30	3
V	51	45	2	3.701	ppb	2.86	13,517.11	2.090E-01	Pulse	0.30	3
Cr	52	45	2	2.702	ppb	1.90	13,740.50	2.125E-01	Pulse	0.30	3
Mn	55	45	2	2.839	ppb	2.64	7,157.67	1.107E-01	Pulse	0.30	3
Fe	56	45	2	23.970	ppb	1.00	98,660.73	1.526E+00	Pulse	0.30	3
Co	59	45	2	0.017	ppb	36.94	162.42	2.509E-03	Pulse	0.30	3
Ni	60	72	2	0.487	ppb	3.01	1,532.50	3.555E-02	Pulse	0.30	3
Cu	63	72	2	0.717	ppb	2.29	7,969.69	1.849E-01	Pulse	0.30	3
Zn	66	72	2	43.150	ppb	1.55	43,740.09	1.015E+00	Pulse	0.30	3
As	75	72	2	0.929	ppb	6.99	515.17	1.195E-02	Pulse	0.75	3
Se	78	72	1	0.314	ppb	13.65	54.45	1.265E-03	Pulse	0.30	3
Mo	95	103	2	2.406	ppb	4.10	6,463.79	5.650E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-237.93	-9.371E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-12,792.94	-4.704E-03	Pulse	0.30	3
Sb	121	115	3	0.014	ppb	9.01	591.15	2.174E-04	Pulse	0.30	3
Ba	137	159	3	44.406	ppb	0.78	278,164.95	6.565E-02	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	28.27	1,379.01	5.499E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-13,936.49	-5.559E-03	Pulse	0.30	3
U	238	209	3	13.600	ppb	1.41	888,605.51	3.545E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,266,118.68	0.40	61.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	64,664.00	0.81	78.5	Pulse	0.30	3
3	Sc	45	1,913,541.10	0.14	84.1	Analog	0.30	3
1	Ge	72	43,072.17	1.24	82.5	Pulse	0.30	3
2	Ge	72	43,104.62	0.20	85.5	Pulse	0.30	3
2	Rh	103	1,144,627.88	2.54	78.7	Analog	0.30	3
3	Rh	103	2,538,722.25	0.37	80.4	Analog	0.30	3
3	In	115	2,719,422.50	0.79	89.5	Analog	0.30	3
3	Tb	159	4,237,471.12	1.21	92.1	Analog	0.30	3
3	Bi	209	2,507,204.08	0.88	87.9	Analog	0.30	3

Quantitation Report

File Name	A0511065.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:05
Sample Name	CCV4,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	18.635	ppb	1.24	155,312.94	1.056E-01	Pulse	0.30	3
B	11	6	3	204.586	ppb	1.95	1,279,429.85	8.703E-01	Analog	0.30	3
Na	23	45	2	412.304	ppb	5.68	533,569.06	7.340E+00	Pulse	0.30	3
Mg	26	45	2	199.131	ppb	0.74	18,368.46	2.525E-01	Pulse	0.30	3
Al	27	45	2	21.120	ppb	1.59	4,118.85	5.662E-02	Pulse	0.30	3
K	39	45	2	221.199	ppb	3.46	81,580.03	1.122E+00	Pulse	0.30	3
Ca	44	45	3	249.458	ppb	0.95	246,411.37	1.228E-01	Pulse	0.30	3
V	51	45	2	20.409	ppb	1.72	81,315.02	1.118E+00	Pulse	0.30	3
Cr	52	45	2	19.443	ppb	1.50	105,236.15	1.447E+00	Pulse	0.30	3
Mn	55	45	2	20.088	ppb	2.07	55,618.27	7.647E-01	Pulse	0.30	3
Fe	56	45	2	21.371	ppb	1.56	99,159.62	1.363E+00	Pulse	0.30	3
Co	59	45	2	19.832	ppb	2.55	185,063.68	2.545E+00	Pulse	0.30	3
Ni	60	72	2	18.171	ppb	1.49	47,512.77	9.580E-01	Pulse	0.30	3
Cu	63	72	2	17.501	ppb	0.74	133,822.09	2.698E+00	Pulse	0.30	3
Zn	66	72	2	18.467	ppb	1.56	22,353.06	4.507E-01	Pulse	0.30	3
As	75	72	2	18.778	ppb	1.85	11,769.25	2.373E-01	Pulse	0.75	3
Se	78	72	1	19.699	ppb	5.86	3,573.87	7.671E-02	Pulse	0.30	3
Mo	95	103	2	19.854	ppb	1.36	63,766.32	4.641E-02	Pulse	0.30	3
Ag	107	103	3	19.179	ppb	0.30	493,853.71	1.618E-01	Pulse	0.30	3
Cd	111	115	3	19.301	ppb	0.48	113,800.80	3.621E-02	Pulse	0.30	3
Sb	121	115	3	20.096	ppb	1.05	439,486.27	1.399E-01	Pulse	0.30	3
Ba	137	159	3	21.487	ppb	0.26	150,870.06	3.180E-02	Pulse	0.30	3
Tl	205	209	3	19.949	ppb	0.96	1,010,914.88	3.383E-01	Pulse	0.30	3
Pb	208	209	3	20.202	ppb	1.04	1,402,817.53	4.695E-01	Pulse	0.30	3
U	238	209	3	19.954	ppb	0.41	1,553,972.80	5.200E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,470,260.97	0.66	71.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	72,767.19	3.40	88.4	Pulse	0.30	3
3	Sc	45	2,006,019.03	0.88	88.2	Analog	0.30	3
1	Ge	72	46,589.68	0.90	89.2	Pulse	0.30	3
2	Ge	72	49,598.64	1.71	98.4	Pulse	0.30	3
2	Rh	103	1,374,223.81	1.75	94.4	Analog	0.30	3
3	Rh	103	3,052,474.15	0.25	96.7	Analog	0.30	3
3	In	115	3,142,300.36	0.90	103.4	Analog	0.30	3
3	Tb	159	4,744,284.72	0.40	103.1	Analog	0.30	3
3	Bi	209	2,988,220.82	0.48	104.7	Analog	0.30	3

Quantitation Report

File Name	A0511066.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:11
Sample Name	CCB4,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	328.19	85.57	6.185E-05	Pulse	0.30	3
B	11	6	3	13.554	ppb	2.27	90,784.96	6.568E-02	Pulse	0.30	3
Na	23	45	2	97.360	ppb	6.93	193,773.50	2.741E+00	Pulse	0.30	3
Mg	26	45	2	1.567	ppb	53.83	257.79	3.651E-03	Pulse	0.30	3
Al	27	45	2	0.081	ppb	145.84	154.43	2.183E-03	Pulse	0.30	3
K	39	45	2	17.615	ppb	8.82	23,209.05	3.282E-01	Pulse	0.30	3
Ca	44	45	3	3.036	ppb	15.19	21,004.03	1.078E-02	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	294.46	4.164E-03	Pulse	0.30	3
Cr	52	45	2	0.031	ppb	41.67	1,099.88	1.555E-02	Pulse	0.30	3
Mn	55	45	2	0.001	ppb	1108.54	220.09	3.115E-03	Pulse	0.30	3
Fe	56	45	2	0.043	ppb	69.60	2,082.67	2.945E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	96.32	46.46	6.557E-04	Pulse	0.30	3
Ni	60	72	2	0.063	ppb	44.25	652.02	1.343E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,716.80	3.538E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	519.21	1.070E-02	Pulse	0.30	3
As	75	72	2	0.002	ppb	215.19	12.44	2.565E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	2.373E-05	Pulse	0.30	3
Mo	95	103	2	0.072	ppb	6.40	270.01	2.004E-04	Pulse	0.30	3
Ag	107	103	3	0.905	ppb	14.03	24,437.24	8.197E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	283.34	9.272E-05	Pulse	0.30	3
Sb	121	115	3	0.036	ppb	14.14	1,125.64	3.683E-04	Pulse	0.30	3
Ba	137	159	3	0.014	ppb	83.24	412.88	8.925E-05	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	941.18	3.268E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	3,781.07	1.314E-03	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.007	ppb	13.10	682.13	2.369E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,382,241.74	0.33	67.2	Analog	0.30	3
2	Sc	45	70,718.40	1.18	85.9	Pulse	0.30	3
3	Sc	45	1,947,469.83	0.63	85.6	Analog	0.30	3
1	Ge	72	47,519.98	1.49	91.0	Pulse	0.30	3
2	Ge	72	48,516.39	0.82	96.3	Pulse	0.30	3
2	Rh	103	1,347,569.06	0.89	92.6	Analog	0.30	3
3	Rh	103	2,981,649.57	0.36	94.4	Analog	0.30	3
3	In	115	3,056,232.92	0.15	100.6	Analog	0.30	3
3	Tb	159	4,624,861.22	0.24	100.5	Analog	0.30	3
3	Bi	209	2,878,309.12	1.14	100.9	Analog	0.30	3

Quantitation Report

File Name	A0511073.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:16
Sample Name	N019610-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	15.55	1.280E-05	Pulse	0.30	3
B	11	6	3	125.673	ppb	1.51	656,149.50	5.379E-01	Pulse	0.30	3
Na	23	45	2	47791.099	ppb	1.17	46,062,488.21	6.993E+02	Analog	0.30	3
Mg	26	45	2	9328.597	ppb	1.66	773,954.96	1.175E+01	Pulse	0.30	3
Al	27	45	2	4.228	ppb	16.44	850.66	1.291E-02	Pulse	0.30	3
K	39	45	2	5334.010	ppb	2.36	1,386,785.41	2.105E+01	Analog	0.30	3
Ca	44	45	3	43504.797	ppb	0.97	38,797,090.26	1.979E+01	Analog	0.30	3
V	51	45	2	7.509	ppb	1.38	27,416.90	4.162E-01	Pulse	0.30	3
Cr	52	45	2	4.355	ppb	5.36	22,014.90	3.343E-01	Pulse	0.30	3
Mn	55	45	2	0.921	ppb	4.73	2,502.95	3.800E-02	Pulse	0.30	3
Fe	56	45	2	5.764	ppb	1.81	25,506.00	3.872E-01	Pulse	0.30	3
Co	59	45	2	0.013	ppb	14.39	134.92	2.050E-03	Pulse	0.30	3
Ni	60	72	2	0.655	ppb	17.02	1,948.87	4.431E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,952.62	4.439E-02	Pulse	0.30	3
Zn	66	72	2	1.285	ppb	6.03	2,559.23	5.816E-02	Pulse	0.30	3
As	75	72	2	4.100	ppb	6.96	2,285.88	5.199E-02	Pulse	0.75	3
Se	78	72	1	0.184	ppb	36.45	32.22	7.587E-04	Pulse	0.30	3
Mo	95	103	2	4.022	ppb	1.41	11,288.87	9.425E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-997.49	-3.856E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-9,180.06	-3.381E-03	Pulse	0.30	3
Sb	121	115	3	0.056	ppb	3.52	1,376.79	5.070E-04	Pulse	0.30	3
Ba	137	159	3	86.595	ppb	0.60	545,751.34	1.279E-01	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	930.35	1,004.52	3.939E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-16,818.88	-6.593E-03	Pulse	0.30	3
U	238	209	3	17.019	ppb	1.05	1,131,632.55	4.436E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,219,951.20	0.96	59.3	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	65,881.08	1.59	80.0	Pulse	0.30	3
3	Sc	45	1,960,315.41	1.15	86.2	Analog	0.30	3
1	Ge	72	42,613.41	1.59	81.6	Pulse	0.30	3
2	Ge	72	43,991.29	1.68	87.3	Pulse	0.30	3
2	Rh	103	1,197,991.54	2.10	82.3	Analog	0.30	3
3	Rh	103	2,586,379.18	0.73	81.9	Analog	0.30	3
3	In	115	2,715,457.28	0.29	89.3	Analog	0.30	3
3	Tb	159	4,265,450.80	0.62	92.7	Analog	0.30	3
3	Bi	209	2,551,332.17	0.58	89.4	Analog	0.30	3

Quantitation Report

File Name	A0511074.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:22
Sample Name	N019610-009B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	23.33	1.779E-05	Pulse	0.30	3
B	11	6	3	160.382	ppb	0.88	898,168.52	6.841E-01	Pulse	0.30	3
Na	23	45	2	59682.852	ppb	0.39	59,834,219.66	8.729E+02	Analog	0.30	3
Mg	26	45	2	9852.937	ppb	0.74	850,593.73	1.241E+01	Pulse	0.30	3
Al	27	45	2	6.172	ppb	8.70	1,230.84	1.794E-02	Pulse	0.30	3
K	39	45	2	6164.043	ppb	0.81	1,664,716.73	2.429E+01	Analog	0.30	3
Ca	44	45	3	66987.936	ppb	0.45	62,533,670.18	3.047E+01	Analog	0.30	3
V	51	45	2	5.468	ppb	1.08	20,915.06	3.051E-01	Pulse	0.30	3
Cr	52	45	2	124.789	ppb	0.62	631,490.85	9.213E+00	Pulse	0.30	3
Mn	55	45	2	1.293	ppb	4.14	3,571.16	5.209E-02	Pulse	0.30	3
Fe	56	45	2	6.165	ppb	1.77	28,256.05	4.123E-01	Pulse	0.30	3
Co	59	45	2	0.020	ppb	40.51	201.66	2.951E-03	Pulse	0.30	3
Ni	60	72	2	0.474	ppb	5.29	1,610.94	3.487E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,571.26	3.399E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	802.90	1.739E-02	Pulse	0.30	3
As	75	72	2	2.792	ppb	1.57	1,637.56	3.547E-02	Pulse	0.75	3
Se	78	72	1	0.073	ppb	56.04	14.45	3.255E-04	Pulse	0.30	3
Mo	95	103	2	6.906	ppb	0.51	19,983.06	1.616E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,369.67	-5.105E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-12,116.30	-4.246E-03	Pulse	0.30	3
Sb	121	115	3	0.054	ppb	13.91	1,411.23	4.944E-04	Pulse	0.30	3
Ba	137	159	3	172.447	ppb	0.14	1,130,874.02	2.547E-01	Analog	0.30	3
Tl	205	209	3	0.005	ppb	6.53	1,248.99	4.772E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-24,795.31	-9.474E-03	Pulse	0.30	3
U	238	209	3	40.340	ppb	0.32	2,751,603.77	1.051E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,313,039.74	1.35	63.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	68,545.12	1.32	83.3	Pulse	0.30	3
3	Sc	45	2,052,235.14	0.43	90.2	Analog	0.30	3
1	Ge	72	44,536.01	1.06	85.3	Pulse	0.30	3
2	Ge	72	46,177.32	2.13	91.6	Pulse	0.30	3
2	Rh	103	1,236,485.52	0.22	85.0	Analog	0.30	3
3	Rh	103	2,683,450.41	0.81	85.0	Analog	0.30	3
3	In	115	2,853,439.64	0.61	93.9	Analog	0.30	3
3	Tb	159	4,439,424.31	0.54	96.5	Analog	0.30	3
3	Bi	209	2,617,349.35	1.19	91.7	Analog	0.30	3

Quantitation Report

File Name	A0511075.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:27
Sample Name	N019610-010B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	24.44	1.910E-05	Pulse	0.30	3
B	11	6	3	275.283	ppb	0.50	1,492,065.40	1.168E+00	Analog	0.30	3
Na	23	45	2	66330.504	ppb	0.34	65,792,472.91	9.700E+02	Analog	0.30	3
Mg	26	45	2	13604.867	ppb	0.80	1,162,189.78	1.714E+01	Analog	0.30	3
Al	27	45	2	1.940	ppb	17.26	474.13	6.993E-03	Pulse	0.30	3
K	39	45	2	4885.502	ppb	1.38	1,309,135.83	1.930E+01	Analog	0.30	3
Ca	44	45	3	82366.065	ppb	0.22	74,869,878.88	3.746E+01	Analog	0.30	3
V	51	45	2	4.755	ppb	1.22	18,064.96	2.663E-01	Pulse	0.30	3
Cr	52	45	2	203.213	ppb	1.35	1,016,935.58	1.499E+01	Pulse	0.30	3
Mn	55	45	2	38.141	ppb	0.09	98,292.59	1.449E+00	Pulse	0.30	3
Fe	56	45	2	4.049	ppb	1.55	18,990.93	2.800E-01	Pulse	0.30	3
Co	59	45	2	0.055	ppb	8.39	503.99	7.425E-03	Pulse	0.30	3
Ni	60	72	2	0.732	ppb	6.18	2,206.10	4.834E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,746.42	3.827E-02	Pulse	0.30	3
Zn	66	72	2	0.251	ppb	23.41	1,575.02	3.453E-02	Pulse	0.30	3
As	75	72	2	1.313	ppb	3.83	766.77	1.681E-02	Pulse	0.75	3
Se	78	72	1	0.097	ppb	78.67	18.89	4.189E-04	Pulse	0.30	3
Mo	95	103	2	2.805	ppb	2.00	7,932.25	6.582E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,170.15	-4.405E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-13,480.59	-4.803E-03	Pulse	0.30	3
Sb	121	115	3	0.074	ppb	8.47	1,770.17	6.309E-04	Pulse	0.30	3
Ba	137	159	3	84.796	ppb	0.49	542,900.80	1.253E-01	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	15.58	1,559.04	6.110E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-27,335.56	-1.071E-02	Pulse	0.30	3
U	238	209	3	25.446	ppb	0.66	1,692,271.89	6.632E-01	Analog	0.30	3

OLR

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,277,405.36	0.71	62.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	67,828.79	1.50	82.4	Pulse	0.30	3
3	Sc	45	1,998,425.72	0.22	87.9	Analog	0.30	3
1	Ge	72	45,062.94	1.43	86.3	Pulse	0.30	3
2	Ge	72	45,625.98	0.95	90.5	Pulse	0.30	3
2	Rh	103	1,204,942.72	0.87	82.8	Analog	0.30	3
3	Rh	103	2,656,813.12	0.68	84.2	Analog	0.30	3
3	In	115	2,806,849.94	1.21	92.4	Analog	0.30	3
3	Tb	159	4,333,148.76	0.98	94.2	Analog	0.30	3
3	Bi	209	2,551,874.42	1.09	89.4	Analog	0.30	3

Quantitation Report

File Name	A0511076.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:33
Sample Name	N019610-011B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	36.67	2.784E-05	Pulse	0.30	3
B	11	6	3	256.495	ppb	0.48	1,434,125.77	1.089E+00	Analog	0.30	3
Na	23	45	2	65638.445	ppb	0.25	66,922,562.89	9.599E+02	Analog	0.30	3
Mg	26	45	2	15027.954	ppb	1.38	1,319,550.96	1.893E+01	Analog	0.30	3
Al	27	45	2	25.460	ppb	6.91	4,731.40	6.785E-02	Pulse	0.30	3
K	39	45	2	3593.380	ppb	0.59	994,626.26	1.427E+01	Pulse	0.30	3
Ca	44	45	3	87090.760	ppb	0.59	78,896,908.27	3.961E+01	Analog	0.30	3
V	51	45	2	4.756	ppb	1.89	18,574.43	2.664E-01	Pulse	0.30	3
Cr	52	45	2	340.505	ppb	0.99	1,751,094.92	2.512E+01	Analog	0.30	3
Mn	55	45	2	158.119	ppb	0.20	418,164.30	5.998E+00	Pulse	0.30	3
Fe	56	45	2	32.720	ppb	1.10	144,510.16	2.073E+00	Pulse	0.30	3
Co	59	45	2	0.055	ppb	8.72	523.39	7.505E-03	Pulse	0.30	3
Ni	60	72	2	0.765	ppb	1.77	2,308.81	5.004E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	3,447.08	7.472E-02	Pulse	0.30	3
Zn	66	72	2	0.207	ppb	50.97	1,547.11	3.354E-02	Pulse	0.30	3
As	75	72	2	1.671	ppb	4.59	983.64	2.133E-02	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	4.053	ppb	0.75	11,525.69	9.499E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-998.38	-3.758E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-13,597.65	-4.834E-03	Pulse	0.30	3
Sb	121	115	3	0.035	ppb	16.65	1,016.75	3.615E-04	Pulse	0.30	3
Ba	137	159	3	134.365	ppb	0.25	865,412.62	1.985E-01	Pulse	0.30	3
Tl	205	209	3	0.011	ppb	11.70	1,494.58	5.815E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-25,870.93	-1.007E-02	Pulse	0.30	3
U	238	209	3	23.495	ppb	1.06	1,573,915.22	6.123E-01	Analog	0.30	3

OLR

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,317,056.72	0.15	64.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	69,718.66	0.79	84.7	Pulse	0.30	3
3	Sc	45	1,991,701.99	0.41	87.6	Analog	0.30	3
1	Ge	72	45,807.47	0.75	87.7	Pulse	0.30	3
2	Ge	72	46,145.00	1.57	91.6	Pulse	0.30	3
2	Rh	103	1,213,368.51	0.48	83.4	Analog	0.30	3
3	Rh	103	2,656,255.15	1.15	84.1	Analog	0.30	3
3	In	115	2,813,142.86	0.46	92.6	Analog	0.30	3
3	Tb	159	4,359,884.97	0.76	94.7	Analog	0.30	3
3	Bi	209	2,570,347.34	0.51	90.1	Analog	0.30	3

Quantitation Report

File Name	A0511077.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:39
Sample Name	N019610-012B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	52.23	3.941E-05	Pulse	0.30	3
B	11	6	3	171.946	ppb	1.60	970,061.93	7.328E-01	Pulse	0.30	3
Na	23	45	2	66432.284	ppb	1.20	66,702,289.56	9.715E+02	Analog	0.30	3
Mg	26	45	2	13321.033	ppb	1.05	1,151,981.59	1.678E+01	Analog	0.30	3
Al	27	45	2	3.612	ppb	10.92	778.51	1.132E-02	Pulse	0.30	3
K	39	45	2	3739.741	ppb	0.78	1,018,767.95	1.484E+01	Pulse	0.30	3
Ca	44	45	3	65785.624	ppb	0.25	62,427,424.63	2.992E+01	Analog	0.30	3
V	51	45	2	0.505	ppb	5.78	2,414.72	3.518E-02	Pulse	0.30	3
Cr	52	45	2	1.407	ppb	3.87	8,026.72	1.169E-01	Pulse	0.30	3
OLR Mn	55	45	2	5347.887	ppb	1.10	13,921,745.47	2.028E+02	Analog	0.30	3
Fe	56	45	2	3460.590	ppb	1.34	14,859,234.23	2.164E+02	Analog	0.30	3
Co	59	45	2	0.646	ppb	0.58	5,719.48	8.329E-02	Pulse	0.30	3
Ni	60	72	2	5.730	ppb	2.47	14,252.34	3.090E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,705.37	3.699E-02	Pulse	0.30	3
Zn	66	72	2	4.444	ppb	5.90	6,007.46	1.303E-01	Pulse	0.30	3
As	75	72	2	78.785	ppb	0.61	45,866.68	9.947E-01	Pulse	0.75	3
Se	78	72	1	0.033	ppb	34.16	7.78	1.731E-04	Pulse	0.30	3
Mo	95	103	2	96.394	ppb	0.26	272,251.99	2.252E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-945.11	-3.527E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-13,448.11	-4.727E-03	Pulse	0.30	3
Sb	121	115	3	0.026	ppb	7.75	856.73	3.012E-04	Pulse	0.30	3
Ba	137	159	3	461.052	ppb	0.56	2,966,606.36	6.809E-01	Analog	0.30	3
Tl	205	209	3	0.014	ppb	7.84	1,595.70	6.256E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-23,948.18	-9.389E-03	Pulse	0.30	3
U	238	209	3	9.701	ppb	0.12	644,960.66	2.529E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,324,045.04	1.86	64.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	68,674.49	2.80	83.4	Pulse	0.30	3
3	Sc	45	2,086,169.38	0.51	91.7	Analog	0.30	3
1	Ge	72	45,014.38	1.43	86.2	Pulse	0.30	3
2	Ge	72	46,110.56	1.90	91.5	Pulse	0.30	3
2	Rh	103	1,209,059.34	1.92	83.1	Analog	0.30	3
3	Rh	103	2,679,217.46	0.97	84.9	Analog	0.30	3
3	In	115	2,845,166.98	0.62	93.6	Analog	0.30	3
3	Tb	159	4,356,714.80	0.56	94.7	Analog	0.30	3
3	Bi	209	2,550,697.76	0.29	89.4	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0511078.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:44
Sample Name	N019610-013B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	38.89	2.866E-05	Pulse	0.30	3
B	11	6	3	179.519	ppb	1.06	1,037,660.16	7.647E-01	Analog	0.30	3
Na	23	45	2	67225.435	ppb	1.17	70,040,356.18	9.831E+02	Analog	0.30	3
Mg	26	45	2	13540.763	ppb	0.93	1,215,093.84	1.705E+01	Analog	0.30	3
Al	27	45	2	2.203	ppb	8.23	546.63	7.674E-03	Pulse	0.30	3
K	39	45	2	3778.317	ppb	0.35	1,067,918.18	1.499E+01	Pulse	0.30	3
Ca	44	45	3	66600.265	ppb	0.62	65,358,634.03	3.030E+01	Analog	0.30	3
V	51	45	2	0.501	ppb	1.22	2,489.18	3.493E-02	Pulse	0.30	3
Cr	52	45	2	1.379	ppb	1.72	8,187.72	1.149E-01	Pulse	0.30	3
OLR Mn	55	45	2	5436.705	ppb	0.81	14,686,697.40	2.061E+02	Analog	0.30	3
Fe	56	45	2	3517.069	ppb	1.30	15,670,677.27	2.200E+02	Analog	0.30	3
Co	59	45	2	0.641	ppb	0.22	5,887.14	8.262E-02	Pulse	0.30	3
Ni	60	72	2	5.889	ppb	1.40	15,104.64	3.173E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,293.00	2.714E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,312.04	2.759E-02	Pulse	0.30	3
As	75	72	2	80.337	ppb	1.15	48,286.29	1.014E+00	Pulse	0.75	3
Se	78	72	1	0.007	ppb	251.99	3.33	7.101E-05	Pulse	0.30	3
Mo	95	103	2	98.540	ppb	0.48	286,492.49	2.302E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-988.49	-3.588E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-14,098.75	-4.826E-03	Pulse	0.30	3
Sb	121	115	3	0.032	ppb	3.64	995.63	3.408E-04	Pulse	0.30	3
Ba	137	159	3	468.307	ppb	0.24	3,094,315.35	6.917E-01	Analog	0.30	3
Tl	205	209	3	0.011	ppb	11.30	1,502.36	5.736E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-25,496.86	-9.735E-03	Pulse	0.30	3
U	238	209	3	9.730	ppb	0.38	664,236.21	2.536E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,356,934.00	0.44	66.0	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	71,258.11	2.22	86.6	Pulse	0.30	3
3	Sc	45	2,157,443.02	0.91	94.9	Analog	0.30	3
1	Ge	72	47,146.85	0.90	90.3	Pulse	0.30	3
2	Ge	72	47,609.21	1.77	94.5	Pulse	0.30	3
2	Rh	103	1,244,511.70	1.82	85.5	Analog	0.30	3
3	Rh	103	2,755,113.26	0.35	87.3	Analog	0.30	3
3	In	115	2,921,251.32	0.16	96.1	Analog	0.30	3
3	Tb	159	4,473,866.32	0.95	97.2	Analog	0.30	3
3	Bi	209	2,619,092.98	0.39	91.8	Analog	0.30	3

Quantitation Report

File Name	A0511079.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:50
Sample Name	N019610-014B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	33.34	2.593E-05	Pulse	0.30	3
B	11	6	3	191.954	ppb	1.66	1,050,157.72	8.171E-01	Analog	0.30	3
Na	23	45	2	77648.324	ppb	1.06	77,502,305.51	1.135E+03	Analog	0.30	3
Mg	26	45	2	12065.984	ppb	0.57	1,037,436.45	1.520E+01	Pulse	0.30	3
Al	27	45	2	3.062	ppb	5.01	675.48	9.897E-03	Pulse	0.30	3
K	39	45	2	3095.436	ppb	1.23	841,376.77	1.233E+01	Pulse	0.30	3
Ca	44	45	3	71136.933	ppb	0.14	62,448,144.07	3.236E+01	Analog	0.30	3
V	51	45	2	6.089	ppb	1.62	23,134.63	3.389E-01	Pulse	0.30	3
OLR Cr	52	45	2	283.688	ppb	0.50	1,428,731.89	2.093E+01	Analog	0.30	3
Mn	55	45	2	2.823	ppb	2.00	7,516.23	1.101E-01	Pulse	0.30	3
Fe	56	45	2	4.033	ppb	3.12	19,050.76	2.790E-01	Pulse	0.30	3
Co	59	45	2	0.020	ppb	22.67	203.55	2.978E-03	Pulse	0.30	3
Ni	60	72	2	0.763	ppb	9.08	2,279.59	4.993E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,545.46	5.577E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	742.87	1.627E-02	Pulse	0.30	3
As	75	72	2	0.899	ppb	3.94	528.90	1.158E-02	Pulse	0.75	3
Se	78	72	1	0.304	ppb	48.24	56.67	1.228E-03	Pulse	0.30	3
Mo	95	103	2	3.644	ppb	0.17	10,289.28	8.542E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-812.29	-3.153E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-15,786.81	-5.773E-03	Pulse	0.30	3
Sb	121	115	3	0.022	ppb	28.46	737.83	2.699E-04	Pulse	0.30	3
Ba	137	159	3	70.918	ppb	0.59	443,090.83	1.048E-01	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	6.53	1,362.34	5.548E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-30,689.44	-1.250E-02	Pulse	0.30	3
U	238	209	3	16.890	ppb	0.69	1,080,882.68	4.402E-01	Mix	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,285,303.20	0.13	62.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	68,268.17	0.97	82.9	Pulse	0.30	3
3	Sc	45	1,929,910.27	0.92	84.9	Analog	0.30	3
1	Ge	72	46,236.42	1.11	88.5	Pulse	0.30	3
2	Ge	72	45,671.63	1.67	90.6	Pulse	0.30	3
2	Rh	103	1,204,579.05	1.93	82.8	Analog	0.30	3
3	Rh	103	2,577,242.51	1.12	81.6	Analog	0.30	3
3	In	115	2,734,718.11	0.45	90.0	Analog	0.30	3
3	Tb	159	4,228,063.90	0.78	91.9	Analog	0.30	3
3	Bi	209	2,455,429.70	0.42	86.0	Analog	0.30	3

Quantitation Report

File Name	A0511080.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 16:54
Sample Name	N019610-015B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	30.32	85.56	6.853E-05	Pulse	0.30	3
B	11	6	3	206.944	ppb	1.63	1,099,456.60	8.802E-01	Analog	0.30	3
Na	23	45	2	86463.891	ppb	1.11	81,256,883.23	1.264E+03	Analog	0.30	3
Mg	26	45	2	16991.946	ppb	0.92	1,375,711.35	2.140E+01	Analog	0.30	3
Al	27	45	2	79.207	ppb	4.00	13,306.78	2.069E-01	Pulse	0.30	3
K	39	45	2	4000.110	ppb	0.83	1,019,064.16	1.585E+01	Pulse	0.30	3
Ca	44	45	3	97714.666	ppb	0.21	83,388,837.65	4.444E+01	Analog	0.30	3
V	51	45	2	5.533	ppb	2.12	19,839.24	3.087E-01	Pulse	0.30	3
OLR Cr	52	45	2	1281.077	ppb	1.25	6,071,986.72	9.446E+01	Analog	0.30	3
Mn	55	45	2	13.938	ppb	0.28	34,169.04	5.315E-01	Pulse	0.30	3
Fe	56	45	2	104.816	ppb	0.81	423,073.41	6.581E+00	Pulse	0.30	3
Co	59	45	2	0.089	ppb	10.37	759.72	1.181E-02	Pulse	0.30	3
Ni	60	72	2	1.023	ppb	6.95	2,680.59	6.352E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,917.85	4.538E-02	Pulse	0.30	3
Zn	66	72	2	0.802	ppb	9.54	1,990.57	4.713E-02	Pulse	0.30	3
As	75	72	2	0.888	ppb	4.12	483.00	1.144E-02	Pulse	0.75	3
Se	78	72	1	0.160	ppb	39.80	27.78	6.649E-04	Pulse	0.30	3
Mo	95	103	2	2.580	ppb	2.06	6,793.95	6.058E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,079.76	-4.231E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-17,098.69	-6.268E-03	Pulse	0.30	3
Sb	121	115	3	0.038	ppb	16.94	1,038.97	3.809E-04	Pulse	0.30	3
Ba	137	159	3	68.232	ppb	0.73	428,968.68	1.008E-01	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	15.81	1,470.13	5.889E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-30,650.37	-1.227E-02	Pulse	0.30	3
U	238	209	3	38.725	ppb	0.25	2,520,277.99	1.009E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,249,029.27	0.68	60.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	64,284.98	1.48	78.1	Pulse	0.30	3
3	Sc	45	1,876,289.66	1.20	82.5	Analog	0.30	3
1	Ge	72	41,866.92	0.99	80.1	Pulse	0.30	3
2	Ge	72	42,230.02	1.85	83.8	Pulse	0.30	3
2	Rh	103	1,121,396.40	1.24	77.1	Mix	0.30	3
3	Rh	103	2,552,324.67	1.02	80.8	Analog	0.30	3
3	In	115	2,727,913.29	0.48	89.8	Analog	0.30	3
3	Tb	159	4,254,385.77	0.61	92.4	Analog	0.30	3
3	Bi	209	2,497,214.01	0.76	87.5	Analog	0.30	3

Quantitation Report

File Name	A0511081.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:00
Sample Name	N019611-~~001~~B,SAMP,1
Sample Type	Sample -002B
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	1.075E-05	Pulse	0.30	3
B	11	6	3	348.376	ppb	0.32	1,831,290.48	1.476E+00	Analog	0.30	3
Na	23	45	2	75308.180	ppb	0.53	73,045,432.80	1.101E+03	Analog	0.30	3
Mg	26	45	2	14527.016	ppb	0.69	1,213,875.17	1.830E+01	Analog	0.30	3
Al	27	45	2	5.301	ppb	6.03	1,041.25	1.569E-02	Pulse	0.30	3
K	39	45	2	3955.381	ppb	1.31	1,039,964.88	1.568E+01	Pulse	0.30	3
Ca	44	45	3	85095.010	ppb	0.77	72,820,057.80	3.871E+01	Analog	0.30	3
V	51	45	2	4.912	ppb	3.27	18,231.82	2.749E-01	Pulse	0.30	3
Cr	52	45	2	312.308	ppb	0.89	1,528,487.49	2.304E+01	Analog	0.30	3
Mn	55	45	2	1.077	ppb	10.69	2,909.76	4.391E-02	Pulse	0.30	3
Fe	56	45	2	5.095	ppb	2.10	22,914.00	3.454E-01	Pulse	0.30	3
Co	59	45	2	0.017	ppb	39.50	174.77	2.624E-03	Pulse	0.30	3
Ni	60	72	2	0.868	ppb	7.49	2,433.16	5.544E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,890.55	6.588E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,229.64	2.804E-02	Pulse	0.30	3
As	75	72	2	0.625	ppb	6.56	355.93	8.113E-03	Pulse	0.75	3
Se	78	72	1	0.133	ppb	46.15	24.45	5.611E-04	Pulse	0.30	3
Mo	95	103	2	2.060	ppb	2.40	5,683.46	4.842E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-964.84	-3.763E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-14,911.61	-5.519E-03	Pulse	0.30	3
Sb	121	115	3	0.030	ppb	5.17	885.62	3.278E-04	Pulse	0.30	3
Ba	137	159	3	103.153	ppb	0.70	643,302.75	1.524E-01	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	0.59	1,453.46	5.861E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-29,944.07	-1.207E-02	Pulse	0.30	3
U	238	209	3	27.606	ppb	1.52	1,784,174.16	7.195E-01	Analog	0.30	3

OLR

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,240,804.82	0.51	60.3	Analog	0.30	3

for 5/19/2016

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	66,340.58	1.83	80.6	Pulse	0.30	3
3	Sc	45	1,881,522.00	1.53	82.7	Analog	0.30	3
1	Ge	72	43,719.43	1.21	83.7	Pulse	0.30	3
2	Ge	72	43,884.31	1.45	87.1	Pulse	0.30	3
2	Rh	103	1,173,606.92	1.93	80.7	Analog	0.30	3
3	Rh	103	2,564,041.49	0.74	81.2	Analog	0.30	3
3	In	115	2,701,883.99	0.79	88.9	Analog	0.30	3
3	Tb	159	4,221,287.47	1.14	91.7	Analog	0.30	3
3	Bi	209	2,479,970.38	0.48	86.9	Analog	0.30	3

Quantitation Report

File Name	A0511082.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:06
Sample Name	N019611-~~002B~~,SAMP,1
Sample Type	Sample -001B
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	9.049E-06	Pulse	0.30	3
B	11	6	3	140.724	ppb	0.68	738,716.56	6.013E-01	Pulse	0.30	3
Na	23	45	2	54463.326	ppb	1.36	52,436,921.44	7.967E+02	Analog	0.30	3
Mg	26	45	2	10285.813	ppb	1.28	852,687.46	1.296E+01	Pulse	0.30	3
Al	27	45	2	4.489	ppb	6.73	893.92	1.359E-02	Pulse	0.30	3
K	39	45	2	5098.733	ppb	0.50	1,325,471.69	2.013E+01	Analog	0.30	3
Ca	44	45	3	64832.078	ppb	0.35	57,323,066.37	2.949E+01	Analog	0.30	3
V	51	45	2	2.683	ppb	1.39	10,115.75	1.537E-01	Pulse	0.30	3
Cr	52	45	2	178.612	ppb	0.98	867,575.19	1.318E+01	Pulse	0.30	3
OLR Mn	55	45	2	1156.642	ppb	1.05	2,886,646.91	4.386E+01	Analog	0.30	3
Fe	56	45	2	30.763	ppb	1.02	128,379.74	1.950E+00	Pulse	0.30	3
Co	59	45	2	0.206	ppb	2.79	1,767.96	2.686E-02	Pulse	0.30	3
Ni	60	72	2	1.209	ppb	5.17	3,227.02	7.322E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,475.28	3.347E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,065.23	2.417E-02	Pulse	0.30	3
As	75	72	2	33.235	ppb	0.93	18,500.57	4.198E-01	Pulse	0.75	3
Se	78	72	1	0.099	ppb	81.54	18.89	4.283E-04	Pulse	0.30	3
Mo	95	103	2	23.659	ppb	2.10	65,095.10	5.529E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,062.20	-4.154E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-10,636.64	-3.923E-03	Pulse	0.30	3
Sb	121	115	3	0.054	ppb	3.88	1,347.89	4.971E-04	Pulse	0.30	3
Ba	137	159	3	140.752	ppb	0.66	869,659.00	2.079E-01	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	31.46	1,513.47	6.135E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-21,658.50	-8.783E-03	Pulse	0.30	3
U	238	209	3	7.031	ppb	0.59	451,948.41	1.833E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,228,564.58	0.29	59.8	Analog	0.30	3

TSM 5/19/2016

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	65,828.61	1.98	80.0	Pulse	0.30	3
3	Sc	45	1,943,767.68	0.86	85.5	Analog	0.30	3
1	Ge	72	44,035.80	0.29	84.3	Pulse	0.30	3
2	Ge	72	44,073.82	0.11	87.5	Pulse	0.30	3
2	Rh	103	1,177,913.98	3.95	81.0	Analog	0.30	3
3	Rh	103	2,557,314.06	0.26	81.0	Analog	0.30	3
3	In	115	2,711,692.90	0.70	89.2	Analog	0.30	3
3	Tb	159	4,182,600.42	0.64	90.9	Analog	0.30	3
3	Bi	209	2,466,001.82	0.47	86.4	Analog	0.30	3

Quantitation Report

File Name	A0511083.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:11
Sample Name	CCV5,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	18.795	ppb	0.98	146,852.49	1.065E-01	Pulse	0.30	3
B	11	6	3	196.481	ppb	1.45	1,152,353.52	8.361E-01	Analog	0.30	3
Na	23	45	2	326.824	ppb	3.72	431,020.42	6.092E+00	Pulse	0.30	3
Mg	26	45	2	191.803	ppb	1.44	17,212.70	2.432E-01	Pulse	0.30	3
Al	27	45	2	20.445	ppb	5.14	3,884.44	5.488E-02	Pulse	0.30	3
K	39	45	2	225.559	ppb	2.49	80,581.52	1.139E+00	Pulse	0.30	3
Ca	44	45	3	236.102	ppb	1.69	219,245.88	1.168E-01	Pulse	0.30	3
V	51	45	2	20.401	ppb	1.51	79,072.88	1.117E+00	Pulse	0.30	3
Cr	52	45	2	19.378	ppb	1.52	102,029.14	1.442E+00	Pulse	0.30	3
Mn	55	45	2	20.366	ppb	0.47	54,867.40	7.752E-01	Pulse	0.30	3
Fe	56	45	2	21.278	ppb	1.44	96,050.30	1.357E+00	Pulse	0.30	3
Co	59	45	2	19.787	ppb	1.50	179,660.35	2.539E+00	Pulse	0.30	3
Ni	60	72	2	17.767	ppb	2.65	45,941.91	9.369E-01	Pulse	0.30	3
Cu	63	72	2	17.119	ppb	0.94	129,510.62	2.641E+00	Pulse	0.30	3
Zn	66	72	2	17.957	ppb	2.68	21,530.24	4.391E-01	Pulse	0.30	3
As	75	72	2	19.269	ppb	1.56	11,939.57	2.435E-01	Pulse	0.75	3
Se	78	72	1	18.714	ppb	5.33	3,619.44	7.288E-02	Pulse	0.30	3
Mo	95	103	2	20.416	ppb	0.19	63,987.22	4.772E-02	Pulse	0.30	3
Ag	107	103	3	19.150	ppb	0.26	473,082.01	1.615E-01	Pulse	0.30	3
Cd	111	115	3	19.120	ppb	0.52	108,650.63	3.588E-02	Pulse	0.30	3
Sb	121	115	3	20.099	ppb	0.80	423,633.95	1.399E-01	Pulse	0.30	3
Ba	137	159	3	21.857	ppb	1.88	146,930.59	3.235E-02	Pulse	0.30	3
Tl	205	209	3	19.992	ppb	1.05	968,273.53	3.390E-01	Pulse	0.30	3
Pb	208	209	3	20.138	ppb	0.75	1,336,491.38	4.680E-01	Pulse	0.30	3
U	238	209	3	19.629	ppb	0.92	1,461,048.30	5.116E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,378,258.48	0.51	67.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	70,774.48	1.60	86.0	Pulse	0.30	3
3	Sc	45	1,877,828.01	1.15	82.6	Analog	0.30	3
1	Ge	72	49,665.59	0.17	95.1	Pulse	0.30	3
2	Ge	72	49,042.23	1.01	97.3	Pulse	0.30	3
2	Rh	103	1,340,943.07	0.49	92.2	Analog	0.30	3
3	Rh	103	2,928,490.06	0.42	92.8	Analog	0.30	3
3	In	115	3,028,412.40	0.63	99.6	Analog	0.30	3
3	Tb	159	4,542,307.54	0.32	98.7	Analog	0.30	3
3	Bi	209	2,855,970.10	0.46	100.1	Analog	0.30	3

Quantitation Report

File Name	A0511084.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:17
Sample Name	CCB5,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	55.56	4.240E-05	Pulse	0.30	3
B	11	6	3	8.163	ppb	2.48	56,282.22	4.298E-02	Pulse	0.30	3
Na	23	45	2	43.815	ppb	9.60	131,705.98	1.959E+00	Pulse	0.30	3
Mg	26	45	2	0.309	ppb	57.97	138.90	2.066E-03	Pulse	0.30	3
Al	27	45	2	0.014	ppb	2211.02	134.44	2.010E-03	Pulse	0.30	3
K	39	45	2	13.314	ppb	23.08	20,939.36	3.115E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	10,897.35	5.947E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	234.46	3.489E-03	Pulse	0.30	3
Cr	52	45	2	0.037	ppb	26.06	1,072.16	1.595E-02	Pulse	0.30	3
Mn	55	45	2	0.016	ppb	76.95	246.83	3.675E-03	Pulse	0.30	3
Fe	56	45	2	0.050	ppb	35.91	2,010.97	2.991E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	53.05	40.97	6.079E-04	Pulse	0.30	3
Ni	60	72	2	0.085	ppb	5.36	693.22	1.457E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,227.24	2.580E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	515.01	1.083E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	9.78	2.051E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.084	ppb	10.99	300.02	2.274E-04	Pulse	0.30	3
Ag	107	103	3	0.757	ppb	13.39	19,961.04	6.952E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	313.72	1.066E-04	Pulse	0.30	3
Sb	121	115	3	0.037	ppb	5.15	1,105.64	3.758E-04	Pulse	0.30	3
Ba	137	159	3	0.013	ppb	53.82	395.92	8.822E-05	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	788.94	2.821E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	3,387.99	1.211E-03	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.005	ppb	24.38	496.92	1.775E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,309,682.54	0.21	63.7	Analog	0.30	3
2	Sc	45	67,264.34	2.12	81.7	Pulse	0.30	3
3	Sc	45	1,832,467.30	0.92	80.6	Analog	0.30	3
1	Ge	72	46,522.67	0.31	89.1	Pulse	0.30	3
2	Ge	72	47,582.65	1.26	94.4	Pulse	0.30	3
2	Rh	103	1,319,261.48	0.39	90.7	Analog	0.30	3
3	Rh	103	2,872,668.19	0.61	91.0	Analog	0.30	3
3	In	115	2,941,865.65	0.67	96.8	Analog	0.30	3
3	Tb	159	4,485,334.10	0.71	97.5	Analog	0.30	3
3	Bi	209	2,797,184.47	0.67	98.0	Analog	0.30	3

Quantitation Report

File Name	A0511085.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:22
Sample Name	N019611-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	20.00	1.686E-05	Pulse	0.30	3
B	11	6	3	346.802	ppb	1.95	1,742,048.83	1.469E+00	Analog	0.30	3
Na	23	45	2	75441.860	ppb	1.72	68,392,494.54	1.103E+03	Analog	0.30	3
Mg	26	45	2	14540.257	ppb	1.21	1,135,534.75	1.831E+01	Analog	0.30	3
Al	27	45	2	3.222	ppb	14.96	639.03	1.031E-02	Pulse	0.30	3
K	39	45	2	3984.745	ppb	1.70	979,151.90	1.579E+01	Pulse	0.30	3
Ca	44	45	3	85287.627	ppb	0.21	69,846,258.96	3.879E+01	Analog	0.30	3
V	51	45	2	5.018	ppb	2.36	17,397.53	2.806E-01	Pulse	0.30	3
OLR Cr	52	45	2	314.045	ppb	2.12	1,436,200.43	2.317E+01	Analog	0.30	3
Mn	55	45	2	1.269	ppb	2.25	3,172.47	5.117E-02	Pulse	0.30	3
Fe	56	45	2	3.414	ppb	7.28	14,896.42	2.403E-01	Pulse	0.30	3
Co	59	45	2	0.020	ppb	27.04	179.29	2.902E-03	Pulse	0.30	3
Ni	60	72	2	0.939	ppb	5.84	2,492.89	5.911E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,681.48	6.363E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	904.70	2.146E-02	Pulse	0.30	3
As	75	72	2	0.639	ppb	5.06	349.50	8.291E-03	Pulse	0.75	3
Se	78	72	1	0.050	ppb	79.73	10.00	2.381E-04	Pulse	0.30	3
Mo	95	103	2	2.105	ppb	3.51	5,505.61	4.947E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-993.14	-3.947E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-14,156.77	-5.264E-03	Pulse	0.30	3
Sb	121	115	3	0.038	ppb	9.46	1,032.29	3.838E-04	Pulse	0.30	3
Ba	137	159	3	102.911	ppb	0.35	634,454.77	1.520E-01	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	950.08	3.846E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-26,963.86	-1.091E-02	Pulse	0.30	3
U	238	209	3	27.351	ppb	0.46	1,760,998.26	7.128E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,185,717.95	0.55	57.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	62,020.60	2.72	75.3	Pulse	0.30	3
3	Sc	45	1,800,497.18	0.62	79.2	Analog	0.30	3
1	Ge	72	41,747.56	1.68	79.9	Pulse	0.30	3
2	Ge	72	42,161.99	1.48	83.7	Pulse	0.30	3
2	Rh	103	1,112,987.56	0.63	76.5	Mix	0.30	3
3	Rh	103	2,516,576.72	0.53	79.7	Analog	0.30	3
3	In	115	2,689,528.23	0.14	88.5	Analog	0.30	3
3	Tb	159	4,172,787.47	0.26	90.7	Analog	0.30	3
3	Bi	209	2,470,471.49	0.61	86.6	Analog	0.30	3

Quantitation Report

File Name	A0511086.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:29
Sample Name	N019611-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.012	ppb	31.94	141.12	1.153E-04	Pulse	0.30	3
B	11	6	3	331.532	ppb	0.82	1,719,950.65	1.405E+00	Analog	0.30	3
Na	23	45	2	128092.083	ppb	0.37	124,647,400.36	1.872E+03	Analog	0.30	3
Mg	26	45	2	11131.605	ppb	0.22	933,542.68	1.402E+01	Pulse	0.30	3
Al	27	45	2	321.112	ppb	1.52	55,457.57	8.329E-01	Pulse	0.30	3
K	39	45	2	2319.634	ppb	0.80	619,352.14	9.301E+00	Pulse	0.30	3
Ca	44	45	3	67297.374	ppb	0.32	57,562,379.70	3.061E+01	Analog	0.30	3
V	51	45	2	6.522	ppb	2.69	24,137.24	3.625E-01	Pulse	0.30	3
Cr	52	45	2	1.706	ppb	2.92	9,255.69	1.390E-01	Pulse	0.30	3
Mn	55	45	2	8.651	ppb	9.12	22,049.80	3.310E-01	Pulse	0.30	3
Fe	56	45	2	425.994	ppb	0.66	1,775,553.49	2.667E+01	Analog	0.30	3
Co	59	45	2	0.185	ppb	7.08	1,606.05	2.412E-02	Pulse	0.30	3
Ni	60	72	2	0.506	ppb	7.34	1,651.60	3.655E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,672.66	5.916E-02	Pulse	0.30	3
Zn	66	72	2	1.081	ppb	3.00	2,418.19	5.351E-02	Pulse	0.30	3
As	75	72	2	2.528	ppb	4.18	1,452.40	3.214E-02	Pulse	0.75	3
Se	78	72	1	0.301	ppb	35.24	53.33	1.215E-03	Pulse	0.30	3
Mo	95	103	2	1.187	ppb	3.32	3,283.82	2.804E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-655.55	-2.560E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-24,903.87	-9.074E-03	Pulse	0.30	3
Sb	121	115	3	0.031	ppb	7.30	922.29	3.360E-04	Pulse	0.30	3
Ba	137	159	3	46.160	ppb	0.52	288,803.94	6.824E-02	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	22.14	1,489.03	6.006E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-37,065.67	-1.495E-02	Pulse	0.30	3
U	238	209	3	16.922	ppb	1.11	1,093,311.36	4.410E-01	Mix	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,224,248.87	0.55	59.5	Analog	0.30	3
2	Sc	45	66,584.62	0.86	80.9	Pulse	0.30	3
3	Sc	45	1,880,418.81	1.04	82.7	Analog	0.30	3
1	Ge	72	43,798.72	1.09	83.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	45,189.94	0.63	89.7	Pulse	0.30	3
2	Rh	103	1,171,010.75	1.05	80.5	Analog	0.30	3
3	Rh	103	2,561,191.72	0.41	81.1	Analog	0.30	3
3	In	115	2,744,613.77	0.76	90.3	Analog	0.30	3
3	Tb	159	4,232,434.66	0.20	92.0	Analog	0.30	3
3	Bi	209	2,479,060.40	0.85	86.9	Analog	0.30	3

Quantitation Report

File Name	A0511087.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:34
Sample Name	N019611-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	90.09	92.23	7.084E-05	Pulse	0.30	3
B	11	6	3	213.628	ppb	1.12	1,184,992.90	9.083E-01	Analog	0.30	3
Na	23	45	2	92465.432	ppb	1.07	93,026,644.17	1.352E+03	Analog	0.30	3
Mg	26	45	2	17669.262	ppb	1.56	1,531,399.13	2.225E+01	Analog	0.30	3
Al	27	45	2	115.895	ppb	5.87	20,763.87	3.019E-01	Pulse	0.30	3
K	39	45	2	3905.492	ppb	1.26	1,065,536.68	1.548E+01	Pulse	0.30	3
Ca	44	45	3	100717.171	ppb	0.42	92,019,297.52	4.581E+01	Analog	0.30	3
V	51	45	2	4.977	ppb	1.99	19,159.49	2.784E-01	Pulse	0.30	3
OLR Cr	52	45	2	367.588	ppb	1.89	1,865,685.64	2.711E+01	Analog	0.30	3
Mn	55	45	2	4.135	ppb	3.93	10,995.96	1.598E-01	Pulse	0.30	3
Fe	56	45	2	153.147	ppb	0.46	661,005.30	9.603E+00	Pulse	0.30	3
Co	59	45	2	0.108	ppb	7.44	977.86	1.422E-02	Pulse	0.30	3
Ni	60	72	2	0.220	ppb	25.04	997.40	2.163E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	785.25	1.700E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,079.70	2.339E-02	Pulse	0.30	3
As	75	72	2	1.177	ppb	3.64	696.77	1.509E-02	Pulse	0.75	3
Se	78	72	1	0.224	ppb	68.51	41.11	9.145E-04	Pulse	0.30	3
Mo	95	103	2	1.853	ppb	1.30	5,316.66	4.359E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,169.25	-4.285E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,403.72	-6.670E-03	Pulse	0.30	3
Sb	121	115	3	0.081	ppb	9.44	1,989.09	6.836E-04	Pulse	0.30	3
Ba	137	159	3	66.004	ppb	0.63	438,572.82	9.754E-02	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	23.26	1,298.99	4.920E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-34,992.15	-1.325E-02	Pulse	0.30	3
U	238	209	3	36.021	ppb	0.28	2,478,699.33	9.387E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,304,638.78	1.19	63.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	68,834.00	2.61	83.6	Pulse	0.30	3
3	Sc	45	2,008,724.19	0.82	88.3	Analog	0.30	3
1	Ge	72	44,910.43	1.17	86.0	Pulse	0.30	3
2	Ge	72	46,180.59	1.48	91.6	Pulse	0.30	3
2	Rh	103	1,219,639.76	1.06	83.8	Analog	0.30	3
3	Rh	103	2,728,072.15	1.14	86.4	Analog	0.30	3
3	In	115	2,909,111.39	0.99	95.7	Analog	0.30	3
3	Tb	159	4,496,185.91	1.11	97.7	Analog	0.30	3
3	Bi	209	2,640,398.40	0.93	92.5	Analog	0.30	3

Quantitation Report

File Name	A0511088.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:40
Sample Name	N019611-006B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	37.78	2.906E-05	Pulse	0.30	3
B	11	6	3	148.436	ppb	2.02	816,486.36	6.338E-01	Pulse	0.30	3
Na	23	45	2	50348.582	ppb	0.42	51,400,755.35	7.366E+02	Analog	0.30	3
Mg	26	45	2	9527.092	ppb	0.78	837,325.30	1.200E+01	Pulse	0.30	3
Al	27	45	2	3.970	ppb	10.08	854.33	1.224E-02	Pulse	0.30	3
K	39	45	2	4566.637	ppb	0.50	1,260,274.70	1.806E+01	Analog	0.30	3
Ca	44	45	3	49833.064	ppb	0.98	45,429,317.66	2.267E+01	Analog	0.30	3
V	51	45	2	4.564	ppb	1.94	17,861.39	2.560E-01	Pulse	0.30	3
Cr	52	45	2	0.953	ppb	1.90	5,828.50	8.353E-02	Pulse	0.30	3
Mn	55	45	2	14.401	ppb	0.84	38,316.03	5.491E-01	Pulse	0.30	3
Fe	56	45	2	2.200	ppb	1.59	11,471.11	1.644E-01	Pulse	0.30	3
Co	59	45	2	0.007	ppb	23.17	93.86	1.344E-03	Pulse	0.30	3
Ni	60	72	2	0.282	ppb	15.94	1,165.23	2.483E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,577.73	3.357E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	454.90	9.696E-03	Pulse	0.30	3
As	75	72	2	0.955	ppb	8.12	576.62	1.228E-02	Pulse	0.75	3
Se	78	72	1	0.209	ppb	18.14	38.89	8.566E-04	Pulse	0.30	3
Mo	95	103	2	3.539	ppb	0.68	10,204.74	8.297E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,014.85	-3.733E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-10,422.59	-3.596E-03	Pulse	0.30	3
Sb	121	115	3	0.017	ppb	6.19	693.38	2.391E-04	Pulse	0.30	3
Ba	137	159	3	90.543	ppb	1.01	592,993.80	1.338E-01	Pulse	0.30	3
Tl	205	209	3	0.014	ppb	23.51	1,624.60	6.196E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-21,033.78	-8.016E-03	Pulse	0.30	3
U	238	209	3	9.032	ppb	1.29	617,766.11	2.354E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,288,626.56	2.13	62.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	69,781.17	0.73	84.8	Pulse	0.30	3
3	Sc	45	2,004,116.34	1.63	88.1	Analog	0.30	3
1	Ge	72	45,372.77	0.85	86.9	Pulse	0.30	3
2	Ge	72	46,967.32	1.49	93.2	Pulse	0.30	3
2	Rh	103	1,229,967.84	0.15	84.5	Analog	0.30	3
3	Rh	103	2,718,486.42	0.83	86.1	Analog	0.30	3
3	In	115	2,898,964.20	1.23	95.4	Analog	0.30	3
3	Tb	159	4,432,794.42	0.91	96.3	Analog	0.30	3
3	Bi	209	2,624,278.94	1.46	92.0	Analog	0.30	3

Quantitation Report

File Name	A0511089.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:46
Sample Name	N019611-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	4.44	3.691E-06	Pulse	0.30	3
B	11	6	3	111.947	ppb	0.62	576,804.21	4.801E-01	Pulse	0.30	3
Na	23	45	2	49832.666	ppb	1.03	46,883,532.63	7.291E+02	Analog	0.30	3
Mg	26	45	2	7694.068	ppb	1.23	623,165.00	9.691E+00	Pulse	0.30	3
Al	27	45	2	3.786	ppb	7.79	756.79	1.177E-02	Pulse	0.30	3
K	39	45	2	4135.730	ppb	0.99	1,053,346.28	1.638E+01	Pulse	0.30	3
Ca	44	45	3	50752.763	ppb	0.48	43,584,010.46	2.309E+01	Analog	0.30	3
V	51	45	2	4.840	ppb	0.66	17,426.47	2.710E-01	Pulse	0.30	3
Cr	52	45	2	251.010	ppb	1.59	1,190,888.47	1.852E+01	Analog	0.30	3
Mn	55	45	2	9.413	ppb	2.92	23,141.58	3.600E-01	Pulse	0.30	3
Fe	56	45	2	1.986	ppb	2.89	9,711.30	1.510E-01	Pulse	0.30	3
Co	59	45	2	0.413	ppb	4.41	3,432.65	5.335E-02	Pulse	0.30	3
Ni	60	72	2	3.271	ppb	4.21	7,892.13	1.808E-01	Pulse	0.30	3
Cu	63	72	2	0.152	ppb	29.41	4,378.19	1.003E-01	Pulse	0.30	3
Zn	66	72	2	0.324	ppb	47.04	1,579.86	3.620E-02	Pulse	0.30	3
As	75	72	2	3.318	ppb	4.60	1,838.71	4.211E-02	Pulse	0.75	3
Se	78	72	1	1.119	ppb	12.40	193.34	4.400E-03	Pulse	0.30	3
Mo	95	103	2	6.473	ppb	0.61	17,471.23	1.515E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-887.04	-3.492E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-9,548.88	-3.521E-03	Pulse	0.30	3
Sb	121	115	3	0.177	ppb	2.04	3,661.68	1.350E-03	Pulse	0.30	3
Ba	137	159	3	107.114	ppb	0.71	657,896.30	1.583E-01	Pulse	0.30	3
Tl	205	209	3	0.016	ppb	10.01	1,623.49	6.566E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-19,107.91	-7.727E-03	Pulse	0.30	3
U	238	209	3	31.153	ppb	0.58	2,007,698.75	8.119E-01	Analog	0.30	3

OLR

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,486.33	0.86	58.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	64,311.49	1.96	78.1	Pulse	0.30	3
3	Sc	45	1,887,701.34	0.69	83.0	Analog	0.30	3
1	Ge	72	43,935.55	1.04	84.1	Pulse	0.30	3
2	Ge	72	43,666.08	0.85	86.6	Pulse	0.30	3
2	Rh	103	1,153,128.28	2.25	79.2	Mix	0.30	3
3	Rh	103	2,539,981.33	1.14	80.5	Analog	0.30	3
3	In	115	2,711,971.81	0.15	89.2	Analog	0.30	3
3	Tb	159	4,157,375.46	0.77	90.3	Analog	0.30	3
3	Bi	209	2,472,815.21	0.53	86.7	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0511090.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:51
Sample Name	N019610-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	9.378E-06	Pulse	0.30	3
B	11	6	3	103.754	ppb	0.36	527,606.00	4.456E-01	Pulse	0.30	3
Na	23	45	2	27526.428	ppb	1.18	25,540,748.51	4.033E+02	Analog	0.30	3
Mg	26	45	2	4798.232	ppb	0.84	382,790.52	6.044E+00	Pulse	0.30	3
Al	27	45	2	0.860	ppb	25.04	266.28	4.200E-03	Pulse	0.30	3
K	39	45	2	887.715	ppb	1.25	235,564.65	3.720E+00	Pulse	0.30	3
Ca	44	45	3	29034.783	ppb	0.76	22,647,577.16	1.321E+01	Analog	0.30	3
V	51	45	2	0.901	ppb	2.09	3,589.44	5.669E-02	Pulse	0.30	3
Cr	52	45	2	1.081	ppb	2.23	5,885.47	9.294E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-376.28	-5.936E-03	Pulse	0.30	3
Fe	56	45	2	0.410	ppb	18.42	3,322.26	5.245E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	22.59	3.589E-04	Pulse	0.30	3
Ni	60	72	2	0.201	ppb	10.73	899.30	2.065E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,038.34	2.387E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	600.85	1.381E-02	Pulse	0.30	3
As	75	72	2	0.079	ppb	11.65	53.52	1.228E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	2.552E-05	Pulse	0.30	3
Mo	95	103	2	0.189	ppb	9.36	541.14	4.723E-04	Pulse	0.30	3
Ag	107	103	3	0.082	ppb	3.31	3,235.56	1.283E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-4,869.52	-1.809E-03	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	18986.48	321.13	1.193E-04	Pulse	0.30	3
Ba	137	159	3	5.410	ppb	0.17	32,704.43	8.058E-03	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	461.14	1.876E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-7,829.27	-3.185E-03	Pulse	0.30	3
U	238	209	3	6.633	ppb	0.57	425,022.70	1.729E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,184,086.15	0.70	57.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	63,332.17	1.47	76.9	Pulse	0.30	3
3	Sc	45	1,714,073.34	0.78	75.4	Analog	0.30	3
1	Ge	72	43,462.24	0.36	83.2	Pulse	0.30	3
2	Ge	72	43,537.04	1.73	86.4	Pulse	0.30	3
2	Rh	103	1,144,681.39	2.55	78.7	Analog	0.30	3
3	Rh	103	2,521,760.95	0.97	79.9	Analog	0.30	3
3	In	115	2,691,893.90	1.10	88.6	Analog	0.30	3
3	Tb	159	4,058,572.89	0.65	88.2	Analog	0.30	3
3	Bi	209	2,458,128.09	0.80	86.1	Analog	0.30	3

Quantitation Report

File Name	A0511091.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 17:57
Sample Name	N019610-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.131	ppb	0.90	72,879.77	5.745E-02	Pulse	0.30	3
B	11	6	3	2465.045	ppb	0.38	13,181,808.45	1.039E+01	Analog	0.30	3
Na	23	45	2	128193.103	ppb	0.39	126,628,760.34	1.873E+03	Analog	0.30	3
Mg	26	45	2	22956.167	ppb	0.10	1,954,211.90	2.891E+01	Analog	0.30	3
Al	27	45	2	182.158	ppb	0.42	31,993.32	4.733E-01	Pulse	0.30	3
K	39	45	2	4203.007	ppb	0.48	1,124,991.51	1.664E+01	Mix	0.30	3
Ca	44	45	3	131098.106	ppb	0.18	121,294,980.41	5.962E+01	Analog	0.30	3
V	51	45	2	14.751	ppb	0.18	54,757.65	8.101E-01	Pulse	0.30	3
Cr	52	45	2	14.449	ppb	1.42	72,910.82	1.078E+00	Pulse	0.30	3
Mn	55	45	2	96.025	ppb	0.72	246,282.01	3.644E+00	Pulse	0.30	3
Fe	56	45	2	95.738	ppb	0.05	406,472.16	6.013E+00	Pulse	0.30	3
Co	59	45	2	9.008	ppb	0.67	78,137.80	1.156E+00	Pulse	0.30	3
Ni	60	72	2	8.870	ppb	2.18	21,243.40	4.729E-01	Pulse	0.30	3
Cu	63	72	2	7.526	ppb	0.87	54,126.04	1.205E+00	Pulse	0.30	3
Zn	66	72	2	86.521	ppb	0.79	90,128.62	2.006E+00	Pulse	0.30	3
As	75	72	2	10.406	ppb	2.22	5,913.97	1.316E-01	Pulse	0.75	3
Se	78	72	1	9.644	ppb	10.38	1,632.37	3.758E-02	Pulse	0.30	3
Mo	95	103	2	12.492	ppb	1.00	34,050.45	2.921E-02	Pulse	0.30	3
Ag	107	103	3	0.098	ppb	10.79	3,828.00	1.416E-03	Pulse	0.30	3
Cd	111	115	3	4.522	ppb	0.80	25,473.65	8.728E-03	Pulse	0.30	3
Sb	121	115	3	10.594	ppb	1.23	215,362.69	7.379E-02	Pulse	0.30	3
Ba	137	159	3	138.008	ppb	0.61	918,433.29	2.039E-01	Pulse	0.30	3
Tl	205	209	3	10.127	ppb	0.87	445,366.86	1.719E-01	Pulse	0.30	3
Pb	208	209	3	9.797	ppb	0.37	593,658.84	2.292E-01	Pulse	0.30	3
U	238	209	3	44.094	ppb	0.29	2,976,540.64	1.149E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,268,574.45	1.08	61.7	Analog	0.30	3
2	Sc	45	67,593.12	1.93	82.1	Pulse	0.30	3
3	Sc	45	2,034,314.62	0.66	89.4	Analog	0.30	3
1	Ge	72	43,449.87	1.49	83.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	44,938.46	1.91	89.2	Pulse	0.30	3
2	Rh	103	1,165,657.51	1.82	80.1	Analog	0.30	3
3	Rh	103	2,702,758.36	1.10	85.6	Analog	0.30	3
3	In	115	2,918,722.61	1.16	96.0	Analog	0.30	3
3	Tb	159	4,504,797.99	0.50	97.9	Analog	0.30	3
3	Bi	209	2,590,225.71	0.22	90.8	Analog	0.30	3

Quantitation Report

File Name	A0511092.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:02
Sample Name	N019610-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.062	ppb	0.92	69,420.10	5.706E-02	Pulse	0.30	3
B	11	6	3	2463.353	ppb	0.71	12,631,395.20	1.038E+01	Analog	0.30	3
Na	23	45	2	129975.486	ppb	1.02	120,460,553.76	1.899E+03	Analog	0.30	3
Mg	26	45	2	23313.668	ppb	0.10	1,862,279.16	2.936E+01	Analog	0.30	3
Al	27	45	2	182.320	ppb	0.16	30,046.67	4.737E-01	Pulse	0.30	3
K	39	45	2	4249.971	ppb	0.73	1,067,102.28	1.683E+01	Pulse	0.30	3
Ca	44	45	3	133002.160	ppb	0.99	116,252,650.49	6.049E+01	Analog	0.30	3
V	51	45	2	14.869	ppb	0.23	51,788.54	8.165E-01	Pulse	0.30	3
Cr	52	45	2	14.587	ppb	2.60	69,024.87	1.089E+00	Pulse	0.30	3
Mn	55	45	2	97.012	ppb	0.66	233,461.79	3.681E+00	Pulse	0.30	3
Fe	56	45	2	95.951	ppb	1.49	382,200.18	6.027E+00	Pulse	0.30	3
Co	59	45	2	8.932	ppb	1.04	72,691.27	1.146E+00	Pulse	0.30	3
Ni	60	72	2	8.935	ppb	2.72	20,325.05	4.762E-01	Pulse	0.30	3
Cu	63	72	2	7.534	ppb	0.91	51,458.76	1.206E+00	Pulse	0.30	3
Zn	66	72	2	85.315	ppb	2.36	84,415.59	1.978E+00	Pulse	0.30	3
As	75	72	2	10.066	ppb	1.34	5,433.18	1.273E-01	Pulse	0.75	3
Se	78	72	1	9.836	ppb	7.31	1,619.04	3.833E-02	Pulse	0.30	3
Mo	95	103	2	12.583	ppb	0.86	31,885.83	2.942E-02	Pulse	0.30	3
Ag	107	103	3	0.636	ppb	4.03	15,180.44	5.933E-03	Pulse	0.30	3
Cd	111	115	3	4.550	ppb	3.62	24,066.65	8.780E-03	Pulse	0.30	3
Sb	121	115	3	10.658	ppb	0.87	203,493.94	7.424E-02	Pulse	0.30	3
Ba	137	159	3	138.352	ppb	0.31	869,452.69	2.044E-01	Pulse	0.30	3
Tl	205	209	3	10.126	ppb	0.31	420,553.21	1.719E-01	Pulse	0.30	3
Pb	208	209	3	9.688	ppb	0.39	554,435.75	2.267E-01	Pulse	0.30	3
U	238	209	3	43.869	ppb	1.23	2,796,465.17	1.143E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,216,539.10	1.48	59.2	Analog	0.30	3
2	Sc	45	63,425.73	1.91	77.0	Pulse	0.30	3
3	Sc	45	1,921,935.39	0.86	84.5	Analog	0.30	3
1	Ge	72	42,266.74	1.25	80.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	42,683.54	1.54	84.7	Pulse	0.30	3
2	Rh	103	1,083,729.26	0.60	74.5	Mix	0.30	3
3	Rh	103	2,558,633.05	0.22	81.0	Analog	0.30	3
3	In	115	2,741,172.60	0.22	90.2	Analog	0.30	3
3	Tb	159	4,254,009.45	0.26	92.4	Analog	0.30	3
3	Bi	209	2,446,130.14	0.48	85.7	Analog	0.30	3

Quantitation Report

File Name	A0511093.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:08
Sample Name	N019610-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.962	ppb	2.25	65,156.81	5.650E-02	Pulse	0.30	3
B	11	6	3	2428.718	ppb	0.63	11,808,706.62	1.024E+01	Analog	0.30	3
Na	23	45	2	127909.589	ppb	0.51	119,670,296.00	1.869E+03	Analog	0.30	3
Mg	26	45	2	22933.343	ppb	0.88	1,849,078.44	2.888E+01	Analog	0.30	3
Al	27	45	2	179.774	ppb	0.26	29,905.50	4.671E-01	Pulse	0.30	3
K	39	45	2	4211.762	ppb	0.61	1,067,604.46	1.668E+01	Pulse	0.30	3
Ca	44	45	3	132252.141	ppb	0.86	109,310,908.37	6.015E+01	Analog	0.30	3
V	51	45	2	14.711	ppb	1.08	51,720.43	8.079E-01	Pulse	0.30	3
Cr	52	45	2	14.442	ppb	0.63	69,010.04	1.078E+00	Pulse	0.30	3
Mn	55	45	2	95.607	ppb	1.59	232,239.73	3.628E+00	Pulse	0.30	3
Fe	56	45	2	94.996	ppb	0.67	381,996.72	5.967E+00	Pulse	0.30	3
Co	59	45	2	8.868	ppb	0.61	72,853.45	1.138E+00	Pulse	0.30	3
Ni	60	72	2	9.028	ppb	2.13	20,235.23	4.810E-01	Pulse	0.30	3
Cu	63	72	2	7.573	ppb	1.02	50,964.75	1.212E+00	Pulse	0.30	3
Zn	66	72	2	85.825	ppb	0.29	83,702.79	1.990E+00	Pulse	0.30	3
As	75	72	2	10.500	ppb	4.25	5,584.83	1.328E-01	Pulse	0.75	3
Se	78	72	1	9.139	ppb	8.90	1,527.91	3.561E-02	Pulse	0.30	3
Mo	95	103	2	12.525	ppb	1.32	31,785.70	2.929E-02	Pulse	0.30	3
Ag	107	103	3	0.901	ppb	1.78	19,685.33	8.164E-03	Pulse	0.30	3
Cd	111	115	3	4.254	ppb	2.56	21,251.55	8.229E-03	Pulse	0.30	3
Sb	121	115	3	10.525	ppb	0.40	189,357.82	7.332E-02	Pulse	0.30	3
Ba	137	159	3	139.676	ppb	0.65	817,509.37	2.063E-01	Pulse	0.30	3
Tl	205	209	3	10.153	ppb	0.61	393,874.29	1.724E-01	Pulse	0.30	3
Pb	208	209	3	9.673	ppb	0.52	517,126.53	2.263E-01	Pulse	0.30	3
U	238	209	3	43.721	ppb	1.28	2,603,623.55	1.139E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,153,478.62	1.43	56.1	Analog	0.30	3
2	Sc	45	64,018.96	0.64	77.8	Pulse	0.30	3
3	Sc	45	1,817,484.90	1.70	79.9	Analog	0.30	3
1	Ge	72	42,929.70	0.95	82.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	42,066.27	0.26	83.5	Pulse	0.30	3
2	Rh	103	1,085,375.04	0.61	74.6	Mix	0.30	3
3	Rh	103	2,411,211.49	1.13	76.4	Analog	0.30	3
3	In	115	2,582,757.92	0.69	85.0	Analog	0.30	3
3	Tb	159	3,961,908.69	0.46	86.1	Analog	0.30	3
3	Bi	209	2,285,107.52	1.43	80.1	Analog	0.30	3

Quantitation Report

File Name	A0511094.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:14
Sample Name	N019610-013B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.737	ppb	0.80	70,593.77	5.522E-02	Pulse	0.30	3
B	11	6	3	2104.139	ppb	0.50	11,340,387.45	8.871E+00	Analog	0.30	3
Na	23	45	2	63187.662	ppb	0.70	63,495,426.83	9.241E+02	Analog	0.30	3
Mg	26	45	2	12650.414	ppb	2.13	1,094,877.61	1.593E+01	Mix	0.30	3
Al	27	45	2	175.053	ppb	0.47	31,256.25	4.549E-01	Pulse	0.30	3
K	39	45	2	3748.593	ppb	0.86	1,021,812.63	1.487E+01	Pulse	0.30	3
Ca	44	45	3	64650.017	ppb	0.45	61,617,007.97	2.941E+01	Analog	0.30	3
V	51	45	2	10.491	ppb	0.70	39,737.43	5.784E-01	Pulse	0.30	3
Cr	52	45	2	10.584	ppb	0.46	54,522.94	7.935E-01	Pulse	0.30	3
Mn	55	45	2	5299.077	ppb	0.45	13,804,223.78	2.009E+02	Analog	0.30	3
Fe	56	45	2	3424.518	ppb	0.29	14,714,989.57	2.142E+02	Analog	0.30	3
Co	59	45	2	9.243	ppb	1.03	81,490.48	1.186E+00	Pulse	0.30	3
Ni	60	72	2	14.120	ppb	0.51	34,184.35	7.467E-01	Pulse	0.30	3
Cu	63	72	2	7.661	ppb	1.20	56,062.80	1.225E+00	Pulse	0.30	3
Zn	66	72	2	85.579	ppb	0.54	90,839.58	1.984E+00	Pulse	0.30	3
As	75	72	2	87.100	ppb	0.54	50,345.75	1.100E+00	Pulse	0.75	3
Se	78	72	1	8.978	ppb	5.16	1,595.70	3.499E-02	Pulse	0.30	3
Mo	95	103	2	105.591	ppb	0.79	294,540.42	2.467E-01	Pulse	0.30	3
Ag	107	103	3	0.639	ppb	3.56	16,192.49	5.966E-03	Pulse	0.30	3
Cd	111	115	3	6.800	ppb	0.29	37,051.84	1.296E-02	Pulse	0.30	3
Sb	121	115	3	10.177	ppb	0.24	202,622.60	7.089E-02	Pulse	0.30	3
Ba	137	159	3	571.664	ppb	0.43	3,653,579.37	8.443E-01	Analog	0.30	3
Tl	205	209	3	9.979	ppb	0.38	429,611.80	1.694E-01	Pulse	0.30	3
Pb	208	209	3	9.837	ppb	0.50	583,496.49	2.301E-01	Pulse	0.30	3
U	238	209	3	20.052	ppb	1.47	1,325,127.61	5.226E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,278,403.86	0.39	62.2	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	68,705.77	1.20	83.5	Pulse	0.30	3
3	Sc	45	2,095,246.31	0.39	92.1	Analog	0.30	3
1	Ge	72	45,600.25	1.68	87.3	Pulse	0.30	3
2	Ge	72	45,780.55	0.76	90.8	Pulse	0.30	3
2	Rh	103	1,194,042.46	0.95	82.1	Analog	0.30	3
3	Rh	103	2,714,645.24	1.12	86.0	Analog	0.30	3
3	In	115	2,858,119.58	0.38	94.0	Analog	0.30	3
3	Tb	159	4,327,398.16	0.64	94.0	Analog	0.30	3
3	Bi	209	2,535,824.20	0.63	88.9	Analog	0.30	3

Quantitation Report

File Name	A0511095.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:19
Sample Name	CCV6,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	18.713	ppb	1.64	145,253.32	1.061E-01	Pulse	0.30	3
B	11	6	3	235.531	ppb	0.91	1,370,122.54	1.001E+00	Analog	0.30	3
Na	23	45	2	331.913	ppb	2.83	432,437.44	6.166E+00	Pulse	0.30	3
Mg	26	45	2	194.146	ppb	2.19	17,264.93	2.462E-01	Pulse	0.30	3
Al	27	45	2	20.763	ppb	0.65	3,906.68	5.570E-02	Pulse	0.30	3
K	39	45	2	228.789	ppb	2.89	80,747.04	1.151E+00	Pulse	0.30	3
Ca	44	45	3	246.869	ppb	1.04	228,734.05	1.217E-01	Pulse	0.30	3
V	51	45	2	20.570	ppb	0.99	79,020.75	1.127E+00	Pulse	0.30	3
Cr	52	45	2	19.528	ppb	0.91	101,905.60	1.453E+00	Pulse	0.30	3
Mn	55	45	2	21.340	ppb	0.21	56,967.81	8.121E-01	Pulse	0.30	3
Fe	56	45	2	22.043	ppb	1.60	98,552.98	1.405E+00	Pulse	0.30	3
Co	59	45	2	19.802	ppb	1.58	178,225.54	2.541E+00	Pulse	0.30	3
Ni	60	72	2	17.698	ppb	3.00	46,476.79	9.333E-01	Pulse	0.30	3
Cu	63	72	2	16.765	ppb	0.60	128,872.17	2.588E+00	Pulse	0.30	3
Zn	66	72	2	17.565	ppb	1.74	21,420.04	4.301E-01	Pulse	0.30	3
As	75	72	2	18.846	ppb	0.47	11,857.73	2.381E-01	Pulse	0.75	3
Se	78	72	1	19.349	ppb	2.15	3,786.15	7.535E-02	Pulse	0.30	3
Mo	95	103	2	20.479	ppb	1.33	64,074.15	4.787E-02	Pulse	0.30	3
Ag	107	103	3	19.856	ppb	1.21	494,105.52	1.675E-01	Pulse	0.30	3
Cd	111	115	3	18.888	ppb	0.72	107,646.96	3.545E-02	Pulse	0.30	3
Sb	121	115	3	20.049	ppb	0.18	423,789.02	1.395E-01	Pulse	0.30	3
Ba	137	159	3	22.211	ppb	0.55	147,636.21	3.287E-02	Pulse	0.30	3
Tl	205	209	3	20.253	ppb	0.83	959,854.05	3.435E-01	Pulse	0.30	3
Pb	208	209	3	20.307	ppb	1.04	1,318,765.34	4.719E-01	Pulse	0.30	3
U	238	209	3	19.761	ppb	0.70	1,439,278.75	5.150E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,369,394.62	1.08	66.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	70,146.05	1.60	85.2	Pulse	0.30	3
3	Sc	45	1,880,118.81	0.74	82.7	Analog	0.30	3
1	Ge	72	50,247.01	0.17	96.2	Pulse	0.30	3
2	Ge	72	49,796.77	1.10	98.8	Pulse	0.30	3
2	Rh	103	1,338,693.78	1.12	92.0	Analog	0.30	3
3	Rh	103	2,950,167.18	0.27	93.5	Analog	0.30	3
3	In	115	3,036,884.21	0.45	99.9	Analog	0.30	3
3	Tb	159	4,491,585.07	0.35	97.6	Analog	0.30	3
3	Bi	209	2,794,784.92	0.96	97.9	Analog	0.30	3

Quantitation Report

File Name	A0511096.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:25
Sample Name	CCB6,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	60.00	4.547E-05	Pulse	0.30	3
B	11	6	3	30.548	ppb	0.72	181,196.79	1.373E-01	Pulse	0.30	3
Na	23	45	2	49.284	ppb	3.43	134,891.54	2.039E+00	Pulse	0.30	3
Mg	26	45	2	0.842	ppb	3.33	181.12	2.738E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	121.10	1.826E-03	Pulse	0.30	3
K	39	45	2	19.560	ppb	14.74	22,224.43	3.358E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	11,273.14	6.246E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	231.12	3.503E-03	Pulse	0.30	3
Cr	52	45	2	0.021	ppb	22.36	977.70	1.478E-02	Pulse	0.30	3
Mn	55	45	2	0.146	ppb	8.11	568.98	8.596E-03	Pulse	0.30	3
Fe	56	45	2	0.196	ppb	19.11	2,583.78	3.907E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	208.88	33.19	5.036E-04	Pulse	0.30	3
Ni	60	72	2	0.242	ppb	6.33	1,072.14	2.277E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,190.42	2.531E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	453.87	9.632E-03	Pulse	0.30	3
As	75	72	2	0.010	ppb	48.76	16.89	3.592E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	2.418E-05	Pulse	0.30	3
Mo	95	103	2	0.126	ppb	8.82	416.69	3.261E-04	Pulse	0.30	3
Ag	107	103	3	1.069	ppb	11.33	27,352.06	9.577E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	252.42	8.571E-05	Pulse	0.30	3
Sb	121	115	3	0.036	ppb	17.55	1,098.97	3.731E-04	Pulse	0.30	3
Ba	137	159	3	0.024	ppb	5.78	455.38	1.038E-04	Pulse	0.30	3
Tl	205	209	3	0.019	ppb	6.82	1,947.99	7.117E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	3,221.57	1.177E-03	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.006	ppb	4.03	537.99	1.966E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,320,151.84	0.75	64.2	Analog	0.30	3
2	Sc	45	66,162.90	1.48	80.4	Pulse	0.30	3
3	Sc	45	1,804,633.67	1.25	79.3	Analog	0.30	3
1	Ge	72	46,527.08	1.27	89.1	Pulse	0.30	3
2	Ge	72	47,078.67	2.07	93.4	Pulse	0.30	3
2	Rh	103	1,279,316.94	2.16	87.9	Analog	0.30	3
3	Rh	103	2,855,842.87	0.19	90.5	Analog	0.30	3
3	In	115	2,945,436.38	1.25	96.9	Analog	0.30	3
3	Tb	159	4,389,584.93	0.88	95.4	Analog	0.30	3
3	Bi	209	2,736,651.59	0.96	95.9	Analog	0.30	3

Quantitation Report

File Name	A0511097.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:30
Sample Name	LLCCV2,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.445	ppb	2.90	3,701.67	2.570E-03	Pulse	0.30	3
B	11	6	3	66.925	ppb	0.94	418,345.81	2.905E-01	Pulse	0.30	3
Na	23	45	2	24.004	ppb	15.28	122,279.17	1.670E+00	Pulse	0.30	3
Mg	26	45	2	1.598	ppb	21.23	270.01	3.690E-03	Pulse	0.30	3
Al	27	45	2	15.005	ppb	3.29	2,991.49	4.080E-02	Pulse	0.30	3
K	39	45	2	7.878	ppb	68.99	21,244.20	2.903E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,517.64	8.921E-03	Pulse	0.30	3
V	51	45	2	0.854	ppb	5.93	3,962.86	5.412E-02	Pulse	0.30	3
Cr	52	45	2	0.991	ppb	1.52	6,326.87	8.633E-02	Pulse	0.30	3
Mn	55	45	2	0.556	ppb	3.62	1,771.06	2.416E-02	Pulse	0.30	3
Fe	56	45	2	11.105	ppb	1.63	52,836.87	7.212E-01	Pulse	0.30	3
Co	59	45	2	0.440	ppb	1.51	4,167.21	5.688E-02	Pulse	0.30	3
Ni	60	72	2	1.129	ppb	6.56	3,523.66	6.905E-02	Pulse	0.30	3
Cu	63	72	2	0.482	ppb	6.57	7,636.96	1.498E-01	Pulse	0.30	3
Zn	66	72	2	8.286	ppb	0.89	11,124.57	2.181E-01	Pulse	0.30	3
As	75	72	2	0.095	ppb	25.51	72.89	1.431E-03	Pulse	0.75	3
Se	78	72	1	0.458	ppb	5.43	94.45	1.827E-03	Pulse	0.30	3
Mo	95	103	2	0.533	ppb	6.92	1,790.18	1.277E-03	Pulse	0.30	3
Ag	107	103	3	0.652	ppb	1.01	18,961.29	6.074E-03	Pulse	0.30	3
Cd	111	115	3	0.437	ppb	4.26	3,637.34	1.129E-03	Pulse	0.30	3
Sb	121	115	3	0.490	ppb	3.36	11,364.52	3.526E-03	Pulse	0.30	3
Ba	137	159	3	1.050	ppb	1.22	7,876.52	1.619E-03	Pulse	0.30	3
Tl	205	209	3	0.438	ppb	1.21	23,577.21	7.812E-03	Pulse	0.30	3
Pb	208	209	3	0.889	ppb	0.76	70,865.90	2.348E-02	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.401	ppb	1.11	31,662.39	1.049E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,440,298.31	0.82	70.1	Analog	0.30	3
2	Sc	45	73,283.84	2.76	89.0	Pulse	0.30	3
3	Sc	45	1,963,554.37	0.68	86.3	Analog	0.30	3
1	Ge	72	51,692.62	0.93	99.0	Pulse	0.30	3
2	Ge	72	51,007.29	1.98	101.2	Pulse	0.30	3
2	Rh	103	1,401,310.68	1.38	96.3	Analog	0.30	3
3	Rh	103	3,121,585.58	0.15	98.9	Analog	0.30	3
3	In	115	3,222,491.58	0.27	106.0	Analog	0.30	3
3	Tb	159	4,863,646.80	0.66	105.7	Analog	0.30	3
3	Bi	209	3,018,101.90	0.46	105.8	Analog	0.30	3

Quantitation Report

File Name	A0511098.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:36
Sample Name	ICSA3,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	36.67	2.466E-05	Pulse	0.30	3
B	11	6	3	18.315	ppb	0.37	127,505.61	8.573E-02	Pulse	0.30	3
Na	23	45	2	90828.074	ppb	1.20	104,506,029.55	1.328E+03	Analog	0.30	3
Mg	26	45	2	92246.061	ppb	1.42	9,142,856.88	1.162E+02	Analog	0.30	3
Al	27	45	2	12.139	ppb	5.91	2,627.57	3.338E-02	Pulse	0.30	3
K	39	45	2	104806.975	ppb	1.50	32,177,867.86	4.088E+02	Analog	0.30	3
Ca	44	45	3	95259.309	ppb	0.32	97,128,400.78	4.333E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	272.23	3.458E-03	Pulse	0.30	3
Cr	52	45	2	0.187	ppb	8.01	2,126.58	2.703E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-11,065.14	-1.406E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,344.57	1.707E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-71.69	-9.014E-04	Pulse	0.30	3
Ni	60	72	2	0.303	ppb	13.78	1,318.81	2.595E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-3,092.35	-6.078E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	590.11	1.161E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-7.42	-1.462E-04	Pulse	0.75	3
Se	78	72	1	0.006	ppb	481.11	3.33	6.696E-05	Pulse	0.30	3
Mo	95	103	2	0.053	ppb	21.61	205.57	1.560E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-16,302.05	-5.318E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-21,685.17	-6.760E-03	Pulse	0.30	3
Sb	121	115	3	0.011	ppb	27.00	626.70	1.955E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-71,967.09	-1.472E-02	Pulse	0.30	3
Tl	205	209	3	0.005	ppb	16.16	1,284.55	4.764E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-98,440.26	-3.651E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-5,643.62	-2.093E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,487,237.66	0.38	72.3	Analog	0.30	3
2	Sc	45	78,714.01	2.86	95.6	Pulse	0.30	3
3	Sc	45	2,241,753.01	0.65	98.6	Analog	0.30	3
1	Ge	72	48,874.01	1.67	93.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	50,875.63	2.54	101.0	Pulse	0.30	3
2	Rh	103	1,316,407.31	2.75	90.5	Analog	0.30	3
3	Rh	103	3,066,279.40	0.86	97.1	Analog	0.30	3
3	In	115	3,208,153.69	0.90	105.6	Analog	0.30	3
3	Tb	159	4,888,739.72	1.26	106.2	Analog	0.30	3
3	Bi	209	2,696,378.23	0.91	94.5	Analog	0.30	3

Quantitation Report

File Name	A0511099.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:41
Sample Name	ICSAB3,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.734	ppb	0.75	140,031.68	1.119E-01	Pulse	0.30	3
B	11	6	3	216.419	ppb	1.87	1,151,720.87	9.201E-01	Analog	0.30	3
Na	23	45	2	89689.640	ppb	0.72	93,611,729.72	1.311E+03	Analog	0.30	3
Mg	26	45	2	92117.040	ppb	1.00	8,282,446.75	1.160E+02	Analog	0.30	3
Al	27	45	2	32.841	ppb	4.07	6,205.72	8.695E-02	Pulse	0.30	3
K	39	45	2	105132.431	ppb	1.01	29,276,553.45	4.101E+02	Analog	0.30	3
Ca	44	45	3	95693.070	ppb	0.43	83,524,449.87	4.352E+01	Analog	0.30	3
V	51	45	2	21.245	ppb	1.73	83,052.44	1.163E+00	Pulse	0.30	3
Cr	52	45	2	19.456	ppb	1.40	103,345.67	1.448E+00	Pulse	0.30	3
Mn	55	45	2	18.019	ppb	1.40	48,992.07	6.862E-01	Pulse	0.30	3
Fe	56	45	2	21.238	ppb	1.48	96,728.03	1.355E+00	Pulse	0.30	3
Co	59	45	2	18.890	ppb	1.07	173,048.42	2.424E+00	Pulse	0.30	3
Ni	60	72	2	17.994	ppb	0.58	43,894.85	9.488E-01	Pulse	0.30	3
Cu	63	72	2	15.635	ppb	1.49	111,893.14	2.419E+00	Pulse	0.30	3
Zn	66	72	2	16.257	ppb	1.87	18,515.02	4.002E-01	Pulse	0.30	3
As	75	72	2	20.396	ppb	1.56	11,920.58	2.577E-01	Pulse	0.75	3
Se	78	72	1	18.265	ppb	3.70	3,328.26	7.113E-02	Pulse	0.30	3
Mo	95	103	2	23.311	ppb	0.53	63,835.22	5.448E-02	Pulse	0.30	3
Ag	107	103	3	18.032	ppb	0.30	400,900.59	1.521E-01	Pulse	0.30	3
Cd	111	115	3	15.700	ppb	1.36	80,955.16	2.952E-02	Pulse	0.30	3
Sb	121	115	3	21.234	ppb	0.61	405,324.64	1.478E-01	Pulse	0.30	3
Ba	137	159	3	15.572	ppb	0.34	95,538.57	2.306E-02	Pulse	0.30	3
Tl	205	209	3	22.174	ppb	0.57	854,072.05	3.760E-01	Pulse	0.30	3
Pb	208	209	3	20.317	ppb	0.66	1,072,400.46	4.721E-01	Pulse	0.30	3
U	238	209	3	22.432	ppb	0.75	1,328,006.55	5.846E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,251,837.69	1.11	60.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	71,402.52	1.71	86.7	Pulse	0.30	3
3	Sc	45	1,919,066.93	1.08	84.4	Analog	0.30	3
1	Ge	72	46,779.25	1.08	89.5	Pulse	0.30	3
2	Ge	72	46,266.55	1.48	91.8	Pulse	0.30	3
2	Rh	103	1,171,697.51	0.76	80.5	Analog	0.30	3
3	Rh	103	2,634,916.99	0.83	83.5	Analog	0.30	3
3	In	115	2,742,654.27	0.61	90.2	Analog	0.30	3
3	Tb	159	4,142,168.48	0.46	90.0	Analog	0.30	3
3	Bi	209	2,271,518.00	0.65	79.6	Analog	0.30	3

Quantitation Report

File Name	A0511100.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:47
Sample Name	N019628-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	38.89	3.909E-05	Pulse	0.30	3
B	11	6	3	509.630	ppb	0.89	2,132,526.35	2.155E+00	Analog	0.30	3
Na	23	45	2	832306.216	ppb	0.82	753,939,259.88	1.216E+04	Analog	0.30	3
Mg	26	45	2	1152.301	ppb	1.15	90,086.42	1.453E+00	Pulse	0.30	3
Al	27	45	2	2.390	ppb	7.77	506.60	8.157E-03	Pulse	0.30	3
K	39	45	2	9512.181	ppb	0.59	2,315,506.34	3.734E+01	Analog	0.30	3
Ca	44	45	3	74795.106	ppb	0.60	65,438,350.69	3.402E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	170.01	2.747E-03	Pulse	0.30	3
Cr	52	45	2	0.026	ppb	149.75	937.38	1.518E-02	Pulse	0.30	3
Mn	55	45	2	62.420	ppb	1.01	146,979.63	2.370E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-43,722.96	-7.049E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-778.65	-1.256E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	128.19	3.237E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-17,636.01	-4.432E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,871.47	-4.696E-02	Pulse	0.30	3
As	75	72	2	0.171	ppb	0.92	94.84	2.383E-03	Pulse	0.75	3
Se	78	72	1	0.029	ppb	70.82	6.67	1.540E-04	Pulse	0.30	3
Mo	95	103	2	7.291	ppb	0.76	16,691.49	1.706E-02	Pulse	0.30	3
Ag	107	103	3	0.737	ppb	18.76	16,539.12	6.783E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	26.67	1.047E-05	Pulse	0.30	3
Sb	121	115	3	0.039	ppb	9.60	992.29	3.896E-04	Pulse	0.30	3
Ba	137	159	3	15.096	ppb	0.82	84,777.96	2.236E-02	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	65.67	1,038.97	4.982E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,359.36	-2.090E-03	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-12.86	-5.682E-06	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	989,484.74	1.88	48.1	Analog	0.30	3
2	Sc	45	62,016.45	3.56	75.3	Pulse	0.30	3
3	Sc	45	1,923,424.17	2.58	84.6	Analog	0.30	3
1	Ge	72	43,430.81	1.37	83.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	39,796.25	4.22	79.0	Pulse	0.30	3
2	Rh	103	978,392.31	3.98	67.2	Pulse	0.30	3
3	Rh	103	2,437,413.14	2.63	77.2	Analog	0.30	3
3	In	115	2,543,680.93	2.70	83.7	Analog	0.30	3
3	Tb	159	3,790,822.86	2.72	82.4	Analog	0.30	3
3	Bi	209	2,084,018.51	2.95	73.0	Analog	0.30	3

Quantitation Report

File Name	A0511101.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:53
Sample Name	N019628-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

not reported

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

OLR

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.34	1.339E-05	Pulse	0.30	3
B	11	6	3	436.333	ppb	1.11	1,817,125.26	1.846E+00	Analog	0.30	3
Na	23	45	2	586756.524	ppb	0.48	499,259,059.23	8.570E+03	Analog	0.30	3
Mg	26	45	2	4327.433	ppb	0.29	317,553.26	5.451E+00	Pulse	0.30	3
Al	27	45	2	0.589	ppb	34.55	203.90	3.498E-03	Pulse	0.30	3
K	39	45	2	8313.636	ppb	0.30	1,902,876.71	3.267E+01	Analog	0.30	3
Ca	44	45	3	99724.446	ppb	0.36	78,434,003.83	4.536E+01	Analog	0.30	3
V	51	45	2	0.117	ppb	15.79	817.83	1.405E-02	Pulse	0.30	3
Cr	52	45	2	412.268	ppb	0.96	1,771,502.55	3.041E+01	Analog	0.30	3
Mn	55	45	2	8.352	ppb	3.53	18,634.13	3.197E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-36,772.53	-6.313E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-449.38	-7.710E-03	Pulse	0.30	3
Ni	60	72	2	0.229	ppb	25.24	843.41	2.207E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-7,075.09	-1.846E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-467.76	-1.226E-02	Pulse	0.30	3
As	75	72	2	0.306	ppb	2.96	156.83	4.094E-03	Pulse	0.75	3
Se	78	72	1	0.889	ppb	25.78	145.56	3.504E-03	Pulse	0.30	3
Mo	95	103	2	4.633	ppb	2.70	10,380.40	1.085E-02	Pulse	0.30	3
Ag	107	103	3	0.001	ppb	822.04	1,383.67	6.039E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-6.80	-2.777E-06	Pulse	0.30	3
Sb	121	115	3	0.012	ppb	23.25	490.03	2.035E-04	Pulse	0.30	3
Ba	137	159	3	10.210	ppb	2.41	55,649.81	1.515E-02	Pulse	0.30	3
Tl	205	209	3	0.098	ppb	5.47	4,249.66	2.052E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,169.95	-2.013E-03	Pulse	0.30	3
U	238	209	3	1.055	ppb	0.71	57,033.96	2.753E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	984,341.19	2.23	47.9	Analog	0.30	3
2	Sc	45	58,252.89	2.14	70.8	Pulse	0.30	3
3	Sc	45	1,729,302.08	1.99	76.0	Analog	0.30	3
1	Ge	72	41,536.04	1.40	79.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	38,323.58	2.92	76.0	Pulse	0.30	3
2	Rh	103	956,898.82	2.32	65.8	Pulse	0.30	3
3	Rh	103	2,288,475.16	1.18	72.5	Analog	0.30	3
3	In	115	2,409,868.29	1.34	79.3	Analog	0.30	3
3	Tb	159	3,673,887.24	0.59	79.8	Analog	0.30	3
3	Bi	209	2,071,318.41	0.91	72.6	Analog	0.30	3

Quantitation Report

File Name	A0511102.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 18:58
Sample Name	N019628-004B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

not reported

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	17.78	1.445E-05	Pulse	0.30	3
B	11	6	3	92.966	ppb	1.42	494,404.20	4.001E-01	Pulse	0.30	3
Na	23	45	2	121362.703	ppb	1.72	108,233,986.16	1.774E+03	Analog	0.30	3
Mg	26	45	2	892.525	ppb	2.25	68,681.33	1.126E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	63.15	1.040E-03	Pulse	0.30	3
K	39	45	2	1694.361	ppb	2.33	418,772.86	6.864E+00	Pulse	0.30	3
Ca	44	45	3	20578.786	ppb	0.99	17,548,968.91	9.367E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	313.35	5.117E-03	Pulse	0.30	3
Cr	52	45	2	84.759	ppb	1.72	382,100.99	6.262E+00	Pulse	0.30	3
Mn	55	45	2	1.669	ppb	5.23	4,051.50	6.636E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-7,111.02	-1.165E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-90.53	-1.489E-03	Pulse	0.30	3
Ni	60	72	2	0.153	ppb	19.90	771.75	1.814E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-463.06	-1.088E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	323.73	7.601E-03	Pulse	0.30	3
As	75	72	2	0.048	ppb	8.10	35.35	8.310E-04	Pulse	0.75	3
Se	78	72	1	0.205	ppb	48.63	35.56	8.411E-04	Pulse	0.30	3
Mo	95	103	2	0.894	ppb	9.50	2,306.94	2.120E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,335.44	4.974E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-23,969.73	-8.545E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	303.35	1.081E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-14,076.29	-3.305E-03	Pulse	0.30	3
Tl	205	209	3	0.016	ppb	16.88	1,645.71	6.599E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-45,108.05	-1.807E-02	Pulse	0.30	3
U	238	209	3	0.203	ppb	1.39	13,340.39	5.346E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,235,536.24	1.82	60.1	Analog	0.30	3
2	Sc	45	61,053.89	4.86	74.2	Pulse	0.30	3
3	Sc	45	1,873,756.90	3.18	82.4	Analog	0.30	3
1	Ge	72	42,265.55	0.45	80.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	42,508.52	2.42	84.3	Pulse	0.30	3
2	Rh	103	1,085,655.55	3.75	74.6	Mix	0.30	3
3	Rh	103	2,686,024.11	2.75	85.1	Analog	0.30	3
3	In	115	2,805,597.55	2.59	92.3	Analog	0.30	3
3	Tb	159	4,259,025.46	2.17	92.5	Analog	0.30	3
3	Bi	209	2,495,822.88	2.09	87.5	Analog	0.30	3

Quantitation Report

File Name	A0511103.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:04
Sample Name	N019628-005B,SAMP,100
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

not reported

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	6.280E-06	Pulse	0.30	3
B	11	6	3	17.986	ppb	1.66	118,589.89	8.435E-02	Pulse	0.30	3
Na	23	45	2	4850.871	ppb	1.15	5,157,397.91	7.216E+01	Analog	0.30	3
Mg	26	45	2	255.708	ppb	1.20	23,137.72	3.237E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	65.47	9.148E-04	Pulse	0.30	3
K	39	45	2	144.512	ppb	4.05	58,801.94	8.229E-01	Pulse	0.30	3
Ca	44	45	3	2388.070	ppb	0.20	2,197,712.73	1.095E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	511.14	7.145E-03	Pulse	0.30	3
Cr	52	45	2	106.746	ppb	0.19	563,423.40	7.883E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	117.24	1.641E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,475.10	2.064E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	15.01	2.094E-04	Pulse	0.30	3
Ni	60	72	2	0.182	ppb	10.38	1,001.92	1.965E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,172.44	2.300E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	724.26	1.420E-02	Pulse	0.30	3
As	75	72	2	0.031	ppb	44.00	31.93	6.269E-04	Pulse	0.75	3
Se	78	72	1	0.130	ppb	67.34	27.78	5.493E-04	Pulse	0.30	3
Mo	95	103	2	0.376	ppb	7.76	1,254.54	9.105E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,185.72	3.780E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-761.49	-2.354E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	267.79	8.276E-05	Pulse	0.30	3
Ba	137	159	3	0.081	ppb	13.86	904.05	1.884E-04	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	727.82	2.423E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	420.46	1.403E-04	Pulse	0.30	3
U	238	209	3	0.038	ppb	5.93	3,125.98	1.041E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,405,943.73	1.16	68.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	71,474.77	1.12	86.8	Pulse	0.30	3
3	Sc	45	2,006,395.14	0.47	88.2	Analog	0.30	3
1	Ge	72	50,695.18	0.76	97.0	Pulse	0.30	3
2	Ge	72	50,994.99	0.84	101.2	Pulse	0.30	3
2	Rh	103	1,377,670.76	1.25	94.7	Analog	0.30	3
3	Rh	103	3,136,175.75	0.73	99.3	Analog	0.30	3
3	In	115	3,235,429.76	0.36	106.5	Analog	0.30	3
3	Tb	159	4,798,752.33	0.49	104.3	Analog	0.30	3
3	Bi	209	3,003,160.61	0.59	105.2	Analog	0.30	3

Quantitation Report

File Name A0511104.D
File Path C:\ICPMH\1\DATA\160511A.B
Method File DEFAULT.M
Method Path C:\ICPMH\1\METHODS\
Acq Time 05/11/2016 19:09
Sample Name N019628-007B,SAMP,5
Sample Type Sample
Comment
Prep Dilution 1.000
Auto Dilution N/A
Total Dilution 1.000
Operator Name
Acq Mode Spectrum
Cal Title
Cal Type External Calibration
Last Calib 05/12/2016 20:49
Bkg File
Bkg Mode Count Subtraction except for ISTD
Interference File Acq. Defined
FQ Blank File
VIS Fit Point to Point

not reported

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	7.030E-06	Pulse	0.30	3
B	11	6	3	217.332	ppb	2.29	909,352.80	9.239E-01	Pulse	0.30	3
Na	23	45	2	686466.476	ppb	1.09	634,657,070.54	1.003E+04	Analog	0.30	3
Mg	26	45	2	6859.504	ppb	1.04	546,894.16	8.640E+00	Pulse	0.30	3
Al	27	45	2	0.626	ppb	40.17	226.58	3.593E-03	Pulse	0.30	3
K	39	45	2	8981.476	ppb	2.47	2,231,084.13	3.527E+01	Analog	0.30	3
Ca	44	45	3	70135.484	ppb	1.19	59,313,288.56	3.190E+01	Analog	0.30	3
V	51	45	2	0.716	ppb	4.47	2,950.39	4.664E-02	Pulse	0.30	3
Cr	52	45	2	0.125	ppb	2.72	1,420.70	2.244E-02	Pulse	0.30	3
Mn	55	45	2	3.471	ppb	2.89	8,529.04	1.347E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-52,126.11	-8.231E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-653.25	-1.034E-02	Pulse	0.30	3
Ni	60	72	2	0.106	ppb	58.28	647.69	1.569E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-10,111.75	-2.430E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	199.14	4.750E-03	Pulse	0.30	3
As	75	72	2	0.330	ppb	11.66	183.25	4.390E-03	Pulse	0.75	3
Se	78	72	1	0.052	ppb	107.76	10.00	2.433E-04	Pulse	0.30	3
Mo	95	103	2	2.121	ppb	4.76	5,159.93	4.985E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-632.91	-2.580E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	103.24	4.006E-05	Pulse	0.30	3
Sb	121	115	3	0.022	ppb	17.94	703.38	2.703E-04	Pulse	0.30	3
Ba	137	159	3	16.189	ppb	0.43	95,617.46	2.398E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	575.59	2.570E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,115.84	-1.835E-03	Pulse	0.30	3
U	238	209	3	0.106	ppb	1.71	6,309.61	2.813E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	984,648.53	4.12	47.9	Analog	0.30	3
2	Sc	45	63,320.19	5.89	76.9	Pulse	0.30	3
3	Sc	45	1,859,344.94	3.51	81.8	Analog	0.30	3
1	Ge	72	40,874.46	2.38	78.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	41,621.71	6.04	82.6	Pulse	0.30	3
2	Rh	103	1,034,193.26	3.01	71.1	Mix	0.30	3
3	Rh	103	2,452,042.79	3.39	77.7	Analog	0.30	3
3	In	115	2,597,214.32	3.34	85.5	Analog	0.30	3
3	Tb	159	3,988,518.07	3.49	86.7	Analog	0.30	3
3	Bi	209	2,242,906.98	2.72	78.6	Analog	0.30	3

Quantitation Report

File Name	A0511105.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:15
Sample Name	N019654-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	46.67	3.878E-05	Pulse	0.30	3
B	11	6	3	128.020	ppb	0.15	659,272.84	5.478E-01	Pulse	0.30	3
Na	23	45	2	40381.539	ppb	0.62	37,892,397.49	5.911E+02	Analog	0.30	3
Mg	26	45	2	7374.403	ppb	0.82	595,477.79	9.289E+00	Pulse	0.30	3
Al	27	45	2	70.697	ppb	3.24	11,851.39	1.849E-01	Pulse	0.30	3
K	39	45	2	3490.757	ppb	0.45	888,993.86	1.387E+01	Pulse	0.30	3
Ca	44	45	3	25339.336	ppb	1.02	22,354,140.22	1.153E+01	Analog	0.30	3
V	51	45	2	0.376	ppb	2.94	1,805.73	2.816E-02	Pulse	0.30	3
Cr	52	45	2	0.479	ppb	8.68	3,112.43	4.857E-02	Pulse	0.30	3
Mn	55	45	2	148.703	ppb	1.27	361,626.53	5.641E+00	Pulse	0.30	3
Fe	56	45	2	270.443	ppb	1.17	1,085,822.34	1.694E+01	Pulse	0.30	3
Co	59	45	2	0.067	ppb	17.16	579.45	9.040E-03	Pulse	0.30	3
Ni	60	72	2	0.741	ppb	10.45	2,142.40	4.880E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	932.24	2.124E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	815.42	1.857E-02	Pulse	0.30	3
As	75	72	2	0.194	ppb	11.65	117.77	2.680E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	3.238	ppb	3.43	8,640.45	7.594E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-718.79	-2.780E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7,672.24	-2.802E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	284.46	1.038E-04	Pulse	0.30	3
Ba	137	159	3	108.188	ppb	0.52	662,221.62	1.598E-01	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	45.97	1,231.21	4.943E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-10,968.41	-4.405E-03	Pulse	0.30	3
U	238	209	3	0.161	ppb	1.32	10,542.81	4.234E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,203,523.56	0.35	58.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	64,114.38	1.85	77.9	Pulse	0.30	3
3	Sc	45	1,938,462.52	0.45	85.2	Analog	0.30	3
1	Ge	72	44,218.59	1.28	84.6	Pulse	0.30	3
2	Ge	72	43,917.60	0.93	87.1	Pulse	0.30	3
2	Rh	103	1,138,004.15	1.86	78.2	Analog	0.30	3
3	Rh	103	2,585,613.07	0.54	81.9	Analog	0.30	3
3	In	115	2,737,797.95	0.50	90.1	Analog	0.30	3
3	Tb	159	4,143,152.75	0.64	90.0	Analog	0.30	3
3	Bi	209	2,490,208.21	0.52	87.3	Analog	0.30	3

Quantitation Report

File Name	A0511106.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:20
Sample Name	N019654-006B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

not reported

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	51.80	80.00	6.778E-05	Pulse	0.30	3
B	11	6	3	75.950	ppb	0.49	387,588.00	3.285E-01	Pulse	0.30	3
Na	23	45	2	20320.526	ppb	0.95	17,466,715.43	2.981E+02	Analog	0.30	3
Mg	26	45	2	3605.280	ppb	1.13	266,147.90	4.542E+00	Pulse	0.30	3
Al	27	45	2	231.345	ppb	2.92	35,188.46	6.006E-01	Pulse	0.30	3
K	39	45	2	1407.862	ppb	1.21	336,766.13	5.747E+00	Pulse	0.30	3
Ca	44	45	3	21934.442	ppb	0.27	16,956,470.16	9.984E+00	Analog	0.30	3
V	51	45	2	1.563	ppb	2.73	5,432.28	9.272E-02	Pulse	0.30	3
Cr	52	45	2	73.823	ppb	1.87	319,650.26	5.456E+00	Pulse	0.30	3
Mn	55	45	2	7.343	ppb	1.61	16,490.83	2.815E-01	Pulse	0.30	3
Fe	56	45	2	260.944	ppb	2.09	957,565.27	1.634E+01	Pulse	0.30	3
Co	59	45	2	0.129	ppb	9.30	993.00	1.694E-02	Pulse	0.30	3
Ni	60	72	2	1.234	ppb	3.94	3,095.79	7.450E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,678.66	6.451E-02	Pulse	0.30	3
Zn	66	72	2	0.668	ppb	7.89	1,831.03	4.407E-02	Pulse	0.30	3
As	75	72	2	0.850	ppb	2.17	455.22	1.096E-02	Pulse	0.75	3
Se	78	72	1	0.109	ppb	21.55	18.89	4.667E-04	Pulse	0.30	3
Mo	95	103	2	0.794	ppb	5.14	2,045.77	1.887E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	136.72	5.429E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-3,400.74	-1.273E-03	Pulse	0.30	3
Sb	121	115	3	0.021	ppb	4.31	706.71	2.645E-04	Pulse	0.30	3
Ba	137	159	3	8.279	ppb	2.08	49,334.55	1.230E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	633.37	2.567E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	966.18	3.909E-04	Pulse	0.30	3
U	238	209	3	6.320	ppb	0.88	406,562.61	1.647E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,179,947.50	0.63	57.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	58,605.21	2.15	71.2	Pulse	0.30	3
3	Sc	45	1,698,381.42	0.91	74.7	Analog	0.30	3
1	Ge	72	40,442.10	1.62	77.4	Pulse	0.30	3
2	Ge	72	41,525.92	2.73	82.4	Pulse	0.30	3
2	Rh	103	1,083,916.32	1.60	74.5	Mix	0.30	3
3	Rh	103	2,513,288.31	1.13	79.6	Analog	0.30	3
3	In	115	2,671,042.15	1.37	87.9	Analog	0.30	3
3	Tb	159	4,012,983.90	0.89	87.2	Analog	0.30	3
3	Bi	209	2,467,650.76	1.12	86.5	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511107.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:26
Sample Name	N019610-010B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	2.22	1.917E-06	Pulse	0.30	3
B	11	6	3	58.682	ppb	0.75	294,454.00	2.558E-01	Pulse	0.30	3
Na	23	45	2	14101.113	ppb	0.92	11,739,603.16	2.073E+02	Analog	0.30	3
Mg	26	45	2	2812.811	ppb	0.31	200,759.26	3.544E+00	Pulse	0.30	3
Al	27	45	2	0.375	ppb	89.58	166.66	2.945E-03	Pulse	0.30	3
K	39	45	2	1034.890	ppb	0.37	243,210.75	4.293E+00	Pulse	0.30	3
Ca	44	45	3	18123.139	ppb	0.82	13,162,560.22	8.251E+00	Analog	0.30	3
V	51	45	2	0.891	ppb	2.33	3,180.44	5.613E-02	Pulse	0.30	3
Cr	52	45	2	42.799	ppb	1.64	179,456.55	3.169E+00	Pulse	0.30	3
Mn	55	45	2	8.662	ppb	3.78	18,769.66	3.315E-01	Pulse	0.30	3
Fe	56	45	2	1.069	ppb	7.16	5,300.24	9.362E-02	Pulse	0.30	3
Co	59	45	2	0.016	ppb	42.13	142.55	2.507E-03	Pulse	0.30	3
Ni	60	72	2	0.413	ppb	9.49	1,268.94	3.169E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,042.45	2.605E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	563.96	1.405E-02	Pulse	0.30	3
As	75	72	2	0.301	ppb	4.08	161.62	4.033E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	2.820E-05	Pulse	0.30	3
Mo	95	103	2	0.543	ppb	10.50	1,381.23	1.300E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	165.01	6.782E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,132.62	-8.333E-04	Pulse	0.30	3
Sb	121	115	3	0.006	ppb	32.61	412.24	1.612E-04	Pulse	0.30	3
Ba	137	159	3	17.670	ppb	1.61	101,755.39	2.616E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	468.92	1.960E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-3,068.51	-1.283E-03	Pulse	0.30	3
U	238	209	3	4.939	ppb	1.43	307,956.81	1.288E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,151,368.22	1.29	56.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	56,648.30	1.79	68.8	Pulse	0.30	3
3	Sc	45	1,595,446.87	1.39	70.1	Analog	0.30	3
1	Ge	72	38,546.57	1.95	73.8	Pulse	0.30	3
2	Ge	72	40,076.77	2.35	79.5	Pulse	0.30	3
2	Rh	103	1,062,407.03	0.74	73.0	Pulse	0.30	3
3	Rh	103	2,430,223.87	0.32	77.0	Analog	0.30	3
3	In	115	2,559,372.32	0.94	84.2	Analog	0.30	3
3	Tb	159	3,889,709.11	0.99	84.5	Analog	0.30	3
3	Bi	209	2,391,912.57	0.63	83.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511108.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:32
Sample Name	N019610-011B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	4.44	3.946E-06	Pulse	0.30	3
B	11	6	3	55.873	ppb	0.73	274,733.02	2.439E-01	Pulse	0.30	3
Na	23	45	2	14215.136	ppb	2.30	11,913,615.93	2.089E+02	Analog	0.30	3
Mg	26	45	2	3161.323	ppb	2.32	227,126.09	3.983E+00	Pulse	0.30	3
Al	27	45	2	4.652	ppb	13.73	799.64	1.401E-02	Pulse	0.30	3
K	39	45	2	794.266	ppb	3.08	191,341.92	3.356E+00	Pulse	0.30	3
Ca	44	45	3	19305.581	ppb	0.06	13,725,830.49	8.788E+00	Analog	0.30	3
V	51	45	2	0.942	ppb	4.95	3,362.71	5.895E-02	Pulse	0.30	3
Cr	52	45	2	72.131	ppb	1.39	304,067.90	5.331E+00	Pulse	0.30	3
Mn	55	45	2	34.465	ppb	1.50	74,702.50	1.310E+00	Pulse	0.30	3
Fe	56	45	2	6.934	ppb	4.95	26,238.46	4.604E-01	Pulse	0.30	3
Co	59	45	2	0.010	ppb	41.10	97.79	1.706E-03	Pulse	0.30	3
Ni	60	72	2	0.348	ppb	12.19	1,111.87	2.827E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,230.79	3.128E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	604.16	1.533E-02	Pulse	0.30	3
As	75	72	2	0.323	ppb	12.60	169.55	4.313E-03	Pulse	0.75	3
Se	78	72	1	0.019	ppb	69.16	4.44	1.157E-04	Pulse	0.30	3
Mo	95	103	2	0.788	ppb	0.87	1,987.99	1.872E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	212.77	8.982E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,169.42	-8.584E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	290.01	1.148E-04	Pulse	0.30	3
Ba	137	159	3	28.731	ppb	0.64	163,036.75	4.250E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	358.91	1.519E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,696.69	-1.142E-03	Pulse	0.30	3
U	238	209	3	4.764	ppb	1.80	293,187.65	1.242E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,126,353.75	0.91	54.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	57,054.07	3.28	69.3	Pulse	0.30	3
3	Sc	45	1,561,813.22	0.25	68.7	Analog	0.30	3
1	Ge	72	38,432.93	0.47	73.6	Pulse	0.30	3
2	Ge	72	39,349.44	1.72	78.1	Pulse	0.30	3
2	Rh	103	1,061,806.20	1.24	73.0	Pulse	0.30	3
3	Rh	103	2,368,183.30	0.45	75.0	Analog	0.30	3
3	In	115	2,527,252.06	0.46	83.2	Analog	0.30	3
3	Tb	159	3,836,355.71	0.41	83.4	Analog	0.30	3
3	Bi	209	2,361,135.40	1.47	82.7	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511109.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:37
Sample Name	N019610-012B,SAMP,50
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	4.44	4.020E-06	Pulse	0.30	3
B	11	6	3	11.498	ppb	5.12	62,813.75	5.702E-02	Pulse	0.30	3
Na	23	45	2	1573.534	ppb	1.28	1,331,976.92	2.430E+01	Analog	0.30	3
Mg	26	45	2	284.866	ppb	0.51	19,758.89	3.604E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	70.26	1.277E-03	Pulse	0.30	3
K	39	45	2	108.295	ppb	2.73	37,369.47	6.817E-01	Pulse	0.30	3
Ca	44	45	3	1562.485	ppb	0.86	1,078,716.02	7.199E-01	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	216.68	3.951E-03	Pulse	0.30	3
Cr	52	45	2	0.063	ppb	16.78	981.73	1.790E-02	Pulse	0.30	3
Mn	55	45	2	120.294	ppb	0.52	250,184.61	4.564E+00	Pulse	0.30	3
Fe	56	45	2	77.947	ppb	0.14	268,675.01	4.901E+00	Pulse	0.30	3
Co	59	45	2	0.018	ppb	7.31	148.20	2.703E-03	Pulse	0.30	3
Ni	60	72	2	0.332	ppb	10.95	1,076.77	2.747E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	860.31	2.192E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	553.61	1.412E-02	Pulse	0.30	3
As	75	72	2	1.756	ppb	6.98	878.64	2.240E-02	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	1.915	ppb	2.76	4,812.04	4.503E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	569.65	2.373E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-59.32	-2.362E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	134.45	5.353E-05	Pulse	0.30	3
Ba	137	159	3	10.039	ppb	1.08	56,441.19	1.489E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	267.79	1.116E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,799.07	7.495E-04	Pulse	0.30	3
U	238	209	3	0.189	ppb	2.75	11,940.38	4.975E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,101,875.06	1.12	53.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	54,820.02	0.95	66.6	Pulse	0.30	3
3	Sc	45	1,498,439.79	1.03	65.9	Analog	0.30	3
1	Ge	72	37,960.64	3.07	72.7	Pulse	0.30	3
2	Ge	72	39,239.25	2.19	77.9	Pulse	0.30	3
2	Rh	103	1,068,480.78	0.40	73.4	Pulse	0.30	3
3	Rh	103	2,400,049.41	0.22	76.0	Analog	0.30	3
3	In	115	2,511,540.87	0.39	82.6	Analog	0.30	3
3	Tb	159	3,789,349.18	0.13	82.3	Analog	0.30	3
3	Bi	209	2,400,322.55	0.61	84.1	Analog	0.30	3

Quantitation Report

File Name	A0511110.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:43
Sample Name	CCV7,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	18.275	ppb	0.70	120,002.32	1.036E-01	Pulse	0.30	3
B	11	6	3	184.314	ppb	1.06	909,123.90	7.849E-01	Pulse	0.30	3
Na	23	45	2	315.112	ppb	2.43	346,655.61	5.921E+00	Pulse	0.30	3
Mg	26	45	2	192.181	ppb	3.34	14,265.46	2.437E-01	Pulse	0.30	3
Al	27	45	2	20.895	ppb	4.11	3,282.36	5.604E-02	Pulse	0.30	3
K	39	45	2	224.163	ppb	4.58	66,339.79	1.133E+00	Pulse	0.30	3
Ca	44	45	3	233.894	ppb	0.52	179,209.65	1.158E-01	Pulse	0.30	3
V	51	45	2	20.473	ppb	2.32	65,653.02	1.121E+00	Pulse	0.30	3
Cr	52	45	2	19.490	ppb	2.86	84,889.08	1.450E+00	Pulse	0.30	3
Mn	55	45	2	20.521	ppb	2.85	45,725.78	7.811E-01	Pulse	0.30	3
Fe	56	45	2	21.598	ppb	2.73	80,634.22	1.377E+00	Pulse	0.30	3
Co	59	45	2	19.887	ppb	2.41	149,385.24	2.552E+00	Pulse	0.30	3
Ni	60	72	2	18.268	ppb	2.86	39,207.12	9.631E-01	Pulse	0.30	3
Cu	63	72	2	17.181	ppb	1.76	107,875.03	2.650E+00	Pulse	0.30	3
Zn	66	72	2	18.456	ppb	2.41	18,336.04	4.505E-01	Pulse	0.30	3
As	75	72	2	19.355	ppb	2.32	9,953.79	2.446E-01	Pulse	0.75	3
Se	78	72	1	20.119	ppb	3.27	3,083.76	7.835E-02	Pulse	0.30	3
Mo	95	103	2	20.207	ppb	0.41	53,863.56	4.723E-02	Pulse	0.30	3
Ag	107	103	3	19.157	ppb	0.85	402,506.68	1.616E-01	Pulse	0.30	3
Cd	111	115	3	19.003	ppb	1.28	94,155.24	3.566E-02	Pulse	0.30	3
Sb	121	115	3	20.110	ppb	1.04	369,573.16	1.400E-01	Pulse	0.30	3
Ba	137	159	3	21.679	ppb	1.31	128,570.53	3.208E-02	Pulse	0.30	3
Tl	205	209	3	19.949	ppb	1.77	859,694.79	3.383E-01	Pulse	0.30	3
Pb	208	209	3	20.120	ppb	1.56	1,188,161.51	4.676E-01	Pulse	0.30	3
U	238	209	3	20.061	ppb	1.13	1,328,695.36	5.228E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,158,327.43	0.53	56.3	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	58,562.91	2.05	71.1	Pulse	0.30	3
3	Sc	45	1,548,068.81	0.55	68.1	Analog	0.30	3
1	Ge	72	39,361.78	0.31	75.3	Pulse	0.30	3
2	Ge	72	40,714.03	2.23	80.8	Pulse	0.30	3
2	Rh	103	1,140,456.72	0.71	78.4	Analog	0.30	3
3	Rh	103	2,490,725.07	0.54	78.9	Analog	0.30	3
3	In	115	2,640,516.01	0.95	86.9	Analog	0.30	3
3	Tb	159	4,007,505.88	0.86	87.1	Analog	0.30	3
3	Bi	209	2,541,534.55	1.26	89.1	Analog	0.30	3

Quantitation Report

File Name	A0511111.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:48
Sample Name	CCB7,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	35.56	3.181E-05	Pulse	0.30	3
B	11	6	3	9.621	ppb	2.44	54,824.44	4.912E-02	Pulse	0.30	3
Na	23	45	2	63.564	ppb	5.72	126,007.42	2.247E+00	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	81.11	1.445E-03	Pulse	0.30	3
Al	27	45	2	0.043	ppb	489.52	116.66	2.085E-03	Pulse	0.30	3
K	39	45	2	17.956	ppb	14.11	18,478.62	3.296E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	7,785.49	5.139E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	185.56	3.306E-03	Pulse	0.30	3
Cr	52	45	2	0.031	ppb	7.90	871.03	1.553E-02	Pulse	0.30	3
Mn	55	45	2	0.066	ppb	50.38	312.52	5.579E-03	Pulse	0.30	3
Fe	56	45	2	0.062	ppb	38.03	1,719.76	3.065E-02	Pulse	0.30	3
Co	59	45	2	0.003	ppb	105.74	45.42	8.072E-04	Pulse	0.30	3
Ni	60	72	2	0.198	ppb	1.94	808.81	2.045E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	904.15	2.286E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	460.62	1.165E-02	Pulse	0.30	3
As	75	72	2	0.004	ppb	72.51	11.11	2.808E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	2.876E-05	Pulse	0.30	3
Mo	95	103	2	0.078	ppb	15.23	234.46	2.124E-04	Pulse	0.30	3
Ag	107	103	3	0.830	ppb	14.42	18,711.25	7.565E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	244.33	9.469E-05	Pulse	0.30	3
Sb	121	115	3	0.028	ppb	10.58	817.83	3.169E-04	Pulse	0.30	3
Ba	137	159	3	0.015	ppb	16.98	359.98	9.143E-05	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	792.27	3.199E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	2,791.20	1.127E-03	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.005	ppb	19.40	435.45	1.759E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,116,327.88	1.34	54.3	Analog	0.30	3
2	Sc	45	56,082.09	1.33	68.1	Pulse	0.30	3
3	Sc	45	1,515,073.87	1.26	66.6	Analog	0.30	3
1	Ge	72	38,941.79	0.85	74.5	Pulse	0.30	3
2	Ge	72	39,546.64	1.74	78.5	Pulse	0.30	3
2	Rh	103	1,104,377.07	0.76	75.9	Pulse	0.30	3
3	Rh	103	2,472,621.82	0.70	78.3	Analog	0.30	3
3	In	115	2,580,671.75	0.15	84.9	Analog	0.30	3
3	Tb	159	3,937,143.66	0.32	85.6	Analog	0.30	3
3	Bi	209	2,476,728.30	0.72	86.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511112.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:54
Sample Name	N019610-013B,SAMP,50
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	5.335E-06	Pulse	0.30	3
B	11	6	3	10.146	ppb	4.05	53,379.05	5.133E-02	Pulse	0.30	3
Na	23	45	2	1613.455	ppb	2.37	1,271,914.45	2.488E+01	Analog	0.30	3
Mg	26	45	2	296.281	ppb	1.09	19,166.01	3.748E-01	Pulse	0.30	3
Al	27	45	2	0.171	ppb	94.50	123.65	2.416E-03	Pulse	0.30	3
K	39	45	2	108.308	ppb	5.02	34,848.27	6.817E-01	Pulse	0.30	3
Ca	44	45	3	1590.065	ppb	0.89	1,017,562.62	7.325E-01	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	208.90	4.094E-03	Pulse	0.30	3
Cr	52	45	2	0.041	ppb	55.51	828.49	1.623E-02	Pulse	0.30	3
Mn	55	45	2	124.643	ppb	1.09	241,764.63	4.729E+00	Pulse	0.30	3
Fe	56	45	2	81.164	ppb	1.33	260,849.49	5.102E+00	Pulse	0.30	3
Co	59	45	2	0.017	ppb	23.66	132.74	2.595E-03	Pulse	0.30	3
Ni	60	72	2	0.327	ppb	11.93	1,012.49	2.719E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	754.44	2.027E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	424.01	1.137E-02	Pulse	0.30	3
As	75	72	2	1.757	ppb	4.03	835.09	2.241E-02	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	3.105E-05	Pulse	0.30	3
Mo	95	103	2	2.000	ppb	2.25	4,844.24	4.702E-03	Pulse	0.30	3
Ag	107	103	3	0.082	ppb	13.50	2,924.62	1.282E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-24.75	-1.015E-05	Pulse	0.30	3
Sb	121	115	3	0.003	ppb	26.46	344.46	1.417E-04	Pulse	0.30	3
Ba	137	159	3	10.270	ppb	0.65	56,612.89	1.523E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	374.47	1.584E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,905.35	8.062E-04	Pulse	0.30	3
U	238	209	3	0.194	ppb	0.82	12,078.82	5.110E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,040,071.92	0.93	50.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	51,136.16	2.63	62.1	Pulse	0.30	3
3	Sc	45	1,389,263.50	0.49	61.1	Analog	0.30	3
1	Ge	72	36,524.07	1.94	69.9	Pulse	0.30	3
2	Ge	72	37,260.24	1.69	73.9	Pulse	0.30	3
2	Rh	103	1,030,115.18	1.43	70.8	Pulse	0.30	3
3	Rh	103	2,281,871.18	0.23	72.3	Analog	0.30	3
3	In	115	2,430,566.76	1.00	80.0	Analog	0.30	3
3	Tb	159	3,716,173.69	1.00	80.8	Analog	0.30	3
3	Bi	209	2,363,567.00	0.91	82.8	Analog	0.30	3

Quantitation Report

File Name	A0511113.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 19:59
Sample Name	N019610-014B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	not reported
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	8.795E-06	Pulse	0.30	3
B	11	6	3	40.113	ppb	1.51	178,990.79	1.775E-01	Pulse	0.30	3
Na	23	45	2	16669.119	ppb	0.83	12,547,153.28	2.448E+02	Analog	0.30	3
Mg	26	45	2	2548.178	ppb	0.47	164,595.59	3.211E+00	Pulse	0.30	3
Al	27	45	2	0.453	ppb	64.47	161.37	3.145E-03	Pulse	0.30	3
K	39	45	2	668.952	ppb	0.84	146,970.65	2.867E+00	Pulse	0.30	3
Ca	44	45	3	15387.448	ppb	0.93	9,927,033.39	7.007E+00	Analog	0.30	3
V	51	45	2	1.279	ppb	2.43	3,960.65	7.727E-02	Pulse	0.30	3
Cr	52	45	2	59.393	ppb	0.46	225,143.76	4.392E+00	Pulse	0.30	3
Mn	55	45	2	0.651	ppb	24.55	1,419.73	2.776E-02	Pulse	0.30	3
Fe	56	45	2	0.812	ppb	5.57	3,975.16	7.757E-02	Pulse	0.30	3
Co	59	45	2	0.005	ppb	45.07	55.19	1.079E-03	Pulse	0.30	3
Ni	60	72	2	0.336	ppb	10.56	1,016.68	2.768E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,057.13	2.878E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	475.93	1.295E-02	Pulse	0.30	3
As	75	72	2	0.171	ppb	18.12	87.95	2.391E-03	Pulse	0.75	3
Se	78	72	1	0.070	ppb	51.81	11.11	3.148E-04	Pulse	0.30	3
Mo	95	103	2	0.661	ppb	10.20	1,575.70	1.575E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	826.40	3.658E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,255.47	-9.356E-04	Pulse	0.30	3
Sb	121	115	3	0.005	ppb	43.07	370.02	1.535E-04	Pulse	0.30	3
Ba	137	159	3	14.695	ppb	1.30	80,810.74	2.177E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	325.57	1.414E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,829.04	-1.229E-03	Pulse	0.30	3
U	238	209	3	3.309	ppb	0.76	198,546.27	8.627E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,008,204.23	0.61	49.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	51,265.30	1.65	62.3	Pulse	0.30	3
3	Sc	45	1,416,859.44	0.71	62.3	Analog	0.30	3
1	Ge	72	35,204.37	1.18	67.4	Pulse	0.30	3
2	Ge	72	36,732.27	1.28	72.9	Pulse	0.30	3
2	Rh	103	999,956.95	0.94	68.7	Pulse	0.30	3
3	Rh	103	2,258,988.08	0.41	71.6	Analog	0.30	3
3	In	115	2,410,786.78	0.25	79.3	Analog	0.30	3
3	Tb	159	3,711,929.15	0.52	80.7	Analog	0.30	3
3	Bi	209	2,301,430.80	0.47	80.6	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511114.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:05
Sample Name	N019610-015B,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	8.572E-06	Pulse	0.30	3
B	11	6	3	23.906	ppb	0.96	113,364.35	1.093E-01	Pulse	0.30	3
Na	23	45	2	9456.159	ppb	0.32	7,110,355.66	1.394E+02	Analog	0.30	3
Mg	26	45	2	1805.071	ppb	0.93	116,016.02	2.275E+00	Pulse	0.30	3
Al	27	45	2	7.504	ppb	3.86	1,090.74	2.139E-02	Pulse	0.30	3
K	39	45	2	460.127	ppb	0.60	104,707.59	2.053E+00	Pulse	0.30	3
Ca	44	45	3	10889.317	ppb	0.40	6,943,784.69	4.961E+00	Analog	0.30	3
V	51	45	2	0.576	ppb	0.13	1,989.09	3.900E-02	Pulse	0.30	3
Cr	52	45	2	144.049	ppb	0.27	542,292.19	1.063E+01	Pulse	0.30	3
Mn	55	45	2	1.759	ppb	2.88	3,559.78	6.978E-02	Pulse	0.30	3
Fe	56	45	2	11.296	ppb	1.34	37,389.20	7.332E-01	Pulse	0.30	3
Co	59	45	2	0.009	ppb	20.37	81.59	1.597E-03	Pulse	0.30	3
Ni	60	72	2	0.344	ppb	4.25	1,041.72	2.806E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	857.89	2.311E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	556.87	1.500E-02	Pulse	0.30	3
As	75	72	2	0.085	ppb	22.53	48.54	1.308E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.227	ppb	9.23	568.92	5.625E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	793.73	3.529E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,210.93	-5.072E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	258.90	1.085E-04	Pulse	0.30	3
Ba	137	159	3	7.206	ppb	0.25	39,695.39	1.071E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	298.91	1.287E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-539.83	-2.323E-04	Pulse	0.30	3
U	238	209	3	3.881	ppb	0.71	235,119.74	1.012E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,037,366.29	0.30	50.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	51,002.33	1.60	61.9	Pulse	0.30	3
3	Sc	45	1,399,616.61	0.41	61.5	Analog	0.30	3
1	Ge	72	35,505.06	0.85	68.0	Pulse	0.30	3
2	Ge	72	37,124.05	0.30	73.7	Pulse	0.30	3
2	Rh	103	1,010,980.57	0.67	69.5	Pulse	0.30	3
3	Rh	103	2,249,047.22	0.51	71.2	Analog	0.30	3
3	In	115	2,387,233.14	0.39	78.5	Analog	0.30	3
3	Tb	159	3,706,263.32	0.56	80.5	Analog	0.30	3
3	Bi	209	2,323,591.34	0.98	81.4	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511115.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:11
Sample Name	N019611-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	4.45	4.356E-06	Pulse	0.30	3
B	11	6	3	69.683	ppb	1.39	308,769.33	3.021E-01	Pulse	0.30	3
Na	23	45	2	16364.714	ppb	1.98	12,282,719.40	2.403E+02	Analog	0.30	3
Mg	26	45	2	3048.576	ppb	2.26	196,301.59	3.841E+00	Pulse	0.30	3
Al	27	45	2	1.048	ppb	11.82	239.33	4.684E-03	Pulse	0.30	3
K	39	45	2	854.466	ppb	2.06	183,510.04	3.590E+00	Pulse	0.30	3
Ca	44	45	3	18565.158	ppb	1.03	11,945,621.76	8.452E+00	Analog	0.30	3
V	51	45	2	1.018	ppb	3.14	3,222.67	6.306E-02	Pulse	0.30	3
Cr	52	45	2	67.143	ppb	1.86	253,681.59	4.963E+00	Pulse	0.30	3
Mn	55	45	2	0.251	ppb	11.24	642.50	1.259E-02	Pulse	0.30	3
Fe	56	45	2	1.019	ppb	5.79	4,626.27	9.049E-02	Pulse	0.30	3
Co	59	45	2	0.004	ppb	53.16	45.62	8.881E-04	Pulse	0.30	3
Ni	60	72	2	0.440	ppb	12.87	1,213.89	3.308E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,064.65	2.902E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	540.64	1.474E-02	Pulse	0.30	3
As	75	72	2	0.109	ppb	12.54	58.96	1.608E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	3.206E-05	Pulse	0.30	3
Mo	95	103	2	0.426	ppb	3.35	1,031.19	1.027E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	342.75	1.536E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,225.01	-9.269E-04	Pulse	0.30	3
Sb	121	115	3	0.001	ppb	228.22	310.02	1.291E-04	Pulse	0.30	3
Ba	137	159	3	21.366	ppb	0.23	117,449.03	3.162E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	266.68	1.148E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-3,151.56	-1.356E-03	Pulse	0.30	3
U	238	209	3	5.462	ppb	0.46	330,877.66	1.424E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,022,209.07	1.08	49.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	51,131.62	3.06	62.1	Pulse	0.30	3
3	Sc	45	1,413,528.16	1.44	62.2	Analog	0.30	3
1	Ge	72	34,837.93	0.65	66.7	Pulse	0.30	3
2	Ge	72	36,682.23	0.60	72.8	Pulse	0.30	3
2	Rh	103	1,004,124.19	0.76	69.0	Pulse	0.30	3
3	Rh	103	2,235,853.00	1.31	70.8	Analog	0.30	3
3	In	115	2,400,377.76	0.59	79.0	Analog	0.30	3
3	Tb	159	3,714,183.80	0.40	80.7	Analog	0.30	3
3	Bi	209	2,323,915.24	0.85	81.4	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511116.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:16
Sample Name	N019611-002B,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	4.44	4.489E-06	Pulse	0.30	3
B	11	6	3	18.289	ppb	1.17	85,462.09	8.563E-02	Pulse	0.30	3
Na	23	45	2	6071.426	ppb	0.89	4,497,500.73	8.999E+01	Analog	0.30	3
Mg	26	45	2	1126.596	ppb	1.09	70,992.10	1.420E+00	Pulse	0.30	3
Al	27	45	2	0.189	ppb	110.75	122.93	2.461E-03	Pulse	0.30	3
K	39	45	2	554.505	ppb	1.48	121,002.36	2.421E+00	Pulse	0.30	3
Ca	44	45	3	7524.402	ppb	1.16	4,696,266.84	3.431E+00	Analog	0.30	3
V	51	45	2	0.225	ppb	13.73	995.63	1.993E-02	Pulse	0.30	3
Cr	52	45	2	20.005	ppb	1.22	74,369.61	1.488E+00	Pulse	0.30	3
Mn	55	45	2	127.301	ppb	0.98	241,371.60	4.830E+00	Pulse	0.30	3
Fe	56	45	2	3.464	ppb	1.42	12,165.99	2.434E-01	Pulse	0.30	3
Co	59	45	2	0.019	ppb	5.05	144.21	2.885E-03	Pulse	0.30	3
Ni	60	72	2	0.384	ppb	6.49	1,103.61	3.015E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	851.80	2.327E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	462.14	1.262E-02	Pulse	0.30	3
As	75	72	2	3.497	ppb	3.37	1,624.34	4.437E-02	Pulse	0.75	3
Se	78	72	1	0.022	ppb	260.08	4.44	1.283E-04	Pulse	0.30	3
Mo	95	103	2	2.329	ppb	5.60	5,518.94	5.471E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	442.16	1.976E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-628.64	-2.619E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	271.12	1.129E-04	Pulse	0.30	3
Ba	137	159	3	14.518	ppb	0.74	79,595.87	2.151E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	256.68	1.087E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	270.77	1.147E-04	Pulse	0.30	3
U	238	209	3	0.698	ppb	2.09	43,054.44	1.824E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	998,117.17	0.71	48.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	49,982.57	1.35	60.7	Pulse	0.30	3
3	Sc	45	1,368,905.35	1.71	60.2	Analog	0.30	3
1	Ge	72	34,446.13	0.69	65.9	Pulse	0.30	3
2	Ge	72	36,606.41	0.56	72.6	Pulse	0.30	3
2	Rh	103	1,008,478.80	0.59	69.3	Pulse	0.30	3
3	Rh	103	2,237,776.27	0.84	70.9	Analog	0.30	3
3	In	115	2,400,757.92	0.04	79.0	Analog	0.30	3
3	Tb	159	3,700,759.01	1.17	80.4	Analog	0.30	3
3	Bi	209	2,360,414.39	0.32	82.7	Analog	0.30	3

Quantitation Report

File Name	A0511117.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:22
Sample Name	N019611-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

not reported

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	1.111E-05	Pulse	0.30	3
B	11	6	3	68.657	ppb	0.67	297,263.92	2.978E-01	Pulse	0.30	3
Na	23	45	2	16364.358	ppb	1.11	12,023,637.04	2.403E+02	Analog	0.30	3
Mg	26	45	2	3047.186	ppb	1.35	192,086.88	3.839E+00	Pulse	0.30	3
Al	27	45	2	1.530	ppb	54.23	295.38	5.931E-03	Pulse	0.30	3
K	39	45	2	852.965	ppb	1.47	179,337.57	3.584E+00	Pulse	0.30	3
Ca	44	45	3	18323.046	ppb	0.18	11,559,258.99	8.342E+00	Analog	0.30	3
V	51	45	2	0.980	ppb	4.28	3,051.53	6.100E-02	Pulse	0.30	3
Cr	52	45	2	66.719	ppb	0.96	246,777.76	4.932E+00	Pulse	0.30	3
Mn	55	45	2	0.347	ppb	17.16	811.19	1.624E-02	Pulse	0.30	3
Fe	56	45	2	0.693	ppb	4.24	3,509.24	7.013E-02	Pulse	0.30	3
Co	59	45	2	0.006	ppb	66.56	56.26	1.125E-03	Pulse	0.30	3
Ni	60	72	2	0.487	ppb	7.33	1,295.10	3.552E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,019.00	2.792E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	444.64	1.217E-02	Pulse	0.30	3
As	75	72	2	0.152	ppb	16.53	78.09	2.145E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	3.226E-05	Pulse	0.30	3
Mo	95	103	2	0.390	ppb	7.59	938.95	9.416E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	231.19	1.051E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,133.89	-9.000E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	250.01	1.055E-04	Pulse	0.30	3
Ba	137	159	3	21.047	ppb	0.60	115,393.94	3.115E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	274.46	1.178E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,713.93	-1.164E-03	Pulse	0.30	3
U	238	209	3	5.441	ppb	0.28	330,735.26	1.418E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	998,359.74	0.83	48.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	50,042.50	2.03	60.8	Pulse	0.30	3
3	Sc	45	1,385,742.22	0.41	60.9	Analog	0.30	3
1	Ge	72	34,752.35	0.87	66.5	Pulse	0.30	3
2	Ge	72	36,475.07	2.01	72.4	Pulse	0.30	3
2	Rh	103	996,995.06	0.61	68.5	Pulse	0.30	3
3	Rh	103	2,199,803.25	0.30	69.7	Analog	0.30	3
3	In	115	2,370,982.36	0.31	78.0	Analog	0.30	3
3	Tb	159	3,704,283.90	0.60	80.5	Analog	0.30	3
3	Bi	209	2,331,798.18	0.86	81.7	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511118.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:27
Sample Name	N019611-005B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	18.89	1.812E-05	Pulse	0.30	3
B	11	6	3	45.453	ppb	1.72	207,933.01	2.000E-01	Pulse	0.30	3
Na	23	45	2	20931.211	ppb	1.14	16,299,586.70	3.070E+02	Analog	0.30	3
Mg	26	45	2	3838.483	ppb	1.15	256,742.25	4.836E+00	Pulse	0.30	3
Al	27	45	2	24.280	ppb	4.41	3,440.81	6.480E-02	Pulse	0.30	3
K	39	45	2	876.675	ppb	1.34	195,212.75	3.677E+00	Pulse	0.30	3
Ca	44	45	3	22897.854	ppb	0.89	15,478,985.74	1.042E+01	Analog	0.30	3
V	51	45	2	1.016	ppb	1.86	3,343.81	6.298E-02	Pulse	0.30	3
Cr	52	45	2	82.588	ppb	0.66	323,980.11	6.102E+00	Pulse	0.30	3
Mn	55	45	2	1.721	ppb	24.06	3,623.15	6.833E-02	Pulse	0.30	3
Fe	56	45	2	35.240	ppb	2.16	118,409.53	2.230E+00	Pulse	0.30	3
Co	59	45	2	0.024	ppb	28.40	185.56	3.492E-03	Pulse	0.30	3
Ni	60	72	2	0.344	ppb	9.21	1,082.47	2.810E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	809.41	2.101E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	511.09	1.326E-02	Pulse	0.30	3
As	75	72	2	0.240	ppb	8.88	125.46	3.257E-03	Pulse	0.75	3
Se	78	72	1	0.036	ppb	131.40	6.67	1.819E-04	Pulse	0.30	3
Mo	95	103	2	0.402	ppb	1.20	1,011.19	9.702E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	175.52	7.395E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-3,020.79	-1.202E-03	Pulse	0.30	3
Sb	121	115	3	0.012	ppb	30.02	513.36	2.042E-04	Pulse	0.30	3
Ba	137	159	3	14.348	ppb	1.25	82,701.39	2.126E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	303.35	1.259E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-3,831.20	-1.590E-03	Pulse	0.30	3
U	238	209	3	7.512	ppb	0.62	471,713.42	1.958E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,039,645.77	1.54	50.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	53,097.96	1.16	64.5	Pulse	0.30	3
3	Sc	45	1,485,263.80	0.39	65.3	Analog	0.30	3
1	Ge	72	36,518.57	1.27	69.9	Pulse	0.30	3
2	Ge	72	38,525.15	0.25	76.4	Pulse	0.30	3
2	Rh	103	1,042,307.02	0.48	71.6	Pulse	0.30	3
3	Rh	103	2,373,584.23	0.52	75.2	Analog	0.30	3
3	In	115	2,512,641.27	0.71	82.7	Analog	0.30	3
3	Tb	159	3,890,710.95	0.76	84.5	Analog	0.30	3
3	Bi	209	2,409,106.40	0.53	84.4	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0511119.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:33
Sample Name	N019611-007B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	4.45	4.528E-06	Pulse	0.30	3
B	11	6	3	24.858	ppb	1.66	111,504.80	1.133E-01	Pulse	0.30	3
Na	23	45	2	10751.080	ppb	0.87	8,002,966.89	1.583E+02	Analog	0.30	3
Mg	26	45	2	1623.668	ppb	0.26	103,444.36	2.046E+00	Pulse	0.30	3
Al	27	45	2	0.466	ppb	31.33	160.80	3.179E-03	Pulse	0.30	3
K	39	45	2	868.672	ppb	1.03	184,276.48	3.646E+00	Pulse	0.30	3
Ca	44	45	3	11020.719	ppb	0.81	6,888,584.41	5.021E+00	Analog	0.30	3
V	51	45	2	0.906	ppb	5.24	2,879.26	5.695E-02	Pulse	0.30	3
Cr	52	45	2	52.403	ppb	0.70	195,955.15	3.877E+00	Pulse	0.30	3
Mn	55	45	2	2.002	ppb	1.47	3,992.17	7.898E-02	Pulse	0.30	3
Fe	56	45	2	0.326	ppb	16.77	2,385.52	4.719E-02	Pulse	0.30	3
Co	59	45	2	0.090	ppb	6.84	603.93	1.195E-02	Pulse	0.30	3
Ni	60	72	2	1.076	ppb	3.66	2,420.22	6.626E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,294.83	3.547E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	566.78	1.551E-02	Pulse	0.30	3
As	75	72	2	0.708	ppb	5.46	334.81	9.168E-03	Pulse	0.75	3
Se	78	72	1	0.244	ppb	21.15	34.45	9.908E-04	Pulse	0.30	3
Mo	95	103	2	1.263	ppb	6.74	3,015.96	2.981E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	227.28	1.023E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,294.09	-5.450E-04	Pulse	0.30	3
Sb	121	115	3	0.027	ppb	5.72	733.38	3.088E-04	Pulse	0.30	3
Ba	137	159	3	21.458	ppb	0.67	116,843.56	3.176E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	296.68	1.269E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,244.30	-5.319E-04	Pulse	0.30	3
U	238	209	3	6.084	ppb	0.09	370,959.73	1.586E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	984,306.48	0.68	47.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	50,548.77	1.03	61.4	Pulse	0.30	3
3	Sc	45	1,372,038.87	1.05	60.3	Analog	0.30	3
1	Ge	72	34,766.93	0.92	66.6	Pulse	0.30	3
2	Ge	72	36,521.75	0.93	72.5	Pulse	0.30	3
2	Rh	103	1,011,490.57	1.06	69.5	Pulse	0.30	3
3	Rh	103	2,219,863.80	0.46	70.3	Analog	0.30	3
3	In	115	2,374,396.96	0.49	78.1	Analog	0.30	3
3	Tb	159	3,679,328.97	0.45	80.0	Analog	0.30	3
3	Bi	209	2,338,893.61	0.28	82.0	Analog	0.30	3

Quantitation Report

File Name	A0511120.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:39
Sample Name	N019628-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

not reported

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.010	ppb	119.16	22.22	1.069E-04	Pulse	0.30	3
B	11	6	3	3358.908	ppb	9.66	2,956,902.18	1.416E+01	Analog	0.30	3
Na	23	45	2	3197880.633	ppb	2.03	2,742,132,581.36	4.670E+04	Analog	0.30	3
Mg	26	45	2	32462.303	ppb	1.78	2,400,533.04	4.088E+01	Analog	0.30	3
Al	27	45	2	3.930	ppb	6.91	712.88	1.214E-02	Pulse	0.30	3
K	39	45	2	43180.247	ppb	2.35	9,900,596.66	1.686E+02	Analog	0.30	3
Ca	44	45	3	317044.373	ppb	0.61	217,359,498.98	1.442E+02	Analog	0.30	3
V	51	45	2	3.659	ppb	1.29	12,140.40	2.067E-01	Pulse	0.30	3
Cr	52	45	2	0.544	ppb	9.47	3,135.81	5.338E-02	Pulse	0.30	3
Mn	55	45	2	16.073	ppb	3.11	35,964.30	6.124E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-234,812.53	-3.999E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-2,954.71	-5.033E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	315.39	9.035E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-47,471.92	-1.349E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,325.91	-3.770E-02	Pulse	0.30	3
As	75	72	2	1.592	ppb	3.89	714.61	2.032E-02	Pulse	0.75	3
Se	78	72	1	0.295	ppb	12.03	36.67	1.190E-03	Pulse	0.30	3
Mo	95	103	2	10.654	ppb	0.79	20,580.56	2.492E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-5,622.98	-3.283E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-208.84	-1.158E-04	Pulse	0.30	3
Sb	121	115	3	0.151	ppb	5.10	2,113.56	1.173E-03	Pulse	0.30	3
Ba	137	159	3	77.465	ppb	0.23	317,800.58	1.145E-01	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	3477.62	578.92	3.917E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-20,589.73	-1.392E-02	Pulse	0.30	3
U	238	209	3	0.506	ppb	0.71	19,554.96	1.322E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	210,106.48	9.02	10.2	Analog	0.30	3
2	Sc	45	58,724.48	3.10	71.3	Pulse	0.30	3
3	Sc	45	1,507,637.53	1.61	66.3	Analog	0.30	3
1	Ge	72	30,863.34	3.30	59.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	35,181.00	2.72	69.8	Pulse	0.30	3
2	Rh	103	826,018.03	2.82	56.8	Pulse	0.30	3
3	Rh	103	1,712,827.39	0.56	54.3	Analog	0.30	3
3	In	115	1,802,283.53	0.51	59.3	Analog	0.30	3
3	Tb	159	2,776,337.43	0.77	60.3	Analog	0.30	3
3	Bi	209	1,478,837.32	0.46	51.8	Analog	0.30	3

Quantitation Report

File Name	A0511121.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:44
Sample Name	CCV8,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	18.731	ppb	0.31	155,290.77	1.062E-01	Pulse	0.30	3
B	11	6	3	196.741	ppb	1.25	1,224,494.48	8.372E-01	Analog	0.30	3
Na	23	45	2	1024.521	ppb	2.59	1,165,998.14	1.628E+01	Analog	0.30	3
Mg	26	45	2	205.869	ppb	2.08	18,686.51	2.609E-01	Pulse	0.30	3
Al	27	45	2	21.695	ppb	2.36	4,163.27	5.811E-02	Pulse	0.30	3
K	39	45	2	243.802	ppb	1.34	86,649.16	1.210E+00	Pulse	0.30	3
Ca	44	45	3	301.119	ppb	0.67	286,129.17	1.463E-01	Pulse	0.30	3
V	51	45	2	20.655	ppb	0.91	81,020.51	1.131E+00	Pulse	0.30	3
Cr	52	45	2	19.419	ppb	1.25	103,482.38	1.445E+00	Pulse	0.30	3
Mn	55	45	2	20.600	ppb	2.34	56,147.49	7.841E-01	Pulse	0.30	3
Fe	56	45	2	21.685	ppb	1.47	99,026.40	1.383E+00	Pulse	0.30	3
Co	59	45	2	19.818	ppb	0.89	182,121.31	2.543E+00	Pulse	0.30	3
Ni	60	72	2	18.512	ppb	1.38	48,080.32	9.758E-01	Pulse	0.30	3
Cu	63	72	2	17.480	ppb	0.56	132,811.75	2.695E+00	Pulse	0.30	3
Zn	66	72	2	18.249	ppb	1.27	21,969.46	4.458E-01	Pulse	0.30	3
As	75	72	2	19.365	ppb	2.04	12,055.21	2.447E-01	Pulse	0.75	3
Se	78	72	1	18.652	ppb	1.87	3,589.42	7.264E-02	Pulse	0.30	3
Mo	95	103	2	20.363	ppb	1.12	63,620.14	4.759E-02	Pulse	0.30	3
Ag	107	103	3	18.970	ppb	0.60	470,892.17	1.600E-01	Pulse	0.30	3
Cd	111	115	3	18.945	ppb	0.68	107,855.10	3.555E-02	Pulse	0.30	3
Sb	121	115	3	19.965	ppb	0.90	421,536.44	1.390E-01	Pulse	0.30	3
Ba	137	159	3	22.177	ppb	0.63	146,141.85	3.282E-02	Pulse	0.30	3
Tl	205	209	3	20.125	ppb	0.49	948,393.76	3.413E-01	Pulse	0.30	3
Pb	208	209	3	20.177	ppb	0.67	1,302,948.27	4.689E-01	Pulse	0.30	3
U	238	209	3	19.688	ppb	0.82	1,425,834.82	5.131E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,462,517.94	0.77	71.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	71,626.71	1.85	87.0	Pulse	0.30	3
3	Sc	45	1,955,379.36	0.96	86.0	Analog	0.30	3
1	Ge	72	49,420.22	0.85	94.6	Pulse	0.30	3
2	Ge	72	49,281.90	1.73	97.8	Pulse	0.30	3
2	Rh	103	1,336,680.12	0.99	91.9	Analog	0.30	3
3	Rh	103	2,942,508.88	0.64	93.2	Analog	0.30	3
3	In	115	3,033,576.73	0.67	99.8	Analog	0.30	3
3	Tb	159	4,453,185.66	0.90	96.8	Analog	0.30	3
3	Bi	209	2,778,824.06	0.60	97.4	Analog	0.30	3

Quantitation Report

File Name	A0511122.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:50
Sample Name	CCB8,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	37.78	2.845E-05	Pulse	0.30	3
B	11	6	3	9.673	ppb	2.64	65,366.19	4.934E-02	Pulse	0.30	3
Na	23	45	2	251.112	ppb	5.74	324,229.13	4.986E+00	Pulse	0.30	3
Mg	26	45	2	1.275	ppb	25.77	213.35	3.282E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	106.65	1.645E-03	Pulse	0.30	3
K	39	45	2	22.478	ppb	19.75	22,572.63	3.472E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	13,538.19	7.496E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	261.13	4.013E-03	Pulse	0.30	3
Cr	52	45	2	0.024	ppb	38.37	975.29	1.500E-02	Pulse	0.30	3
Mn	55	45	2	0.162	ppb	15.57	598.51	9.209E-03	Pulse	0.30	3
Fe	56	45	2	0.189	ppb	25.04	2,509.30	3.860E-02	Pulse	0.30	3
Co	59	45	2	0.003	ppb	87.29	49.67	7.664E-04	Pulse	0.30	3
Ni	60	72	2	0.498	ppb	4.61	1,633.12	3.612E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,225.04	4.920E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	538.89	1.191E-02	Pulse	0.30	3
As	75	72	2	0.018	ppb	86.13	20.45	4.507E-04	Pulse	0.75	3
Se	78	72	1	0.002	ppb	1244.15	2.22	4.979E-05	Pulse	0.30	3
Mo	95	103	2	0.073	ppb	20.04	248.90	2.021E-04	Pulse	0.30	3
Ag	107	103	3	0.778	ppb	17.38	19,937.02	7.128E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	249.46	8.726E-05	Pulse	0.30	3
Sb	121	115	3	0.036	ppb	1.51	1,054.53	3.689E-04	Pulse	0.30	3
Ba	137	159	3	0.021	ppb	20.82	432.55	1.002E-04	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	707.82	2.658E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	2,937.00	1.103E-03	Pulse	0.30	3
U	238	209	3	0.005	ppb	40.76	457.86	1.719E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,324,782.95	0.90	64.4	Analog	0.30	3
2	Sc	45	65,044.45	1.35	79.0	Pulse	0.30	3
3	Sc	45	1,806,308.62	0.69	79.4	Analog	0.30	3
1	Ge	72	44,888.07	2.02	85.9	Pulse	0.30	3
2	Ge	72	45,231.19	1.26	89.8	Pulse	0.30	3
2	Rh	103	1,234,107.78	2.61	84.8	Analog	0.30	3
3	Rh	103	2,799,287.39	0.94	88.7	Analog	0.30	3
3	In	115	2,858,997.26	0.24	94.1	Analog	0.30	3
3	Tb	159	4,316,729.35	0.26	93.8	Analog	0.30	3
3	Bi	209	2,662,424.37	0.74	93.3	Analog	0.30	3

Quantitation Report

File Name	A0511123.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 20:55
Sample Name	LLCCV3,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.426	ppb	1.20	3,449.40	2.465E-03	Pulse	0.30	3
B	11	6	3	52.250	ppb	0.52	320,045.83	2.287E-01	Pulse	0.30	3
Na	23	45	2	136.296	ppb	6.59	233,697.48	3.309E+00	Pulse	0.30	3
Mg	26	45	2	1.942	ppb	8.62	291.13	4.123E-03	Pulse	0.30	3
Al	27	45	2	15.460	ppb	5.19	2,963.71	4.198E-02	Pulse	0.30	3
K	39	45	2	8.652	ppb	35.04	20,710.18	2.933E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,948.12	9.371E-03	Pulse	0.30	3
V	51	45	2	0.894	ppb	3.09	3,979.54	5.634E-02	Pulse	0.30	3
Cr	52	45	2	0.967	ppb	2.81	5,972.17	8.455E-02	Pulse	0.30	3
Mn	55	45	2	0.595	ppb	4.80	1,810.32	2.563E-02	Pulse	0.30	3
Fe	56	45	2	11.107	ppb	1.82	50,946.68	7.213E-01	Pulse	0.30	3
Co	59	45	2	0.450	ppb	1.73	4,107.07	5.814E-02	Pulse	0.30	3
Ni	60	72	2	1.263	ppb	0.86	3,680.24	7.605E-02	Pulse	0.30	3
Cu	63	72	2	0.592	ppb	5.90	8,043.49	1.662E-01	Pulse	0.30	3
Zn	66	72	2	8.497	ppb	2.88	10,791.83	2.230E-01	Pulse	0.30	3
As	75	72	2	0.108	ppb	10.96	77.33	1.598E-03	Pulse	0.75	3
Se	78	72	1	0.546	ppb	28.11	103.34	2.166E-03	Pulse	0.30	3
Mo	95	103	2	0.477	ppb	6.71	1,572.37	1.146E-03	Pulse	0.30	3
Ag	107	103	3	0.547	ppb	2.12	15,839.17	5.188E-03	Pulse	0.30	3
Cd	111	115	3	0.465	ppb	4.05	3,735.05	1.180E-03	Pulse	0.30	3
Sb	121	115	3	0.489	ppb	0.33	11,136.58	3.520E-03	Pulse	0.30	3
Ba	137	159	3	1.049	ppb	1.38	7,724.85	1.617E-03	Pulse	0.30	3
Tl	205	209	3	0.432	ppb	0.52	22,987.47	7.706E-03	Pulse	0.30	3
Pb	208	209	3	0.883	ppb	0.96	69,621.05	2.334E-02	Pulse	0.30	3
U	238	209	3	0.407	ppb	0.98	31,759.49	1.065E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,399,655.93	0.29	68.1	Analog	0.30	3
2	Sc	45	70,635.61	1.42	85.8	Pulse	0.30	3
3	Sc	45	1,915,637.32	0.83	84.2	Analog	0.30	3
1	Ge	72	47,611.39	1.04	91.1	Pulse	0.30	3
2	Ge	72	48,398.11	1.13	96.0	Pulse	0.30	3
2	Rh	103	1,371,182.69	1.66	94.2	Analog	0.30	3
3	Rh	103	3,052,949.50	0.63	96.7	Analog	0.30	3
3	In	115	3,164,170.88	0.43	104.1	Analog	0.30	3
3	Tb	159	4,776,047.60	1.03	103.8	Analog	0.30	3
3	Bi	209	2,982,992.91	0.80	104.5	Analog	0.30	3

Quantitation Report

File Name	A0511124.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 21:01
Sample Name	ICSA4,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	27.78	2.078E-05	Pulse	0.30	3
B	11	6	3	4.443	ppb	2.13	36,505.93	2.731E-02	Pulse	0.30	3
Na	23	45	2	92894.130	ppb	1.53	97,385,515.22	1.358E+03	Analog	0.30	3
Mg	26	45	2	93658.129	ppb	1.14	8,458,967.44	1.180E+02	Analog	0.30	3
Al	27	45	2	12.681	ppb	3.96	2,495.73	3.479E-02	Pulse	0.30	3
K	39	45	2	104349.136	ppb	1.45	29,191,242.34	4.070E+02	Analog	0.30	3
Ca	44	45	3	95416.009	ppb	0.35	85,176,674.29	4.340E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	252.24	3.518E-03	Pulse	0.30	3
Cr	52	45	2	0.165	ppb	6.82	1,821.48	2.540E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-10,234.74	-1.427E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	850.77	1.186E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-47.22	-6.625E-04	Pulse	0.30	3
Ni	60	72	2	0.250	ppb	16.69	1,076.06	2.320E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,833.64	-6.107E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	564.24	1.216E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	7.07	1.522E-04	Pulse	0.75	3
Se	78	72	1	0.002	ppb	514.93	2.22	5.152E-05	Pulse	0.30	3
Mo	95	103	2	0.029	ppb	33.69	120.01	9.829E-05	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-15,039.65	-5.446E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,251.65	-6.536E-03	Pulse	0.30	3
Sb	121	115	3	0.006	ppb	22.61	476.69	1.618E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-62,875.61	-1.370E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	548.92	2.138E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-85,854.75	-3.345E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-5,004.31	-1.950E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,336,695.08	0.61	65.0	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	71,721.40	1.59	87.1	Pulse	0.30	3
3	Sc	45	1,962,720.79	1.51	86.3	Analog	0.30	3
1	Ge	72	43,374.13	1.54	83.0	Pulse	0.30	3
2	Ge	72	46,399.12	0.32	92.1	Pulse	0.30	3
2	Rh	103	1,223,169.36	1.36	84.1	Analog	0.30	3
3	Rh	103	2,761,706.45	1.59	87.5	Analog	0.30	3
3	In	115	2,945,277.03	0.51	96.9	Analog	0.30	3
3	Tb	159	4,590,648.33	1.45	99.8	Analog	0.30	3
3	Bi	209	2,566,885.97	0.75	90.0	Analog	0.30	3

Quantitation Report

File Name	A0511125.D
File Path	C:\ICPMH\1\DATA\160511A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/11/2016 21:06
Sample Name	ICSAB4,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/12/2016 20:49
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.385	ppb	1.05	119,749.01	1.099E-01	Pulse	0.30	3
B	11	6	3	191.913	ppb	0.83	890,226.08	8.169E-01	Pulse	0.30	3
Na	23	45	2	93067.278	ppb	0.74	82,011,954.89	1.360E+03	Analog	0.30	3
Mg	26	45	2	94516.590	ppb	1.02	7,174,526.28	1.190E+02	Analog	0.30	3
Al	27	45	2	32.770	ppb	3.93	5,229.07	8.677E-02	Pulse	0.30	3
K	39	45	2	106428.644	ppb	0.98	25,022,991.30	4.151E+02	Analog	0.30	3
Ca	44	45	3	95347.580	ppb	0.42	70,523,096.17	4.337E+01	Analog	0.30	3
V	51	45	2	21.750	ppb	0.53	71,780.44	1.191E+00	Pulse	0.30	3
Cr	52	45	2	20.091	ppb	1.17	90,086.24	1.494E+00	Pulse	0.30	3
Mn	55	45	2	17.734	ppb	2.05	40,702.43	6.754E-01	Pulse	0.30	3
Fe	56	45	2	21.881	ppb	1.19	84,085.06	1.395E+00	Pulse	0.30	3
Co	59	45	2	19.350	ppb	1.30	149,643.05	2.483E+00	Pulse	0.30	3
Ni	60	72	2	17.944	ppb	1.41	37,960.38	9.462E-01	Pulse	0.30	3
Cu	63	72	2	15.578	ppb	2.30	96,669.97	2.410E+00	Pulse	0.30	3
Zn	66	72	2	16.197	ppb	0.85	16,009.27	3.989E-01	Pulse	0.30	3
As	75	72	2	19.731	ppb	0.37	10,004.35	2.493E-01	Pulse	0.75	3
Se	78	72	1	19.475	ppb	0.51	2,889.26	7.584E-02	Pulse	0.30	3
Mo	95	103	2	22.853	ppb	0.96	55,006.24	5.341E-02	Pulse	0.30	3
Ag	107	103	3	18.239	ppb	0.51	351,055.61	1.539E-01	Pulse	0.30	3
Cd	111	115	3	15.754	ppb	1.04	72,267.50	2.962E-02	Pulse	0.30	3
Sb	121	115	3	21.444	ppb	0.35	364,178.91	1.492E-01	Pulse	0.30	3
Ba	137	159	3	15.974	ppb	0.99	89,129.64	2.366E-02	Pulse	0.30	3
Tl	205	209	3	22.095	ppb	0.54	793,872.68	3.747E-01	Pulse	0.30	3
Pb	208	209	3	20.449	ppb	0.29	1,006,837.16	4.752E-01	Pulse	0.30	3
U	238	209	3	22.400	ppb	0.60	1,236,958.16	5.838E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,089,782.64	1.14	53.0	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	60,283.15	2.82	73.2	Pulse	0.30	3
3	Sc	45	1,626,189.49	1.01	71.5	Analog	0.30	3
1	Ge	72	38,097.57	0.23	72.9	Pulse	0.30	3
2	Ge	72	40,129.08	3.53	79.6	Pulse	0.30	3
2	Rh	103	1,029,758.01	1.73	70.8	Pulse	0.30	3
3	Rh	103	2,281,154.31	0.49	72.3	Analog	0.30	3
3	In	115	2,440,140.04	0.58	80.3	Analog	0.30	3
3	Tb	159	3,767,466.92	0.58	81.9	Analog	0.30	3
3	Bi	209	2,118,927.07	0.73	74.3	Analog	0.30	3



RAW DATA



INJECTION LOG: 160516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time	
A0516001.D	RINSE	RINSE	1	05/16/16 6:51 AM	
A0516002.D	Cal Blank	IBLK	1	05/16/16 6:57 AM	
A0516003.D	Std1-0.1/1 ppb	ICAL	1	05/16/16 7:03 AM	
A0516004.D	Std2-0.5/5 ppb	ICAL	1	05/16/16 7:08 AM	
A0516005.D	Std3-5/50 ppb	ICAL	1	05/16/16 7:14 AM	
A0516006.D	Std4-10/100 ppb	ICAL	1	05/16/16 7:19 AM	
A0516007.D	Std5-20/200 ppb	ICAL	1	05/16/16 7:25 AM	
A0516008.D	Std6-40/400 ppb	ICAL	1	05/16/16 7:30 AM	
A0516009.D	Std7-100/1000 ppb	ICAL	1	05/16/16 7:36 AM	
A0516010.D	Std8-200/2000 ppb	ICAL	1	05/16/16 7:41 AM	
A0516011.D	ICV	ICV	1	05/16/16 7:47 AM	
A0516012.D	ICB	ICB	1	05/16/16 7:52 AM	
A0516013.D	LLICV	CCV1	1	05/16/16 7:58 AM	
A0516014.D	ICSA1	ICSA	1	05/16/16 8:04 AM	
A0516015.D	ICSAB1	ICSAB	1	05/16/16 8:09 AM	
A0516016.D	N019707-001B	SAMP	50	05/16/16 8:22 AM	
A0516017.D	N019707-002B	SAMP	50	05/16/16 8:28 AM	
A0516018.D	N019709-001C	SAMP	25	05/16/16 8:33 AM	
A0516019.D	N019709-001C	SAMP	125	05/16/16 8:39 AM	
A0516020.D	N019711-001C	SAMP	10	05/16/16 8:44 AM	
A0516021.D	N019712-001C	SAMP	10	05/16/16 8:50 AM	
A0516022.D	N019713-001C	SAMP	2	05/16/16 8:55 AM	
A0516023.D	N019714-002C	SAMP	1	05/16/16 9:01 AM	
A0516024.D	N019714-003C	SAMP	1	05/16/16 9:06 AM	
A0516025.D	~~N019631-001B~~	SAMP	25	05/16/16 9:12 AM	N019731-001B
A0516026.D	CCV1	CCV	1	05/16/16 9:18 AM	
A0516027.D	CCB1	CCB	1	05/16/16 9:23 AM	
A0516028.D	~~N019632-001B~~	SAMP	25	05/16/16 9:28 AM	N019732-001C
A0516029.D	MB-58373	MBLK	1	05/16/16 9:34 AM	
A0516030.D	LCS-58373	LCS	1	05/16/16 9:39 AM	
A0516031.D	N019654-008B	SAMP	5	05/16/16 9:45 AM	
A0516032.D	N019654-009B	SAMP	5	05/16/16 9:51 AM	
A0516033.D	N019654-008B	SAMP	25	05/16/16 9:56 AM	
A0516034.D	N019654-008B-PS	PS	5	05/16/16 10:02 AM	
A0516035.D	N019654-008B-MS	MS	5	05/16/16 10:07 AM	
A0516036.D	N019654-008B-MSD	MSD	5	05/16/16 10:13 AM	
A0516037.D	N019590-002B	SAMP	1	05/16/16 10:18 AM	
A0516038.D	CCV2	CCV	1	05/16/16 10:24 AM	
A0516039.D	CCB2	CCB	1	05/16/16 10:30 AM	
A0516040.D	LLCCV1	CCV2	1	05/16/16 10:35 AM	
A0516041.D	ICSA2	ICSA	1	05/16/16 10:41 AM	
A0516042.D	ICSAB2	ICSAB	1	05/16/16 10:46 AM	

5/19/2016

INJECTION LOG: 160516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0516043.D	N019590-002B	SAMP	1	05/16/16 10:52 AM
A0516044.D	N019590-002A	SAMP	1	05/16/16 11:00 AM
A0516045.D	MB-58351	MBLK	1	05/16/16 11:05 AM
A0516046.D	LCS-58351	LCS	1	05/16/16 11:11 AM
A0516047.D	N019639-001B	SAMP	1	05/16/16 11:16 AM
A0516048.D	N019639-001B	SAMP	5	05/16/16 11:22 AM
A0516049.D	N019639-001B-PS	PS	1	05/16/16 11:27 AM
A0516050.D	N019639-001B-MS	MS	1	05/16/16 11:33 AM
A0516051.D	N019639-001B-MSD	MSD	1	05/16/16 11:39 AM
A0516052.D	N019639-002B	SAMP	1	05/16/16 11:44 AM
A0516053.D	CCV3	CCV	1	05/16/16 11:50 AM
A0516054.D	CCB3	CCB	1	05/16/16 11:55 AM
A0516055.D	N019639-005B	SAMP	1	05/16/16 12:01 PM
A0516056.D	N019639-007B	SAMP	1	05/16/16 12:06 PM
A0516057.D	N019639-008B	SAMP	1	05/16/16 12:12 PM
A0516058.D	N019639-009B	SAMP	1	05/16/16 12:17 PM
A0516059.D	N019639-010B	SAMP	1	05/16/16 12:23 PM
A0516060.D	N019639-011B	SAMP	1	05/16/16 12:29 PM
A0516061.D	N019639-012B	SAMP	1	05/16/16 12:34 PM
A0516062.D	N019639-013B	SAMP	1	05/16/16 12:40 PM
A0516063.D	N019639-014B	SAMP	1	05/16/16 12:45 PM
A0516064.D	N019639-014B-MS	MS	1	05/16/16 12:51 PM
A0516065.D	CCV4	CCV	1	05/16/16 12:56 PM
A0516066.D	CCB4	CCB	1	05/16/16 1:02 PM
A0516067.D	N019639-015B	SAMP	1	05/16/16 1:08 PM
A0516068.D	N019639-016B	SAMP	1	05/16/16 1:13 PM
A0516069.D	N019639-017B	SAMP	1	05/16/16 1:19 PM
A0516070.D	N019639-018B	SAMP	1	05/16/16 1:24 PM
A0516071.D	N019639-019B	SAMP	1	05/16/16 1:30 PM
A0516072.D	MB-58351	MBLK	1	05/16/16 1:35 PM
A0516073.D	N019639-002B	SAMP	25	05/16/16 1:41 PM
A0516074.D	N019639-005B	SAMP	25	05/16/16 1:46 PM
A0516075.D	N019639-017B	SAMP	5	05/16/16 1:52 PM
A0516076.D	N019639-018B	SAMP	5	05/16/16 1:57 PM
A0516077.D	CCV5	CCV	1	05/16/16 2:03 PM
A0516078.D	CCB5	CCB	1	05/16/16 2:09 PM
A0516079.D	LLCCV2	CCV2	1	05/16/16 2:14 PM
A0516080.D	ICSA3	ICSA	1	05/16/16 2:20 PM
A0516081.D	ICSAB3	ICSAB	1	05/16/16 2:25 PM
A0516082.D	N019610-010B	SAMP	5	05/16/16 2:30 PM
A0516083.D	N019610-011B	SAMP	5	05/16/16 2:35 PM
A0516084.D	N019610-012B	SAMP	50	05/16/16 2:41 PM

INJECTION LOG: 160516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0516085.D	N019610-013B	SAMP	50	05/16/16 2:47 PM
A0516086.D	N019610-013B-MS	MS	50	05/16/16 2:53 PM
A0516087.D	N019610-014B	SAMP	5	05/16/16 2:59 PM
A0516088.D	N019610-015B	SAMP	10	05/16/16 3:04 PM
A0516089.D	N019611-~~001~~B 002B	SAMP	5	05/16/16 3:09 PM
A0516090.D	N019611-~~002~~B 001B	SAMP	10	05/16/16 3:14 PM
A0516091.D	N019611-003B	SAMP	5	05/16/16 3:20 PM
A0516092.D	CCV6	CCV	1	05/16/16 3:26 PM
A0516093.D	CCB6	CCB	1	05/16/16 3:31 PM
A0516094.D	N019611-005B	SAMP	5	05/16/16 3:37 PM
A0516095.D	N019611-007B	SAMP	5	05/16/16 3:42 PM
A0516096.D	N019611-012B	SAMP	25	05/16/16 3:48 PM
A0516097.D	N019654-006B	SAMP	5	05/16/16 3:54 PM
A0516098.D	N019628-001B	SAMP	5	05/16/16 3:59 PM
A0516099.D	N019628-002B	SAMP	5	05/16/16 4:05 PM
A0516100.D	N019628-003B	SAMP	5	05/16/16 4:10 PM
A0516101.D	N019628-004B	SAMP	5	05/16/16 4:16 PM
A0516102.D	N019628-004B	SAMP	25	05/16/16 4:22 PM
A0516103.D	N019628-005B	SAMP	100	05/16/16 4:27 PM
A0516104.D	CCV7	CCV	1	05/16/16 4:33 PM
A0516105.D	CCB7	CCB	1	05/16/16 4:38 PM
A0516106.D	LLCCV3	CCV2	1	05/16/16 4:44 PM
A0516107.D	ICSA4	ICSA	1	05/16/16 4:50 PM
A0516108.D	ICSAB4	ICSAB	1	05/16/16 4:55 PM

5/19/2016
for

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	A0516001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	A0516002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	A0516003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 160401C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	A0516004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 160401C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	A0516005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 160401C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	A0516006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 160401C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	3512	A0516007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 160401C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	A0516008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 160401C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	A0516009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 160401C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	A0516010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 160401C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	A0516011	ICV,ICV,1	10/100 ug/L,200mL of 2MWST- 160201C	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	A0516012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0516013	LLICV,CCV1,1	2MWST- 160201D	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0516014	ICSA1,ICSA,1	2MWST- 160401D	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0516015	ICSAB1,ICSAB,1	2MWST- 160401E	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3201	A0516016	N019707-001B,SAMP,50		1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3202	A0516017	N019707-002B,SAMP,50		1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3203	A0516018	N019709-001C,SAMP,25		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3204	A0516019	N019709-001C,SAMP,125		1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3205	A0516020	N019711-001C,SAMP,10		1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3206	A0516021	N019712-001C,SAMP,10		1.000				
22	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3207	A0516022	N019713-001C,SAMP,2		1.000				
23	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3208	A0516023	N019714-002C,SAMP,1		1.000				
24	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3209	A0516024	N019714-003C,SAMP,1		1.000				
25	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3210	A0516025	~~N019631-001B,SAMP,~~25	N019731-001B,SAMP,25	1.000				
26	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0516026	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
27	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0516027	CCB1,CCB,1		1.000				
28	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3211	A0516028	~~N019632-001B,SAMP,~~25	N019732-001C,SAMP,25	1.000				
29	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3301	A0516029	MB-58373,MBLK,1		1.000				
30	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3302	A0516030	LCS-58373,LCS,1		1.000				
31	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3303	A0516031	N019654-008B,SAMP,5		1.000				
32	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3304	A0516032	N019654-009B,SAMP,5		1.000				
33	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3305	A0516033	N019654-008B,SAMP,25		1.000				
34	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3306	A0516034	N019654-008B-PS,PS,5		1.000				
35	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3307	A0516035	N019654-008B-MS,MS,5		1.000				
36	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3308	A0516036	N019654-008B-MSD,MSD,5		1.000				
37	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3309	A0516037	N019590-002B,SAMP,1		1.000				
38	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0516038	CCV2,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
39	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0516039	CCB2,CCB,1		1.000				
40	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0516040	LLCCV1,CCV2,1	2MWST- 160201D	1.000				
41	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0516041	ICSA2,ICSA,1	2MWST- 160401D	1.000				
42	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0516042	ICSAB2,ICSAB,1	2MWST- 160401E	1.000				
43	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3309	A0516043	N019590-002B,SAMP,1		1.000				
44	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3310	A0516044	N019590-002A,SAMP,1		1.000				
45	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4101	A0516045	MB-58351,MBLK,1		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
46	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4102	A0516046	LCS-58351,LCS,1		1.000				
47	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4103	A0516047	N019639-001B,SAMP,1		1.000				
48	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4104	A0516048	N019639-001B,SAMP,5		1.000				
49	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4105	A0516049	N019639-001B-PS,PS,1		1.000				
50	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4106	A0516050	N019639-001B-MS,MS,1		1.000				
51	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4107	A0516051	N019639-001B-MSD,MSD,1		1.000				
52	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4108	A0516052	N019639-002B,SAMP,1		1.000				
53	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	3512	A0516053	CCV3,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
54	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0516054	CCB3,CCB,1		1.000				
55	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4109	A0516055	N019639-005B,SAMP,1		1.000				
56	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4110	A0516056	N019639-007B,SAMP,1		1.000				
57	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4111	A0516057	N019639-008B,SAMP,1		1.000				
58	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4112	A0516058	N019639-009B,SAMP,1		1.000				
59	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4201	A0516059	N019639-010B,SAMP,1		1.000				
60	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4202	A0516060	N019639-011B,SAMP,1		1.000				
61	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4203	A0516061	N019639-012B,SAMP,1		1.000				
62	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4204	A0516062	N019639-013B,SAMP,1		1.000				
63	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4205	A0516063	N019639-014B,SAMP,1		1.000				
64	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4206	A0516064	N019639-014B-MS,MS,1		1.000				
65	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	3512	A0516065	CCV4,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
66	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0516066	CCB4,CCB,1		1.000				
67	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4207	A0516067	N019639-015B,SAMP,1		1.000				
68	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4208	A0516068	N019639-016B,SAMP,1		1.000				
69	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4209	A0516069	N019639-017B,SAMP,1		1.000				
70	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4210	A0516070	N019639-018B,SAMP,1		1.000				
71	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4211	A0516071	N019639-019B,SAMP,1		1.000				
72	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4101	A0516072	MB-58351,MBLK,1		1.000				
73	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4301	A0516073	N019639-002B,SAMP,25		1.000				
74	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4302	A0516074	N019639-005B,SAMP,25		1.000				
75	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4303	A0516075	N019639-017B,SAMP,5		1.000				
76	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4304	A0516076	N019639-018B,SAMP,5		1.000				
77	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	3512	A0516077	CCV5,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
78	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0516078	CCB5,CCB,1		1.000				
79	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0516079	LLCCV2,CCV2,1	2MWST- 160201D	1.000				
80	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0516080	ICSA3,ICSA,1	2MWST- 160401D	1.000				
81	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0516081	ICSAB3,ICSAB,1	2MWST- 160401E	1.000				
82	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4305	A0516082	N019610-010B,SAMP,5		1.000				
83	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4306	A0516083	N019610-011B,SAMP,5		1.000				
84	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4307	A0516084	N019610-012B,SAMP,50		1.000				
85	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4308	A0516085	N019610-013B,SAMP,50		1.000				
86	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4309	A0516086	N019610-013B-MS,MS,50		1.000				
87	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4310	A0516087	N019610-014B,SAMP,5		1.000				
88	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4311	A0516088	N019610-015B,SAMP,10		1.000				
89	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4312	A0516089	N019611-001B,SAMP,5		1.000				
90	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4401	A0516090	N019611-002B,SAMP,10		1.000				

002B
001B

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
91	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4402	A0516091	N019611-003B,SAMP,5		1.000				
92	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	3512	A0516092	CCV6,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
93	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0516093	CCB6,CCB,1		1.000				
94	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4403	A0516094	N019611-005B,SAMP,5		1.000				
95	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4404	A0516095	N019611-007B,SAMP,5		1.000				
96	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4405	A0516096	N019611-012B,SAMP,25		1.000				
97	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4406	A0516097	N019654-006B,SAMP,5		1.000				
98	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4407	A0516098	N019628-001B,SAMP,5		1.000				
99	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4408	A0516099	N019628-002B,SAMP,5		1.000				
100	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4409	A0516100	N019628-003B,SAMP,5		1.000				
101	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4410	A0516101	N019628-004B,SAMP,5		1.000				
102	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4411	A0516102	N019628-004B,SAMP,25		1.000				
103	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4412	A0516103	N019628-005B,SAMP,100		1.000				
104	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	3512	A0516104	CCV7,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
105	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0516105	CCB7,CCB,1		1.000				
106	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0516106	LLCCV3,CCV2,1	2MWST- 160201D	1.000				
107	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0516107	ICSA4,ICSA,1	2MWST- 160401D	1.000				
108	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0516108	ICSAB4,ICSAB,1	2MWST- 160401E	1.000				

Quantitation Report

File Name	A0516002.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 06:57
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	---	14.44	8.479E-06	Pulse	0.30	3
B	11	6	3	0.000	ppb	---	49,432.61	2.902E-02	Pulse	0.30	3
Na	23	45	2	0.000	ppb	---	37,124.90	4.099E-01	Pulse	0.30	3
Mg	26	45	2	0.000	ppb	---	112.23	1.237E-03	Pulse	0.30	3
Al	27	45	2	0.000	ppb	---	296.67	3.277E-03	Pulse	0.30	3
K	39	45	2	0.000	ppb	---	14,275.56	1.576E-01	Pulse	0.30	3
Ca	44	45	3	0.000	ppb	---	8,970.62	3.765E-03	Pulse	0.30	3
V	51	45	2	0.000	ppb	---	978.97	1.081E-02	Pulse	0.30	3
Cr	52	45	2	0.000	ppb	---	694.44	7.655E-03	Pulse	0.30	3
Mn	55	45	2	0.000	ppb	---	96.53	1.062E-03	Pulse	0.30	3
Fe	56	45	2	0.000	ppb	---	1,203.83	1.330E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	---	39.96	4.397E-04	Pulse	0.30	3
Ni	60	72	2	0.000	ppb	---	141.06	2.327E-03	Pulse	0.30	3
Cu	63	72	2	0.000	ppb	---	835.26	1.379E-02	Pulse	0.30	3
Zn	66	72	2	0.000	ppb	---	798.71	1.317E-02	Pulse	0.30	3
As	75	72	2	0.000	ppb	---	12.00	1.977E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00		Pulse	0.30	3
Mo	95	103	2	0.000	ppb	---	25.55	1.394E-05	Pulse	0.30	3
Ag	107	103	3	0.000	ppb	---	310.44	8.376E-05	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	---	123.51	3.091E-05	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	---	194.45	4.869E-05	Pulse	0.30	3
Ba	137	159	3	0.000	ppb	---	44.21	6.912E-06	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	---	775.61	1.817E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	---	1,433.17	3.359E-04	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.000	ppb	---	168.74	3.956E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,703,187.26	1.10	100.0	Analog	0.30	3
2	Sc	45	90,612.74	2.35	100.0	Pulse	0.30	3
3	Sc	45	2,383,047.62	0.68	100.0	Analog	0.30	3
1	Ge	72	69,972.69	2.38	100.0	Pulse	0.30	3
2	Ge	72	60,634.80	2.14	100.0	Pulse	0.30	3
2	Rh	103	1,828,340.23	0.87	100.0	Analog	0.30	3
3	Rh	103	3,706,382.03	0.15	100.0	Analog	0.30	3
3	In	115	3,995,000.66	0.50	100.0	Analog	0.30	3
3	Tb	159	6,393,152.05	0.38	100.0	Analog	0.30	3
3	Bi	209	4,267,326.26	0.41	100.0	Analog	0.30	3

Quantitation Report

File Name	A0516003.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:03
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

FOR AS ONLY

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.095	ppb	1.83	1,091.20	5.788E-04	Pulse	0.30	3
B	11	6	3	1.320	ppb	9.87	68,885.46	3.654E-02	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	39,397.85	3.894E-01	Pulse	0.30	3
Mg	26	45	2	1.826	ppb	26.88	364.47	3.611E-03	Pulse	0.30	3
Al	27	45	2	0.342	ppb	16.36	423.32	4.182E-03	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	15,060.72	1.488E-01	Pulse	0.30	3
Ca	44	45	3	3.746	ppb	5.50	14,641.48	5.573E-03	Pulse	0.30	3
V	51	45	2	0.075	ppb	22.27	1,516.81	1.499E-02	Pulse	0.30	3
Cr	52	45	2	0.121	ppb	11.11	1,688.99	1.668E-02	Pulse	0.30	3
Mn	55	45	2	0.114	ppb	7.19	578.14	5.715E-03	Pulse	0.30	3
Fe	56	45	2	0.504	ppb	7.80	4,720.55	4.665E-02	Pulse	0.30	3
Co	59	45	2	0.107	ppb	3.41	1,543.42	1.524E-02	Pulse	0.30	3
Ni	60	72	2	0.100	ppb	15.59	519.93	7.699E-03	Pulse	0.30	3
Cu	63	72	2	0.131	ppb	6.99	2,270.79	3.363E-02	Pulse	0.30	3
Zn	66	72	2	1.517	ppb	0.23	3,206.81	4.749E-02	Pulse	0.30	3
As	75	72	2	0.103	ppb	10.03	92.00	1.362E-03	Pulse	0.75	3
Se	78	72	1	0.126	ppb	38.13	46.67	5.986E-04	Pulse	0.30	3
Mo	95	103	2	0.093	ppb	11.87	461.14	2.304E-04	Pulse	0.30	3
Ag	107	103	3	0.021	ppb	18.51	1,100.20	2.671E-04	Pulse	0.30	3
Cd	111	115	3	0.103	ppb	12.12	994.24	2.248E-04	Pulse	0.30	3
Sb	121	115	3	0.103	ppb	6.85	3,060.43	6.921E-04	Pulse	0.30	3
Ba	137	159	3	0.110	ppb	6.61	1,200.67	1.697E-04	Pulse	0.30	3
Tl	205	209	3	0.094	ppb	0.75	8,767.40	1.855E-03	Pulse	0.30	3
Pb	208	209	3	0.100	ppb	3.06	13,035.19	2.758E-03	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.099	ppb	0.49	13,061.79	2.764E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,885,185.73	0.24	110.7	Analog	0.30	3
2	Sc	45	101,236.57	2.83	111.7	Pulse	0.30	3
3	Sc	45	2,627,229.98	0.63	110.2	Analog	0.30	3
1	Ge	72	77,991.11	1.88	111.5	Pulse	0.30	3
2	Ge	72	67,533.41	0.51	111.4	Pulse	0.30	3
2	Rh	103	2,002,933.02	1.47	109.5	Analog	0.30	3
3	Rh	103	4,116,120.95	0.74	111.1	Analog	0.30	3
3	In	115	4,421,044.79	0.46	110.7	Analog	0.30	3
3	Tb	159	7,076,593.86	0.49	110.7	Analog	0.30	3
3	Bi	209	4,726,292.43	0.82	110.8	Analog	0.30	3

Quantitation Report

File Name	A0516004.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:08
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.502	ppb	3.11	5,505.56	3.005E-03	Pulse	0.30	3
B	11	6	3	4.611	ppb	6.13	101,268.22	5.528E-02	Pulse	0.30	3
Na	23	45	2	1.681	ppb	49.34	43,016.70	4.344E-01	Pulse	0.30	3
Mg	26	45	2	4.939	ppb	11.73	757.83	7.656E-03	Pulse	0.30	3
Al	27	45	2	0.351	ppb	110.84	415.51	4.205E-03	Pulse	0.30	3
K	39	45	2	2.038	ppb	64.96	16,445.38	1.661E-01	Pulse	0.30	3
Ca	44	45	3	5.315	ppb	0.76	16,478.85	6.330E-03	Pulse	0.30	3
V	51	45	2	0.502	ppb	4.84	3,823.95	3.861E-02	Pulse	0.30	3
Cr	52	45	2	0.544	ppb	5.33	4,767.47	4.816E-02	Pulse	0.30	3
Mn	55	45	2	0.499	ppb	1.47	2,115.13	2.136E-02	Pulse	0.30	3
Fe	56	45	2	0.715	ppb	7.17	5,993.15	6.055E-02	Pulse	0.30	3
Co	59	45	2	0.501	ppb	4.84	6,902.80	6.974E-02	Pulse	0.30	3
Ni	60	72	2	0.500	ppb	4.81	1,925.60	2.909E-02	Pulse	0.30	3
Cu	63	72	2	0.505	ppb	6.43	5,954.94	8.996E-02	Pulse	0.30	3
Zn	66	72	2	0.648	ppb	9.63	1,842.05	2.782E-02	Pulse	0.30	3
As	75	72	2	0.521	ppb	8.39	402.23	6.079E-03	Pulse	0.75	3
Se	78	72	1	0.494	ppb	11.54	182.23	2.346E-03	Pulse	0.30	3
Mo	95	103	2	0.491	ppb	2.85	2,290.27	1.152E-03	Pulse	0.30	3
Ag	107	103	3	0.272	ppb	12.88	9,853.78	2.419E-03	Pulse	0.30	3
Cd	111	115	3	0.509	ppb	2.27	4,344.30	9.859E-04	Pulse	0.30	3
Sb	121	115	3	0.501	ppb	1.60	14,026.81	3.183E-03	Pulse	0.30	3
Ba	137	159	3	0.524	ppb	2.79	5,514.43	7.844E-04	Pulse	0.30	3
Tl	205	209	3	0.480	ppb	1.68	40,865.05	8.697E-03	Pulse	0.30	3
Pb	208	209	3	0.506	ppb	0.43	59,380.40	1.264E-02	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.499	ppb	0.91	64,731.52	1.378E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,832,117.21	0.39	107.6	Analog	0.30	3
2	Sc	45	99,050.58	2.27	109.3	Pulse	0.30	3
3	Sc	45	2,603,383.05	0.57	109.2	Analog	0.30	3
1	Ge	72	77,642.54	0.66	111.0	Pulse	0.30	3
2	Ge	72	66,204.90	1.27	109.2	Pulse	0.30	3
2	Rh	103	1,988,312.50	1.48	108.7	Analog	0.30	3
3	Rh	103	4,071,645.88	0.43	109.9	Analog	0.30	3
3	In	115	4,406,247.94	0.50	110.3	Analog	0.30	3
3	Tb	159	7,030,793.71	0.84	110.0	Analog	0.30	3
3	Bi	209	4,698,418.23	0.62	110.1	Analog	0.30	3

Quantitation Report

File Name	A0516005.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:14
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	4.976	ppb	1.42	53,732.75	2.974E-02	Pulse	0.30	3
B	11	6	3	46.066	ppb	1.12	526,404.34	2.913E-01	Pulse	0.30	3
Na	23	45	2	47.720	ppb	0.60	109,014.03	1.105E+00	Pulse	0.30	3
Mg	26	45	2	53.815	ppb	1.70	7,023.96	7.118E-02	Pulse	0.30	3
Al	27	45	2	4.942	ppb	12.91	1,611.67	1.633E-02	Pulse	0.30	3
K	39	45	2	47.366	ppb	2.30	35,100.02	3.557E-01	Pulse	0.30	3
Ca	44	45	3	54.092	ppb	1.30	75,473.35	2.987E-02	Pulse	0.30	3
V	51	45	2	5.038	ppb	0.89	28,606.71	2.899E-01	Pulse	0.30	3
Cr	52	45	2	5.031	ppb	0.50	37,723.32	3.823E-01	Pulse	0.30	3
Mn	55	45	2	5.055	ppb	0.48	20,386.88	2.066E-01	Pulse	0.30	3
Fe	56	45	2	5.236	ppb	1.43	35,467.55	3.594E-01	Pulse	0.30	3
Co	59	45	2	5.045	ppb	0.66	68,881.24	6.980E-01	Pulse	0.30	3
Ni	60	72	2	5.035	ppb	0.63	17,706.85	2.718E-01	Pulse	0.30	3
Cu	63	72	2	5.050	ppb	1.10	50,532.08	7.758E-01	Pulse	0.30	3
Zn	66	72	2	5.160	ppb	1.38	8,460.95	1.299E-01	Pulse	0.30	3
As	75	72	2	5.075	ppb	4.24	3,740.48	5.745E-02	Pulse	0.75	3
Se	78	72	1	4.834	ppb	5.40	1,777.94	2.297E-02	Pulse	0.30	3
Mo	95	103	2	4.835	ppb	2.32	21,981.42	1.122E-02	Pulse	0.30	3
Ag	107	103	3	4.593	ppb	3.10	157,087.00	3.955E-02	Pulse	0.30	3
Cd	111	115	3	5.090	ppb	0.65	41,186.88	9.576E-03	Pulse	0.30	3
Sb	121	115	3	5.091	ppb	0.94	137,180.14	3.190E-02	Pulse	0.30	3
Ba	137	159	3	5.137	ppb	1.32	52,504.38	7.631E-03	Pulse	0.30	3
Tl	205	209	3	5.094	ppb	0.77	417,295.97	9.063E-02	Pulse	0.30	3
Pb	208	209	3	5.154	ppb	0.60	578,618.54	1.257E-01	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	5.034	ppb	0.17	638,713.07	1.387E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,807,024.80	0.79	106.1	Analog	0.30	3
2	Sc	45	98,687.59	1.69	108.9	Pulse	0.30	3
3	Sc	45	2,527,081.35	0.37	106.0	Analog	0.30	3
1	Ge	72	77,457.40	1.52	110.7	Pulse	0.30	3
2	Ge	72	65,143.14	1.63	107.4	Pulse	0.30	3
2	Rh	103	1,958,548.04	1.19	107.1	Analog	0.30	3
3	Rh	103	3,972,255.57	0.36	107.2	Analog	0.30	3
3	In	115	4,300,843.80	0.68	107.7	Analog	0.30	3
3	Tb	159	6,880,838.16	0.80	107.6	Analog	0.30	3
3	Bi	209	4,604,532.12	0.50	107.9	Analog	0.30	3

Quantitation Report

File Name	A0516006.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:19
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.128	ppb	1.12	108,785.78	6.051E-02	Pulse	0.30	3
B	11	6	3	101.298	ppb	1.24	1,089,074.52	6.058E-01	Analog	0.30	3
Na	23	45	2	98.324	ppb	2.54	179,763.31	1.841E+00	Pulse	0.30	3
Mg	26	45	2	103.558	ppb	4.39	13,254.60	1.358E-01	Pulse	0.30	3
Al	27	45	2	9.955	ppb	1.59	2,889.05	2.958E-02	Pulse	0.30	3
K	39	45	2	99.845	ppb	1.70	56,174.21	5.752E-01	Pulse	0.30	3
Ca	44	45	3	101.438	ppb	0.26	134,747.34	5.271E-02	Pulse	0.30	3
V	51	45	2	10.066	ppb	2.15	55,494.86	5.684E-01	Pulse	0.30	3
Cr	52	45	2	10.128	ppb	3.20	74,348.30	7.618E-01	Pulse	0.30	3
Mn	55	45	2	10.392	ppb	2.00	41,356.37	4.236E-01	Pulse	0.30	3
Fe	56	45	2	10.405	ppb	1.20	68,458.87	7.011E-01	Pulse	0.30	3
Co	59	45	2	10.132	ppb	1.32	136,829.39	1.401E+00	Pulse	0.30	3
Ni	60	72	2	10.120	ppb	0.37	35,303.33	5.439E-01	Pulse	0.30	3
Cu	63	72	2	10.104	ppb	0.45	99,850.79	1.538E+00	Pulse	0.30	3
Zn	66	72	2	10.132	ppb	2.91	15,725.35	2.423E-01	Pulse	0.30	3
As	75	72	2	10.134	ppb	1.35	7,433.32	1.145E-01	Pulse	0.75	3
Se	78	72	1	10.439	ppb	2.08	3,775.04	4.960E-02	Pulse	0.30	3
Mo	95	103	2	9.819	ppb	0.72	44,290.06	2.278E-02	Pulse	0.30	3
Ag	107	103	3	9.592	ppb	1.50	334,211.96	8.249E-02	Pulse	0.30	3
Cd	111	115	3	10.209	ppb	1.22	84,029.93	1.918E-02	Pulse	0.30	3
Sb	121	115	3	10.052	ppb	0.37	275,793.96	6.293E-02	Pulse	0.30	3
Ba	137	159	3	10.303	ppb	0.85	107,391.45	1.530E-02	Pulse	0.30	3
Tl	205	209	3	10.195	ppb	0.35	854,866.84	1.812E-01	Pulse	0.30	3
Pb	208	209	3	10.224	ppb	0.98	1,174,585.41	2.490E-01	Pulse	0.30	3
U	238	209	3	10.084	ppb	0.43	1,310,660.79	2.778E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,797,762.78	0.63	105.6	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	97,658.92	2.88	107.8	Pulse	0.30	3
3	Sc	45	2,556,285.12	0.40	107.3	Analog	0.30	3
1	Ge	72	76,115.68	0.09	108.8	Pulse	0.30	3
2	Ge	72	64,905.26	0.99	107.0	Pulse	0.30	3
2	Rh	103	1,944,145.60	1.55	106.3	Analog	0.30	3
3	Rh	103	4,051,306.33	0.36	109.3	Analog	0.30	3
3	In	115	4,382,320.48	0.84	109.7	Analog	0.30	3
3	Tb	159	7,020,078.99	0.17	109.8	Analog	0.30	3
3	Bi	209	4,718,123.65	0.44	110.6	Analog	0.30	3

Quantitation Report

File Name	A0516007.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:25
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.728	ppb	0.86	210,704.57	1.179E-01	Pulse	0.30	3
B	11	6	3	199.492	ppb	1.36	2,082,748.85	1.165E+00	Analog	0.30	3
Na	23	45	2	220.835	ppb	1.25	349,133.88	3.625E+00	Pulse	0.30	3
Mg	26	45	2	206.006	ppb	1.32	25,912.91	2.690E-01	Pulse	0.30	3
Al	27	45	2	21.618	ppb	3.96	5,815.36	6.039E-02	Pulse	0.30	3
K	39	45	2	204.117	ppb	0.61	97,418.46	1.011E+00	Pulse	0.30	3
Ca	44	45	3	210.923	ppb	0.72	263,233.45	1.055E-01	Pulse	0.30	3
V	51	45	2	20.211	ppb	0.64	108,886.03	1.130E+00	Pulse	0.30	3
Cr	52	45	2	20.188	ppb	1.14	145,506.02	1.511E+00	Pulse	0.30	3
Mn	55	45	2	20.463	ppb	1.29	80,236.03	8.330E-01	Pulse	0.30	3
Fe	56	45	2	20.517	ppb	1.28	131,919.84	1.370E+00	Pulse	0.30	3
Co	59	45	2	20.383	ppb	1.75	271,477.06	2.819E+00	Pulse	0.30	3
Ni	60	72	2	20.063	ppb	1.28	69,147.00	1.076E+00	Pulse	0.30	3
Cu	63	72	2	20.047	ppb	1.43	195,281.82	3.039E+00	Pulse	0.30	3
Zn	66	72	2	19.830	ppb	1.41	29,665.62	4.616E-01	Pulse	0.30	3
As	75	72	2	20.141	ppb	0.73	14,612.86	2.274E-01	Pulse	0.75	3
Se	78	72	1	19.686	ppb	6.68	7,050.70	9.353E-02	Pulse	0.30	3
Mo	95	103	2	19.752	ppb	0.50	88,477.20	4.581E-02	Pulse	0.30	3
Ag	107	103	3	19.834	ppb	0.39	671,313.01	1.705E-01	Pulse	0.30	3
Cd	111	115	3	20.256	ppb	1.09	163,462.72	3.802E-02	Pulse	0.30	3
Sb	121	115	3	20.189	ppb	0.47	543,246.33	1.263E-01	Pulse	0.30	3
Ba	137	159	3	20.294	ppb	0.85	207,614.45	3.013E-02	Pulse	0.30	3
Tl	205	209	3	20.184	ppb	0.84	1,671,230.18	3.585E-01	Analog	0.30	3
Pb	208	209	3	20.272	ppb	0.12	2,299,456.29	4.933E-01	Pulse	0.30	3
U	238	209	3	20.053	ppb	1.15	2,575,000.69	5.524E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,787,797.98	0.40	105.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	96,322.16	1.69	106.3	Pulse	0.30	3
3	Sc	45	2,494,189.76	0.97	104.7	Analog	0.30	3
1	Ge	72	75,415.82	1.29	107.8	Pulse	0.30	3
2	Ge	72	64,259.66	0.44	106.0	Pulse	0.30	3
2	Rh	103	1,931,268.37	0.79	105.6	Analog	0.30	3
3	Rh	103	3,937,407.06	0.49	106.2	Analog	0.30	3
3	In	115	4,299,710.19	0.28	107.6	Analog	0.30	3
3	Tb	159	6,891,659.34	0.65	107.8	Analog	0.30	3
3	Bi	209	4,661,409.37	0.15	109.2	Analog	0.30	3

Quantitation Report

File Name	A0516008.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:30
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	39.560	ppb	0.99	440,493.65	2.363E-01	Pulse	0.30	3
B	11	6	3	395.011	ppb	1.01	4,246,354.47	2.278E+00	Analog	0.30	3
Na	23	45	2	408.488	ppb	0.59	633,870.92	6.357E+00	Pulse	0.30	3
Mg	26	45	2	412.926	ppb	0.82	53,638.29	5.379E-01	Pulse	0.30	3
Al	27	45	2	42.166	ppb	0.90	11,435.69	1.147E-01	Pulse	0.30	3
K	39	45	2	405.865	ppb	0.71	185,002.97	1.855E+00	Pulse	0.30	3
Ca	44	45	3	406.541	ppb	0.68	520,790.04	1.999E-01	Pulse	0.30	3
V	51	45	2	40.566	ppb	0.63	225,162.12	2.258E+00	Pulse	0.30	3
Cr	52	45	2	40.301	ppb	0.46	299,964.16	3.008E+00	Pulse	0.30	3
Mn	55	45	2	40.839	ppb	1.02	165,664.39	1.661E+00	Pulse	0.30	3
Fe	56	45	2	41.966	ppb	1.07	277,929.95	2.787E+00	Pulse	0.30	3
Co	59	45	2	40.732	ppb	0.56	561,645.63	5.633E+00	Pulse	0.30	3
Ni	60	72	2	40.547	ppb	0.99	143,801.59	2.172E+00	Pulse	0.30	3
Cu	63	72	2	40.096	ppb	1.20	401,444.81	6.064E+00	Pulse	0.30	3
Zn	66	72	2	40.769	ppb	1.72	61,907.68	9.352E-01	Pulse	0.30	3
As	75	72	2	40.030	ppb	1.58	29,903.79	4.518E-01	Pulse	0.75	3
Se	78	72	1	39.759	ppb	2.29	14,641.71	1.889E-01	Pulse	0.30	3
Mo	95	103	2	39.398	ppb	0.48	182,871.43	9.136E-02	Pulse	0.30	3
Ag	107	103	3	40.089	ppb	0.39	1,415,725.84	3.445E-01	Analog	0.30	3
Cd	111	115	3	40.371	ppb	0.10	340,457.24	7.574E-02	Pulse	0.30	3
Sb	121	115	3	40.335	ppb	0.29	1,134,424.45	2.524E-01	Pulse	0.30	3
Ba	137	159	3	40.621	ppb	0.25	435,384.97	6.029E-02	Pulse	0.30	3
Tl	205	209	3	39.869	ppb	0.30	3,462,988.25	7.080E-01	Analog	0.30	3
Pb	208	209	3	40.235	ppb	0.54	4,787,000.52	9.787E-01	Analog	0.30	3
U	238	209	3	39.450	ppb	0.15	5,315,056.70	1.087E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,864,046.75	1.41	109.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	99,715.49	1.42	110.0	Pulse	0.30	3
3	Sc	45	2,604,880.97	0.89	109.3	Analog	0.30	3
1	Ge	72	77,468.86	3.99	110.7	Pulse	0.30	3
2	Ge	72	66,202.76	1.41	109.2	Pulse	0.30	3
2	Rh	103	2,001,547.25	0.95	109.5	Analog	0.30	3
3	Rh	103	4,109,234.83	0.72	110.9	Analog	0.30	3
3	In	115	4,495,027.89	0.34	112.5	Analog	0.30	3
3	Tb	159	7,221,024.75	0.72	112.9	Analog	0.30	3
3	Bi	209	4,891,111.52	0.76	114.6	Analog	0.30	3

Quantitation Report

File Name	A0516009.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:36
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	100.565	ppb	1.72	1,091,880.33	6.008E-01	Analog	0.30	3
B	11	6	3	982.383	ppb	0.62	10,218,727.30	5.623E+00	Analog	0.30	3
Na	23	45	2	1001.327	ppb	0.64	1,477,842.13	1.499E+01	Analog	0.30	3
Mg	26	45	2	1004.784	ppb	1.37	128,884.05	1.307E+00	Pulse	0.30	3
Al	27	45	2	100.873	ppb	1.16	26,602.41	2.698E-01	Pulse	0.30	3
K	39	45	2	1000.250	ppb	0.85	428,096.35	4.342E+00	Pulse	0.30	3
Ca	44	45	3	1012.862	ppb	0.61	1,269,631.34	4.925E-01	Analog	0.30	3
V	51	45	2	98.911	ppb	0.89	541,294.21	5.490E+00	Pulse	0.30	3
Cr	52	45	2	98.343	ppb	0.87	722,743.66	7.330E+00	Pulse	0.30	3
Mn	55	45	2	99.638	ppb	0.67	399,533.44	4.052E+00	Pulse	0.30	3
Fe	56	45	2	98.518	ppb	0.43	643,461.59	6.526E+00	Pulse	0.30	3
Co	59	45	2	99.399	ppb	1.36	1,355,347.36	1.374E+01	Analog	0.30	3
Ni	60	72	2	100.081	ppb	1.39	343,118.16	5.359E+00	Pulse	0.30	3
Cu	63	72	2	99.237	ppb	1.42	959,750.00	1.499E+01	Pulse	0.30	3
Zn	66	72	2	99.705	ppb	0.61	145,236.39	2.268E+00	Pulse	0.30	3
As	75	72	2	100.108	ppb	1.35	72,323.70	1.130E+00	Pulse	0.75	3
Se	78	72	1	100.280	ppb	0.63	35,759.24	4.764E-01	Pulse	0.30	3
Mo	95	103	2	98.821	ppb	0.71	441,771.88	2.291E-01	Pulse	0.30	3
Ag	107	103	3	100.060	ppb	0.44	3,434,094.58	8.598E-01	Analog	0.30	3
Cd	111	115	3	100.448	ppb	0.72	825,494.56	1.884E-01	Pulse	0.30	3
Sb	121	115	3	100.441	ppb	0.52	2,753,312.81	6.284E-01	Analog	0.30	3
Ba	137	159	3	100.681	ppb	0.76	1,056,178.42	1.494E-01	Pulse	0.30	3
Tl	205	209	3	99.539	ppb	1.21	8,397,917.58	1.767E+00	Analog	0.30	3
Pb	208	209	3	99.806	ppb	0.27	11,535,223.17	2.427E+00	Analog	0.30	3
U	238	209	3	98.893	ppb	1.06	12,943,744.92	2.724E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,817,387.01	0.60	106.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	98,604.36	1.47	108.8	Pulse	0.30	3
3	Sc	45	2,577,846.17	1.78	108.2	Analog	0.30	3
1	Ge	72	75,058.57	0.68	107.3	Pulse	0.30	3
2	Ge	72	64,034.43	0.56	105.6	Pulse	0.30	3
2	Rh	103	1,927,930.73	1.02	105.4	Analog	0.30	3
3	Rh	103	3,994,215.85	1.42	107.8	Analog	0.30	3
3	In	115	4,381,778.96	1.37	109.7	Analog	0.30	3
3	Tb	159	7,068,424.13	1.45	110.6	Analog	0.30	3
3	Bi	209	4,752,186.39	1.64	111.4	Analog	0.30	3

Quantitation Report

File Name	A0516010.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:41
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	199.827	ppb	1.30	2,142,320.94	1.194E+00	Analog	0.30	3
B	11	6	3	2009.891	ppb	1.61	20,588,124.34	1.147E+01	Analog	0.30	3
Na	23	45	2	1995.696	ppb	0.41	2,943,389.61	2.947E+01	Analog	0.30	3
Mg	26	45	2	1994.149	ppb	0.49	259,039.24	2.593E+00	Pulse	0.30	3
Al	27	45	2	198.972	ppb	1.05	52,836.75	5.289E-01	Pulse	0.30	3
K	39	45	2	1998.364	ppb	0.49	850,803.43	8.517E+00	Pulse	0.30	3
Ca	44	45	3	1990.994	ppb	1.16	2,492,540.19	9.645E-01	Analog	0.30	3
V	51	45	2	200.406	ppb	0.58	1,110,050.30	1.111E+01	Pulse	0.30	3
Cr	52	45	2	200.742	ppb	0.88	1,493,748.51	1.495E+01	Analog	0.30	3
Mn	55	45	2	199.946	ppb	0.99	812,119.23	8.130E+00	Pulse	0.30	3
Fe	56	45	2	200.270	ppb	0.65	1,323,919.20	1.325E+01	Analog	0.30	3
Co	59	45	2	200.108	ppb	0.84	2,764,138.73	2.767E+01	Analog	0.30	3
Ni	60	72	2	199.837	ppb	0.18	696,382.60	1.070E+01	Pulse	0.30	3
Cu	63	72	2	200.351	ppb	1.04	1,968,926.08	3.025E+01	Analog	0.30	3
Zn	66	72	2	196.286	ppb	0.53	289,839.98	4.452E+00	Pulse	0.30	3
As	75	72	2	199.917	ppb	0.71	146,819.46	2.255E+00	Pulse	0.75	3
Se	78	72	1	199.922	ppb	0.48	70,834.27	9.498E-01	Pulse	0.30	3
Mo	95	103	2	200.748	ppb	0.45	906,166.73	4.655E-01	Pulse	0.30	3
Ag	107	103	3	166.316	ppb	2.38	5,717,960.17	1.429E+00	Analog	0.30	3
Cd	111	115	3	199.663	ppb	1.97	1,661,892.74	3.745E-01	Analog	0.30	3
Sb	121	115	3	199.688	ppb	0.08	5,543,574.71	1.249E+00	Analog	0.30	3
Ba	137	159	3	199.487	ppb	2.22	2,119,170.66	2.961E-01	Analog	0.30	3
Tl	205	209	3	200.226	ppb	1.42	16,961,831.69	3.555E+00	Analog	0.30	3
Pb	208	209	3	200.008	ppb	0.91	23,207,913.54	4.864E+00	Analog	0.30	3
U	238	209	3	200.653	ppb	0.77	26,372,000.37	5.527E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,794,712.68	1.89	105.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	99,897.32	1.76	110.2	Pulse	0.30	3
3	Sc	45	2,584,183.68	0.75	108.4	Analog	0.30	3
1	Ge	72	74,582.36	1.70	106.6	Pulse	0.30	3
2	Ge	72	65,100.42	1.60	107.4	Pulse	0.30	3
2	Rh	103	1,946,717.78	1.20	106.5	Analog	0.30	3
3	Rh	103	4,000,841.50	0.84	107.9	Analog	0.30	3
3	In	115	4,437,506.35	0.88	111.1	Analog	0.30	3
3	Tb	159	7,157,897.95	0.70	112.0	Analog	0.30	3
3	Bi	209	4,771,662.78	0.97	111.8	Analog	0.30	3

Quantitation Report

File Name	A0516011.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:47
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	10/100 ug/L,200mL of 2MWST- 160201C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.505	ppb	0.69	104,234.83	6.277E-02	Pulse	0.30	3
B	11	6	3	2053.934	ppb	0.23	19,470,151.98	1.172E+01	Analog	0.30	3
Na	23	45	2	276.148	ppb	0.58	402,925.32	4.430E+00	Pulse	0.30	3
Mg	26	45	2	106.336	ppb	2.47	12,680.76	1.394E-01	Pulse	0.30	3
Al	27	45	2	204.011	ppb	0.48	49,318.64	5.422E-01	Pulse	0.30	3
K	39	45	2	105.608	ppb	2.00	54,506.41	5.994E-01	Pulse	0.30	3
Ca	44	45	3	139.428	ppb	1.08	168,029.94	7.104E-02	Pulse	0.30	3
V	51	45	2	10.300	ppb	1.20	52,869.94	5.814E-01	Pulse	0.30	3
Cr	52	45	2	10.454	ppb	2.41	71,466.43	7.860E-01	Pulse	0.30	3
Mn	55	45	2	103.952	ppb	0.62	384,468.29	4.227E+00	Pulse	0.30	3
Fe	56	45	2	105.351	ppb	1.38	634,493.34	6.977E+00	Pulse	0.30	3
Co	59	45	2	9.954	ppb	2.06	125,187.22	1.377E+00	Pulse	0.30	3
Ni	60	72	2	10.806	ppb	2.05	34,662.28	5.807E-01	Pulse	0.30	3
Cu	63	72	2	10.532	ppb	1.15	95,700.79	1.603E+00	Pulse	0.30	3
Zn	66	72	2	108.669	ppb	1.44	147,488.36	2.471E+00	Pulse	0.30	3
As	75	72	2	10.530	ppb	4.10	7,103.85	1.190E-01	Pulse	0.75	3
Se	78	72	1	10.599	ppb	3.62	3,443.85	5.036E-02	Pulse	0.30	3
Mo	95	103	2	10.375	ppb	1.96	43,340.77	2.407E-02	Pulse	0.30	3
Ag	107	103	3	10.669	ppb	0.89	339,974.93	9.175E-02	Pulse	0.30	3
Cd	111	115	3	10.820	ppb	0.68	82,483.63	2.032E-02	Pulse	0.30	3
Sb	121	115	3	10.757	ppb	0.79	273,340.63	6.734E-02	Pulse	0.30	3
Ba	137	159	3	108.036	ppb	0.10	1,037,681.40	1.603E-01	Pulse	0.30	3
Tl	205	209	3	10.953	ppb	0.82	859,323.80	1.947E-01	Pulse	0.30	3
Pb	208	209	3	10.627	ppb	0.23	1,142,370.28	2.588E-01	Pulse	0.30	3
U	238	209	3	10.040	ppb	0.48	1,221,070.46	2.766E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,660,673.33	0.07	97.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	90,952.54	2.03	100.4	Pulse	0.30	3
3	Sc	45	2,365,230.43	0.54	99.3	Analog	0.30	3
1	Ge	72	68,396.36	0.32	97.7	Pulse	0.30	3
2	Ge	72	59,700.95	1.83	98.5	Pulse	0.30	3
2	Rh	103	1,800,677.54	1.03	98.5	Analog	0.30	3
3	Rh	103	3,705,301.23	0.23	100.0	Analog	0.30	3
3	In	115	4,058,927.81	0.47	101.6	Analog	0.30	3
3	Tb	159	6,471,428.03	0.33	101.2	Analog	0.30	3
3	Bi	209	4,414,702.85	0.24	103.5	Analog	0.30	3

Quantitation Report

File Name	A0516012.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:52
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	38.16	68.89	4.089E-05	Pulse	0.30	3
B	11	6	3	40.357	ppb	3.94	435,368.65	2.588E-01	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	35,549.97	3.894E-01	Pulse	0.30	3
Mg	26	45	2	0.098	ppb	92.39	124.45	1.365E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	170.00	1.867E-03	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	14,376.74	1.575E-01	Pulse	0.30	3
Ca	44	45	3	2.338	ppb	7.72	11,455.50	4.893E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	595.59	6.509E-03	Pulse	0.30	3
Cr	52	45	2	0.033	ppb	25.10	920.03	1.009E-02	Pulse	0.30	3
Mn	55	45	2	0.019	ppb	10.00	167.60	1.837E-03	Pulse	0.30	3
Fe	56	45	2	0.127	ppb	9.86	1,979.58	2.169E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	72.14	54.40	5.939E-04	Pulse	0.30	3
Ni	60	72	2	0.004	ppb	110.16	153.28	2.541E-03	Pulse	0.30	3
Cu	63	72	2	0.002	ppb	263.79	853.04	1.414E-02	Pulse	0.30	3
Zn	66	72	2	0.572	ppb	7.80	1,574.33	2.611E-02	Pulse	0.30	3
As	75	72	2	0.016	ppb	25.49	22.67	3.760E-04	Pulse	0.75	3
Se	78	72	1	0.020	ppb	2.38	6.67	9.407E-05	Pulse	0.30	3
Mo	95	103	2	0.051	ppb	33.26	242.23	1.326E-04	Pulse	0.30	3
Ag	107	103	3	0.092	ppb	2.24	3,259.04	8.718E-04	Pulse	0.30	3
Cd	111	115	3	0.003	ppb	70.30	145.11	3.586E-05	Pulse	0.30	3
Sb	121	115	3	0.057	ppb	4.97	1,650.16	4.076E-04	Pulse	0.30	3
Ba	137	159	3	0.007	ppb	53.68	115.34	1.784E-05	Pulse	0.30	3
Tl	205	209	3	0.169	ppb	2.49	13,847.00	3.177E-03	Pulse	0.30	3
Pb	208	209	3	0.006	ppb	6.27	2,137.32	4.903E-04	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.004	ppb	8.76	662.20	1.519E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,682,435.23	0.97	98.8	Analog	0.30	3
2	Sc	45	91,284.34	2.78	100.7	Pulse	0.30	3
3	Sc	45	2,341,281.25	0.48	98.2	Analog	0.30	3
1	Ge	72	70,928.15	2.41	101.4	Pulse	0.30	3
2	Ge	72	60,303.47	1.02	99.5	Pulse	0.30	3
2	Rh	103	1,821,127.77	1.56	99.6	Analog	0.30	3
3	Rh	103	3,737,746.09	0.80	100.8	Analog	0.30	3
3	In	115	4,047,311.03	0.92	101.3	Analog	0.30	3
3	Tb	159	6,480,038.03	1.02	101.4	Analog	0.30	3
3	Bi	209	4,359,150.07	0.69	102.2	Analog	0.30	3

Quantitation Report

File Name	A0516013.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 07:58
Sample Name	LLICV,CCV1,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.512	ppb	4.34	5,088.75	3.066E-03	Pulse	0.30	3
B	11	6	3	22.818	ppb	1.15	263,856.03	1.590E-01	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	32,222.67	3.610E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	74.45	8.325E-04	Pulse	0.30	3
Al	27	45	2	9.656	ppb	7.68	2,570.31	2.879E-02	Pulse	0.30	3
K	39	45	2	0.425	ppb	232.70	14,230.01	1.594E-01	Pulse	0.30	3
Ca	44	45	3	0.930	ppb	21.64	9,741.04	4.214E-03	Pulse	0.30	3
V	51	45	2	1.021	ppb	5.22	6,019.12	6.738E-02	Pulse	0.30	3
Cr	52	45	2	1.099	ppb	3.72	7,990.00	8.949E-02	Pulse	0.30	3
Mn	55	45	2	0.536	ppb	6.33	2,039.03	2.285E-02	Pulse	0.30	3
Fe	56	45	2	10.472	ppb	2.45	62,991.69	7.055E-01	Pulse	0.30	3
Co	59	45	2	0.500	ppb	2.15	6,209.20	6.952E-02	Pulse	0.30	3
Ni	60	72	2	1.044	ppb	1.63	3,446.02	5.820E-02	Pulse	0.30	3
Cu	63	72	2	1.032	ppb	0.48	10,042.13	1.696E-01	Pulse	0.30	3
Zn	66	72	2	10.586	ppb	2.58	14,954.91	2.526E-01	Pulse	0.30	3
As	75	72	2	0.100	ppb	10.61	78.23	1.321E-03	Pulse	0.75	3
Se	78	72	1	0.517	ppb	7.30	167.78	2.457E-03	Pulse	0.30	3
Mo	95	103	2	0.542	ppb	7.19	2,259.14	1.270E-03	Pulse	0.30	3
Ag	107	103	3	0.304	ppb	7.78	9,884.66	2.696E-03	Pulse	0.30	3
Cd	111	115	3	0.568	ppb	4.50	4,355.36	1.096E-03	Pulse	0.30	3
Sb	121	115	3	0.569	ppb	1.15	14,338.21	3.607E-03	Pulse	0.30	3
Ba	137	159	3	1.064	ppb	2.44	10,054.81	1.586E-03	Pulse	0.30	3
Tl	205	209	3	0.508	ppb	2.41	39,238.33	9.202E-03	Pulse	0.30	3
Pb	208	209	3	1.081	ppb	0.65	113,522.90	2.662E-02	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.510	ppb	0.68	60,091.98	1.409E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,660,046.47	0.59	97.5	Analog	0.30	3
2	Sc	45	89,316.00	2.24	98.6	Pulse	0.30	3
3	Sc	45	2,311,953.37	0.74	97.0	Analog	0.30	3
1	Ge	72	68,379.37	2.64	97.7	Pulse	0.30	3
2	Ge	72	59,214.94	0.54	97.7	Pulse	0.30	3
2	Rh	103	1,777,981.22	0.39	97.2	Analog	0.30	3
3	Rh	103	3,666,163.28	0.23	98.9	Analog	0.30	3
3	In	115	3,975,048.48	0.50	99.5	Analog	0.30	3
3	Tb	159	6,340,337.82	0.59	99.2	Analog	0.30	3
3	Bi	209	4,264,349.63	0.37	99.9	Analog	0.30	3

Quantitation Report

File Name	A0516014.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 08:04
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	28.67	52.23	2.466E-05	Pulse	0.30	3
B	11	6	3	12.434	ppb	0.96	211,237.39	9.983E-02	Pulse	0.30	3
Na	23	45	2	98639.491	ppb	1.45	158,817,315.41	1.437E+03	Analog	0.30	3
Mg	26	45	2	100042.323	ppb	1.32	14,376,288.12	1.300E+02	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	216.36	1.955E-03	Pulse	0.30	3
K	39	45	2	102551.568	ppb	1.32	47,445,309.85	4.291E+02	Analog	0.30	3
Ca	44	45	3	92843.045	ppb	0.38	142,852,023.42	4.480E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	660.04	5.997E-03	Pulse	0.30	3
Cr	52	45	2	0.163	ppb	13.98	2,183.79	1.980E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-18,833.70	-1.704E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-8,049.60	-7.293E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-80.66	-7.289E-04	Pulse	0.30	3
Ni	60	72	2	0.129	ppb	4.96	605.68	9.256E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-5,754.94	-8.800E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-413.85	-6.256E-03	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	10.66	1.622E-04	Pulse	0.75	3
Se	78	72	1	0.023	ppb	136.69	7.78	1.103E-04	Pulse	0.30	3
Mo	95	103	2	0.053	ppb	11.19	245.57	1.361E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-32,318.94	-8.094E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-225.52	-5.176E-05	Pulse	0.30	3
Sb	121	115	3	0.030	ppb	13.73	1,031.19	2.364E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-74,347.86	-1.082E-02	Pulse	0.30	3
Tl	205	209	3	0.052	ppb	3.06	4,181.90	1.104E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-90,062.09	-2.377E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-8,360.30	-2.206E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,116,137.32	0.74	124.2	Analog	0.30	3
2	Sc	45	110,600.67	4.99	122.1	Pulse	0.30	3
3	Sc	45	3,188,476.03	1.68	133.8	Analog	0.30	3
1	Ge	72	69,497.08	1.93	99.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	65,383.06	3.69	107.8	Pulse	0.30	3
2	Rh	103	1,807,128.85	3.15	98.8	Analog	0.30	3
3	Rh	103	3,992,720.46	1.39	107.7	Analog	0.30	3
3	In	115	4,358,235.21	1.23	109.1	Analog	0.30	3
3	Tb	159	6,868,467.81	0.71	107.4	Analog	0.30	3
3	Bi	209	3,788,889.56	0.84	88.8	Analog	0.30	3

Quantitation Report

File Name	A0516015.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 08:09
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.235	ppb	0.83	247,873.36	1.149E-01	Pulse	0.30	3
B	11	6	3	207.873	ppb	1.40	2,615,717.18	1.213E+00	Analog	0.30	3
Na	23	45	2	94620.002	ppb	0.55	159,701,418.73	1.378E+03	Analog	0.30	3
Mg	26	45	2	96944.720	ppb	0.73	14,603,046.31	1.260E+02	Analog	0.30	3
Al	27	45	2	25.907	ppb	15.06	8,315.32	7.172E-02	Pulse	0.30	3
K	39	45	2	99146.400	ppb	0.50	48,087,449.84	4.149E+02	Analog	0.30	3
Ca	44	45	3	90638.460	ppb	0.37	143,927,038.97	4.374E+01	Analog	0.30	3
V	51	45	2	20.010	ppb	0.79	129,715.49	1.119E+00	Pulse	0.30	3
Cr	52	45	2	19.219	ppb	0.87	166,715.55	1.439E+00	Pulse	0.30	3
Mn	55	45	2	20.404	ppb	0.80	96,261.40	8.306E-01	Pulse	0.30	3
Fe	56	45	2	17.668	ppb	0.88	136,887.12	1.181E+00	Pulse	0.30	3
Co	59	45	2	18.243	ppb	0.95	292,378.23	2.523E+00	Pulse	0.30	3
Ni	60	72	2	19.870	ppb	0.99	72,146.45	1.066E+00	Pulse	0.30	3
Cu	63	72	2	18.125	ppb	1.50	186,084.27	2.749E+00	Pulse	0.30	3
Zn	66	72	2	17.810	ppb	4.86	28,145.13	4.160E-01	Pulse	0.30	3
As	75	72	2	20.036	ppb	0.42	15,316.49	2.262E-01	Pulse	0.75	3
Se	78	72	1	18.082	ppb	1.13	6,369.30	8.590E-02	Pulse	0.30	3
Mo	95	103	2	22.716	ppb	1.67	98,070.55	5.268E-02	Pulse	0.30	3
Ag	107	103	3	18.170	ppb	1.40	634,080.75	1.562E-01	Pulse	0.30	3
Cd	111	115	3	18.770	ppb	0.80	156,738.70	3.523E-02	Pulse	0.30	3
Sb	121	115	3	19.976	ppb	0.42	556,194.91	1.250E-01	Pulse	0.30	3
Ba	137	159	3	18.429	ppb	0.36	188,573.37	2.736E-02	Pulse	0.30	3
Tl	205	209	3	21.455	ppb	0.56	1,453,705.45	3.811E-01	Analog	0.30	3
Pb	208	209	3	20.624	ppb	0.71	1,914,355.79	5.019E-01	Pulse	0.30	3
U	238	209	3	22.299	ppb	1.38	2,343,080.89	6.143E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,157,127.05	1.03	126.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	115,908.30	3.25	127.9	Pulse	0.30	3
3	Sc	45	3,290,434.57	0.86	138.1	Analog	0.30	3
1	Ge	72	74,145.35	0.98	106.0	Pulse	0.30	3
2	Ge	72	67,708.92	3.32	111.7	Pulse	0.30	3
2	Rh	103	1,861,128.18	1.64	101.8	Analog	0.30	3
3	Rh	103	4,059,284.18	0.83	109.5	Analog	0.30	3
3	In	115	4,449,116.78	1.21	111.4	Analog	0.30	3
3	Tb	159	6,892,681.57	0.83	107.8	Analog	0.30	3
3	Bi	209	3,814,627.90	0.80	89.4	Analog	0.30	3

Quantitation Report

File Name A0516016.D
File Path C:\ICPMH\1\DATA\160516A.B
Method File DEFAULT.M
Method Path C:\ICPMH\1\METHODS\
Acq Time 05/16/2016 08:22
Sample Name N019707-001B,SAMP,50
Sample Type Sample
Comment
Prep Dilution 1.000
Auto Dilution N/A
Total Dilution 1.000
Operator Name
Acq Mode Spectrum
Cal Title
Cal Type External Calibration
Last Calib 05/16/2016 08:39
Bkg File
Bkg Mode Count Subtraction except for ISTD
Interference File Acq. Defined
FQ Blank File
VIS Fit Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	49.22	50.00	2.883E-05	Pulse	0.30	3
B	11	6	3	16.642	ppb	1.42	214,770.33	1.238E-01	Pulse	0.30	3
Na	23	45	2	1634.013	ppb	1.03	2,139,885.23	2.420E+01	Analog	0.30	3
Mg	26	45	2	225.588	ppb	1.46	26,038.72	2.944E-01	Pulse	0.30	3
Al	27	45	2	67.620	ppb	1.85	16,088.99	1.819E-01	Pulse	0.30	3
K	39	45	2	595.622	ppb	0.94	234,268.61	2.649E+00	Pulse	0.30	3
Ca	44	45	3	980.731	ppb	1.26	1,163,872.43	4.770E-01	Mix	0.30	3
V	51	45	2	0.161	ppb	14.11	1,745.72	1.972E-02	Pulse	0.30	3
Cr	52	45	2	2.832	ppb	3.34	19,319.04	2.185E-01	Pulse	0.30	3
Mn	55	45	2	2.144	ppb	1.83	7,804.88	8.824E-02	Pulse	0.30	3
Fe	56	45	2	98.180	ppb	1.56	575,039.78	6.503E+00	Pulse	0.30	3
Co	59	45	2	0.118	ppb	5.25	1,481.82	1.676E-02	Pulse	0.30	3
Ni	60	72	2	8.271	ppb	2.16	25,978.53	4.450E-01	Pulse	0.30	3
Cu	63	72	2	2.421	ppb	2.03	22,134.01	3.791E-01	Pulse	0.30	3
Zn	66	72	2	59.302	ppb	1.89	79,076.58	1.354E+00	Pulse	0.30	3
As	75	72	2	0.043	ppb	35.45	39.92	6.814E-04	Pulse	0.75	3
Se	78	72	1	0.100	ppb	29.60	33.34	4.735E-04	Pulse	0.30	3
Mo	95	103	2	59.316	ppb	0.05	242,350.14	1.375E-01	Pulse	0.30	3
Ag	107	103	3	0.035	ppb	8.68	1,440.65	3.858E-04	Pulse	0.30	3
Cd	111	115	3	0.063	ppb	9.94	602.75	1.486E-04	Pulse	0.30	3
Sb	121	115	3	0.086	ppb	5.82	2,370.28	5.843E-04	Pulse	0.30	3
Ba	137	159	3	3.188	ppb	0.51	30,460.99	4.738E-03	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	3.70	2,651.47	6.154E-04	Pulse	0.30	3
Pb	208	209	3	0.396	ppb	1.43	42,982.78	9.975E-03	Pulse	0.30	3
U	238	209	3	0.104	ppb	2.10	12,459.28	2.891E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,734,970.31	0.50	101.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	88,439.37	2.15	97.6	Pulse	0.30	3
3	Sc	45	2,440,019.20	0.32	102.4	Analog	0.30	3
1	Ge	72	70,366.82	0.73	100.6	Pulse	0.30	3
2	Ge	72	58,404.32	2.58	96.3	Pulse	0.30	3
2	Rh	103	1,761,957.35	1.46	96.4	Analog	0.30	3
3	Rh	103	3,734,341.40	0.55	100.8	Analog	0.30	3
3	In	115	4,057,060.56	0.45	101.6	Analog	0.30	3
3	Tb	159	6,429,266.36	0.75	100.6	Analog	0.30	3
3	Bi	209	4,308,967.09	0.30	101.0	Analog	0.30	3

Quantitation Report

File Name	A0516017.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 08:28
Sample Name	N019707-002B,SAMP,50
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.007	ppb	28.51	90.00	5.176E-05	Pulse	0.30	3
B	11	6	3	6.869	ppb	0.88	118,399.50	6.814E-02	Pulse	0.30	3
Na	23	45	2	331.190	ppb	1.48	474,582.75	5.232E+00	Pulse	0.30	3
Mg	26	45	2	95.075	ppb	2.58	11,322.03	1.248E-01	Pulse	0.30	3
Al	27	45	2	133.852	ppb	2.16	32,376.66	3.569E-01	Pulse	0.30	3
K	39	45	2	73.864	ppb	4.48	42,319.55	4.666E-01	Pulse	0.30	3
Ca	44	45	3	318.538	ppb	0.87	381,316.28	1.575E-01	Pulse	0.30	3
V	51	45	2	0.400	ppb	7.21	2,989.29	3.296E-02	Pulse	0.30	3
Cr	52	45	2	0.486	ppb	3.71	3,974.93	4.382E-02	Pulse	0.30	3
Mn	55	45	2	6.879	ppb	0.91	25,467.92	2.807E-01	Pulse	0.30	3
Fe	56	45	2	254.944	ppb	2.07	1,529,857.63	1.687E+01	Analog	0.30	3
Co	59	45	2	0.118	ppb	12.60	1,516.85	1.672E-02	Pulse	0.30	3
Ni	60	72	2	1.168	ppb	3.75	3,888.26	6.484E-02	Pulse	0.30	3
Cu	63	72	2	2.546	ppb	1.35	23,861.90	3.980E-01	Pulse	0.30	3
Zn	66	72	2	58.253	ppb	1.12	79,771.25	1.331E+00	Pulse	0.30	3
As	75	72	2	0.086	ppb	13.01	69.75	1.163E-03	Pulse	0.75	3
Se	78	72	1	0.013	ppb	114.32	4.44	6.082E-05	Pulse	0.30	3
Mo	95	103	2	0.146	ppb	9.19	643.37	3.529E-04	Pulse	0.30	3
Ag	107	103	3	0.012	ppb	20.53	699.50	1.859E-04	Pulse	0.30	3
Cd	111	115	3	0.039	ppb	12.38	430.32	1.047E-04	Pulse	0.30	3
Sb	121	115	3	0.074	ppb	5.68	2,109.13	5.134E-04	Pulse	0.30	3
Ba	137	159	3	4.436	ppb	2.53	42,814.58	6.591E-03	Pulse	0.30	3
Tl	205	209	3	0.017	ppb	8.42	2,069.13	4.800E-04	Pulse	0.30	3
Pb	208	209	3	1.280	ppb	0.46	135,580.46	3.145E-02	Pulse	0.30	3
U	238	209	3	0.008	ppb	5.11	1,160.71	2.693E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,737,654.19	0.46	102.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	90,723.41	1.34	100.1	Pulse	0.30	3
3	Sc	45	2,421,508.05	0.15	101.6	Analog	0.30	3
1	Ge	72	73,103.97	0.58	104.5	Pulse	0.30	3
2	Ge	72	59,954.35	1.16	98.9	Pulse	0.30	3
2	Rh	103	1,823,070.68	0.23	99.7	Analog	0.30	3
3	Rh	103	3,761,980.85	0.45	101.5	Analog	0.30	3
3	In	115	4,108,264.33	0.68	102.8	Analog	0.30	3
3	Tb	159	6,495,772.40	0.31	101.6	Analog	0.30	3
3	Bi	209	4,310,647.44	0.53	101.0	Analog	0.30	3

Quantitation Report

File Name	A0516018.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 08:33
Sample Name	N019709-001C,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	25.33	53.34	3.103E-05	Pulse	0.30	3
B	11	6	3	5.478	ppb	2.89	103,458.90	6.022E-02	Pulse	0.30	3
Na	23	45	2	325.902	ppb	1.34	477,893.88	5.155E+00	Pulse	0.30	3
Mg	26	45	2	41.608	ppb	2.71	5,128.77	5.532E-02	Pulse	0.30	3
Al	27	45	2	38.724	ppb	7.98	9,800.69	1.056E-01	Pulse	0.30	3
K	39	45	2	36.442	ppb	6.89	28,733.37	3.100E-01	Pulse	0.30	3
Ca	44	45	3	145.715	ppb	0.51	179,187.92	7.408E-02	Pulse	0.30	3
V	51	45	2	0.131	ppb	16.61	1,675.72	1.809E-02	Pulse	0.30	3
Cr	52	45	2	0.142	ppb	15.26	1,692.64	1.823E-02	Pulse	0.30	3
Mn	55	45	2	1.631	ppb	1.05	6,247.95	6.738E-02	Pulse	0.30	3
Fe	56	45	2	52.539	ppb	0.31	323,271.67	3.486E+00	Pulse	0.30	3
Co	59	45	2	0.035	ppb	11.38	493.71	5.331E-03	Pulse	0.30	3
Ni	60	72	2	0.185	ppb	9.91	758.64	1.224E-02	Pulse	0.30	3
Cu	63	72	2	0.868	ppb	2.35	8,978.56	1.447E-01	Pulse	0.30	3
Zn	66	72	2	83.407	ppb	0.53	117,820.63	1.900E+00	Pulse	0.30	3
As	75	72	2	0.024	ppb	34.62	29.32	4.722E-04	Pulse	0.75	3
Se	78	72	1	0.010	ppb	99.98	3.33	4.581E-05	Pulse	0.30	3
Mo	95	103	2	0.064	ppb	19.85	298.90	1.616E-04	Pulse	0.30	3
Ag	107	103	3	0.007	ppb	20.67	537.35	1.428E-04	Pulse	0.30	3
Cd	111	115	3	0.058	ppb	19.04	570.83	1.403E-04	Pulse	0.30	3
Sb	121	115	3	0.084	ppb	6.76	2,328.06	5.726E-04	Pulse	0.30	3
Ba	137	159	3	1.453	ppb	1.99	13,957.32	2.164E-03	Pulse	0.30	3
Tl	205	209	3	0.014	ppb	6.59	1,882.42	4.383E-04	Pulse	0.30	3
Pb	208	209	3	0.637	ppb	0.63	67,993.11	1.583E-02	Pulse	0.30	3
U	238	209	3	0.004	ppb	19.63	594.17	1.383E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,718,230.85	0.88	100.9	Analog	0.30	3
2	Sc	45	92,725.36	2.11	102.3	Pulse	0.30	3
3	Sc	45	2,418,928.97	0.30	101.5	Analog	0.30	3
1	Ge	72	72,654.59	0.23	103.8	Pulse	0.30	3
2	Ge	72	62,025.36	1.64	102.3	Pulse	0.30	3
2	Rh	103	1,844,893.45	2.09	100.9	Analog	0.30	3
3	Rh	103	3,762,978.69	0.72	101.5	Analog	0.30	3
3	In	115	4,066,530.51	0.43	101.8	Analog	0.30	3
3	Tb	159	6,450,737.75	0.42	100.9	Analog	0.30	3
3	Bi	209	4,294,580.35	0.25	100.6	Analog	0.30	3

Quantitation Report

File Name	A0516019.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 08:39
Sample Name	N019709-001C,SAMP,125
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	68.18	34.45	2.005E-05	Pulse	0.30	3
B	11	6	3	3.590	ppb	2.75	85,039.96	4.947E-02	Pulse	0.30	3
Na	23	45	2	65.860	ppb	1.93	126,883.88	1.369E+00	Pulse	0.30	3
Mg	26	45	2	9.630	ppb	3.75	1,274.55	1.375E-02	Pulse	0.30	3
Al	27	45	2	8.271	ppb	4.98	2,331.25	2.513E-02	Pulse	0.30	3
K	39	45	2	10.555	ppb	19.22	18,693.39	2.017E-01	Pulse	0.30	3
Ca	44	45	3	37.914	ppb	0.43	53,659.46	2.206E-02	Pulse	0.30	3
V	51	45	2	0.031	ppb	106.09	1,156.76	1.250E-02	Pulse	0.30	3
Cr	52	45	2	0.040	ppb	13.49	983.19	1.061E-02	Pulse	0.30	3
Mn	55	45	2	0.349	ppb	3.25	1,414.02	1.525E-02	Pulse	0.30	3
Fe	56	45	2	10.787	ppb	1.74	67,330.25	7.263E-01	Pulse	0.30	3
Co	59	45	2	0.006	ppb	16.36	120.91	1.302E-03	Pulse	0.30	3
Ni	60	72	2	0.045	ppb	23.96	292.98	4.733E-03	Pulse	0.30	3
Cu	63	72	2	0.196	ppb	2.38	2,691.33	4.343E-02	Pulse	0.30	3
Zn	66	72	2	17.189	ppb	1.91	24,908.82	4.019E-01	Pulse	0.30	3
As	75	72	2	0.023	ppb	53.83	28.45	4.586E-04	Pulse	0.75	3
Se	78	72	1	0.010	ppb	101.25	3.33	4.614E-05	Pulse	0.30	3
Mo	95	103	2	0.024	ppb	30.01	130.01	7.064E-05	Pulse	0.30	3
Ag	107	103	3	0.006	ppb	30.56	500.08	1.313E-04	Pulse	0.30	3
Cd	111	115	3	0.019	ppb	32.76	271.04	6.592E-05	Pulse	0.30	3
Sb	121	115	3	0.027	ppb	12.96	892.29	2.170E-04	Pulse	0.30	3
Ba	137	159	3	0.375	ppb	6.34	3,658.12	5.628E-04	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	11.38	1,553.49	3.595E-04	Pulse	0.30	3
Pb	208	209	3	0.143	ppb	1.07	16,438.35	3.804E-03	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.001	ppb	21.39	310.33	7.181E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,719,149.92	0.29	100.9	Analog	0.30	3
2	Sc	45	92,717.58	2.21	102.3	Pulse	0.30	3
3	Sc	45	2,432,464.24	0.74	102.1	Analog	0.30	3
1	Ge	72	72,609.89	1.79	103.8	Pulse	0.30	3
2	Ge	72	61,969.72	1.26	102.2	Pulse	0.30	3
2	Rh	103	1,844,631.31	1.53	100.9	Analog	0.30	3
3	Rh	103	3,807,203.07	0.57	102.7	Analog	0.30	3
3	In	115	4,113,267.66	0.82	103.0	Analog	0.30	3
3	Tb	159	6,496,679.14	1.15	101.6	Analog	0.30	3
3	Bi	209	4,321,404.55	0.07	101.3	Analog	0.30	3

Quantitation Report

File Name	A0516020.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 08:44
Sample Name	N019711-001C,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.137	ppb	3.47	1,377.90	8.250E-04	Pulse	0.30	3
B	11	6	3	11.875	ppb	3.61	161,406.32	9.664E-02	Pulse	0.30	3
Na	23	45	2	1596.748	ppb	1.22	2,131,669.00	2.366E+01	Analog	0.30	3
Mg	26	45	2	146.900	ppb	1.43	17,317.30	1.922E-01	Pulse	0.30	3
Al	27	45	2	119.741	ppb	2.67	28,810.48	3.196E-01	Pulse	0.30	3
K	39	45	2	522.890	ppb	1.10	211,296.16	2.345E+00	Pulse	0.30	3
Ca	44	45	3	633.392	ppb	0.45	728,453.10	3.094E-01	Pulse	0.30	3
V	51	45	2	0.995	ppb	7.07	5,943.54	6.593E-02	Pulse	0.30	3
Cr	52	45	2	6.720	ppb	6.71	45,747.10	5.080E-01	Pulse	0.30	3
Mn	55	45	2	8.925	ppb	2.06	32,794.05	3.639E-01	Pulse	0.30	3
Fe	56	45	2	603.708	ppb	0.56	3,597,307.81	3.992E+01	Analog	0.30	3
Co	59	45	2	12.721	ppb	0.22	158,552.59	1.759E+00	Pulse	0.30	3
Ni	60	72	2	62.851	ppb	1.34	202,293.61	3.366E+00	Pulse	0.30	3
Cu	63	72	2	6.085	ppb	0.48	56,011.64	9.320E-01	Pulse	0.30	3
Zn	66	72	2	37.993	ppb	0.29	52,431.66	8.724E-01	Pulse	0.30	3
As	75	72	2	0.192	ppb	11.15	142.18	2.366E-03	Pulse	0.75	3
Se	78	72	1	0.302	ppb	10.90	102.23	1.434E-03	Pulse	0.30	3
Mo	95	103	2	10.159	ppb	2.08	42,014.96	2.357E-02	Pulse	0.30	3
Ag	107	103	3	0.012	ppb	5.89	698.27	1.889E-04	Pulse	0.30	3
Cd	111	115	3	0.096	ppb	19.62	854.28	2.107E-04	Pulse	0.30	3
Sb	121	115	3	0.150	ppb	1.64	4,009.58	9.885E-04	Pulse	0.30	3
Ba	137	159	3	3.454	ppb	0.32	33,193.82	5.133E-03	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	6.30	1,572.38	3.639E-04	Pulse	0.30	3
Pb	208	209	3	1.070	ppb	0.27	113,899.39	2.636E-02	Pulse	0.30	3
U	238	209	3	0.023	ppb	6.27	2,881.39	6.670E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,670,183.55	0.24	98.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	90,117.32	1.64	99.5	Pulse	0.30	3
3	Sc	45	2,354,406.77	0.15	98.8	Analog	0.30	3
1	Ge	72	71,326.43	0.63	101.9	Pulse	0.30	3
2	Ge	72	60,099.22	0.68	99.1	Pulse	0.30	3
2	Rh	103	1,782,527.75	0.61	97.5	Analog	0.30	3
3	Rh	103	3,696,953.21	0.95	99.7	Analog	0.30	3
3	In	115	4,056,069.58	0.54	101.5	Analog	0.30	3
3	Tb	159	6,466,797.89	0.36	101.2	Analog	0.30	3
3	Bi	209	4,320,309.34	0.20	101.2	Analog	0.30	3

Quantitation Report

File Name	A0516021.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 08:50
Sample Name	N019712-001C,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.010	ppb	36.56	121.11	7.040E-05	Pulse	0.30	3
B	11	6	3	4.603	ppb	13.00	95,104.14	5.523E-02	Pulse	0.30	3
Na	23	45	2	883.925	ppb	1.69	1,230,926.02	1.328E+01	Analog	0.30	3
Mg	26	45	2	133.027	ppb	1.94	16,150.54	1.741E-01	Pulse	0.30	3
Al	27	45	2	167.847	ppb	0.22	41,421.39	4.467E-01	Pulse	0.30	3
K	39	45	2	97.276	ppb	3.64	52,319.82	5.645E-01	Pulse	0.30	3
Ca	44	45	3	504.901	ppb	0.17	598,677.30	2.474E-01	Pulse	0.30	3
V	51	45	2	0.892	ppb	0.88	5,583.40	6.022E-02	Pulse	0.30	3
Cr	52	45	2	0.653	ppb	2.78	5,218.65	5.629E-02	Pulse	0.30	3
Mn	55	45	2	6.706	ppb	2.75	25,366.14	2.737E-01	Pulse	0.30	3
Fe	56	45	2	317.189	ppb	1.36	1,944,977.90	2.098E+01	Analog	0.30	3
Co	59	45	2	0.271	ppb	1.90	3,517.27	3.793E-02	Pulse	0.30	3
Ni	60	72	2	1.550	ppb	1.83	5,247.92	8.530E-02	Pulse	0.30	3
Cu	63	72	2	4.774	ppb	1.38	45,168.95	7.341E-01	Pulse	0.30	3
Zn	66	72	2	40.870	ppb	1.16	57,682.95	9.375E-01	Pulse	0.30	3
As	75	72	2	0.102	ppb	25.03	83.06	1.353E-03	Pulse	0.75	3
Se	78	72	1	0.019	ppb	1.77	6.67	9.143E-05	Pulse	0.30	3
Mo	95	103	2	0.370	ppb	5.43	1,609.05	8.717E-04	Pulse	0.30	3
Ag	107	103	3	0.008	ppb	12.39	579.99	1.524E-04	Pulse	0.30	3
Cd	111	115	3	0.184	ppb	4.79	1,568.80	3.768E-04	Pulse	0.30	3
Sb	121	115	3	0.233	ppb	3.06	6,277.09	1.508E-03	Pulse	0.30	3
Ba	137	159	3	4.930	ppb	0.55	48,239.89	7.324E-03	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	9.61	1,785.74	4.060E-04	Pulse	0.30	3
Pb	208	209	3	1.471	ppb	0.60	158,831.04	3.610E-02	Pulse	0.30	3
U	238	209	3	0.021	ppb	4.74	2,718.23	6.180E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,721,640.60	0.34	101.1	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	92,723.49	2.62	102.3	Pulse	0.30	3
3	Sc	45	2,419,894.70	0.44	101.5	Analog	0.30	3
1	Ge	72	72,964.90	1.78	104.3	Pulse	0.30	3
2	Ge	72	61,538.17	2.06	101.5	Pulse	0.30	3
2	Rh	103	1,845,122.78	1.36	100.9	Analog	0.30	3
3	Rh	103	3,805,998.24	0.17	102.7	Analog	0.30	3
3	In	115	4,162,769.29	0.70	104.2	Analog	0.30	3
3	Tb	159	6,586,304.35	0.39	103.0	Analog	0.30	3
3	Bi	209	4,399,523.69	1.00	103.1	Analog	0.30	3

Quantitation Report

File Name	A0516022.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 08:55
Sample Name	N019713-001C,SAMP,2
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	19.66	65.56	3.801E-05	Pulse	0.30	3
B	11	6	3	6.659	ppb	1.10	115,419.55	6.694E-02	Pulse	0.30	3
Na	23	45	2	3461.150	ppb	0.48	4,798,408.64	5.080E+01	Analog	0.30	3
Mg	26	45	2	261.846	ppb	1.09	32,261.76	3.416E-01	Pulse	0.30	3
Al	27	45	2	115.436	ppb	1.13	29,114.23	3.082E-01	Pulse	0.30	3
K	39	45	2	283.448	ppb	0.85	126,875.88	1.343E+00	Pulse	0.30	3
Ca	44	45	3	1073.820	ppb	0.75	1,273,970.61	5.219E-01	Analog	0.30	3
V	51	45	2	1.467	ppb	2.97	8,695.98	9.208E-02	Pulse	0.30	3
Cr	52	45	2	0.991	ppb	2.04	7,696.09	8.147E-02	Pulse	0.30	3
Mn	55	45	2	9.817	ppb	0.81	37,802.39	4.002E-01	Pulse	0.30	3
Fe	56	45	2	348.728	ppb	0.59	2,178,588.02	2.307E+01	Analog	0.30	3
Co	59	45	2	0.420	ppb	3.04	5,522.18	5.846E-02	Pulse	0.30	3
Ni	60	72	2	2.703	ppb	0.90	9,253.26	1.470E-01	Pulse	0.30	3
Cu	63	72	2	5.667	ppb	1.21	54,707.35	8.690E-01	Pulse	0.30	3
Zn	66	72	2	52.515	ppb	1.42	75,600.33	1.201E+00	Pulse	0.30	3
As	75	72	2	0.208	ppb	21.61	160.35	2.546E-03	Pulse	0.75	3
Se	78	72	1	0.108	ppb	44.58	37.78	5.119E-04	Pulse	0.30	3
Mo	95	103	2	0.503	ppb	4.94	2,203.58	1.181E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	172.56	4.523E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-266.01	-6.327E-05	Pulse	0.30	3
Sb	121	115	3	0.198	ppb	1.20	5,418.96	1.288E-03	Pulse	0.30	3
Ba	137	159	3	5.980	ppb	0.72	59,018.37	8.882E-03	Pulse	0.30	3
Tl	205	209	3	0.011	ppb	10.03	1,634.61	3.786E-04	Pulse	0.30	3
Pb	208	209	3	1.144	ppb	0.75	121,545.18	2.815E-02	Pulse	0.30	3
U	238	209	3	0.019	ppb	2.46	2,426.39	5.619E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,724,263.68	0.40	101.2	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	94,455.01	0.82	104.2	Pulse	0.30	3
3	Sc	45	2,440,955.14	0.67	102.4	Analog	0.30	3
1	Ge	72	74,013.72	1.05	105.8	Pulse	0.30	3
2	Ge	72	62,962.03	2.26	103.8	Pulse	0.30	3
2	Rh	103	1,864,822.66	1.19	102.0	Analog	0.30	3
3	Rh	103	3,816,091.99	0.65	103.0	Analog	0.30	3
3	In	115	4,207,341.10	0.52	105.3	Analog	0.30	3
3	Tb	159	6,645,017.68	0.43	103.9	Analog	0.30	3
3	Bi	209	4,318,315.15	0.39	101.2	Analog	0.30	3

Quantitation Report

File Name	A0516023.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:01
Sample Name	N019714-002C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.007	ppb	46.82	84.45	4.920E-05	Pulse	0.30	3
B	11	6	3	69.403	ppb	0.15	728,172.38	4.242E-01	Pulse	0.30	3
Na	23	45	2	19148.152	ppb	1.30	25,763,081.56	2.792E+02	Analog	0.30	3
Mg	26	45	2	618.682	ppb	0.05	74,335.06	8.054E-01	Pulse	0.30	3
Al	27	45	2	142.744	ppb	1.74	35,100.17	3.804E-01	Pulse	0.30	3
K	39	45	2	772.644	ppb	0.87	312,815.05	3.390E+00	Pulse	0.30	3
Ca	44	45	3	2651.222	ppb	1.20	3,206,669.22	1.283E+00	Analog	0.30	3
V	51	45	2	1.070	ppb	1.81	6,467.11	7.009E-02	Pulse	0.30	3
Cr	52	45	2	0.681	ppb	3.14	5,390.01	5.838E-02	Pulse	0.30	3
Mn	55	45	2	18.743	ppb	0.54	70,432.92	7.631E-01	Pulse	0.30	3
Fe	56	45	2	279.312	ppb	1.63	1,705,010.41	1.848E+01	Analog	0.30	3
Co	59	45	2	0.408	ppb	1.37	5,247.81	5.684E-02	Pulse	0.30	3
Ni	60	72	2	3.409	ppb	1.55	11,415.42	1.848E-01	Pulse	0.30	3
Cu	63	72	2	24.706	ppb	0.85	231,215.95	3.742E+00	Pulse	0.30	3
Zn	66	72	2	369.792	ppb	1.00	517,565.02	8.377E+00	Pulse	0.30	3
As	75	72	2	0.301	ppb	6.79	222.00	3.590E-03	Pulse	0.75	3
Se	78	72	1	0.262	ppb	21.15	87.78	1.244E-03	Pulse	0.30	3
Mo	95	103	2	0.660	ppb	1.27	2,729.24	1.544E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-100.29	-2.702E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-4,372.25	-1.076E-03	Pulse	0.30	3
Sb	121	115	3	153.087	ppb	0.18	3,891,236.68	9.577E-01	Analog	0.30	3
Ba	137	159	3	28.547	ppb	0.61	274,164.22	4.238E-02	Pulse	0.30	3
Tl	205	209	3	0.023	ppb	3.72	2,344.73	5.912E-04	Pulse	0.30	3
Pb	208	209	3	2.087	ppb	0.73	202,540.01	5.108E-02	Pulse	0.30	3
U	238	209	3	0.039	ppb	4.80	4,363.38	1.100E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,716,528.74	0.28	100.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	92,301.11	2.97	101.9	Pulse	0.30	3
3	Sc	45	2,499,236.86	0.33	104.9	Analog	0.30	3
1	Ge	72	70,453.78	1.75	100.7	Pulse	0.30	3
2	Ge	72	61,796.72	2.29	101.9	Pulse	0.30	3
2	Rh	103	1,768,451.43	1.96	96.7	Analog	0.30	3
3	Rh	103	3,711,390.05	0.08	100.1	Analog	0.30	3
3	In	115	4,063,042.41	0.56	101.7	Analog	0.30	3
3	Tb	159	6,469,884.70	0.18	101.2	Analog	0.30	3
3	Bi	209	3,965,412.48	0.62	92.9	Analog	0.30	3

Quantitation Report

File Name	A0516024.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:06
Sample Name	N019714-003C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	45.37	64.45	3.580E-05	Pulse	0.30	3
B	11	6	3	73.706	ppb	0.60	806,874.61	4.487E-01	Pulse	0.30	3
Na	23	45	2	19729.754	ppb	0.97	27,723,456.25	2.877E+02	Analog	0.30	3
Mg	26	45	2	627.958	ppb	1.48	78,781.63	8.174E-01	Pulse	0.30	3
Al	27	45	2	92.971	ppb	2.17	23,986.74	2.489E-01	Pulse	0.30	3
K	39	45	2	789.803	ppb	0.94	333,596.94	3.461E+00	Pulse	0.30	3
Ca	44	45	3	2815.454	ppb	0.70	3,545,048.28	1.362E+00	Analog	0.30	3
V	51	45	2	1.026	ppb	4.12	6,517.15	6.765E-02	Pulse	0.30	3
Cr	52	45	2	0.498	ppb	6.75	4,316.24	4.477E-02	Pulse	0.30	3
Mn	55	45	2	19.042	ppb	0.61	74,715.88	7.753E-01	Pulse	0.30	3
Fe	56	45	2	185.602	ppb	0.31	1,183,659.82	1.228E+01	Mix	0.30	3
Co	59	45	2	0.436	ppb	2.26	5,847.71	6.067E-02	Pulse	0.30	3
Ni	60	72	2	4.243	ppb	0.49	14,643.78	2.294E-01	Pulse	0.30	3
Cu	63	72	2	57.162	ppb	0.86	551,528.46	8.640E+00	Pulse	0.30	3
Zn	66	72	2	751.814	ppb	0.69	1,086,331.83	1.702E+01	Pulse	0.30	3
As	75	72	2	0.355	ppb	6.92	268.66	4.206E-03	Pulse	0.75	3
Se	78	72	1	0.228	ppb	7.13	80.00	1.084E-03	Pulse	0.30	3
Mo	95	103	2	0.712	ppb	3.83	3,043.75	1.665E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-134.01	-3.437E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-4,748.81	-1.117E-03	Pulse	0.30	3
Sb	121	115	3	195.967	ppb	0.33	5,211,200.48	1.226E+00	Analog	0.30	3
Ba	137	159	3	24.630	ppb	0.36	247,854.40	3.656E-02	Pulse	0.30	3
Tl	205	209	3	0.023	ppb	6.79	2,391.41	5.831E-04	Pulse	0.30	3
Pb	208	209	3	2.438	ppb	0.25	244,497.77	5.962E-02	Pulse	0.30	3
U	238	209	3	0.035	ppb	1.35	4,144.77	1.011E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,798,197.33	0.77	105.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	96,369.11	1.29	106.4	Pulse	0.30	3
3	Sc	45	2,602,340.38	1.16	109.2	Analog	0.30	3
1	Ge	72	73,813.11	0.10	105.5	Pulse	0.30	3
2	Ge	72	63,841.28	1.56	105.3	Pulse	0.30	3
2	Rh	103	1,828,829.33	1.70	100.0	Analog	0.30	3
3	Rh	103	3,893,798.07	1.03	105.1	Analog	0.30	3
3	In	115	4,250,611.22	0.87	106.4	Analog	0.30	3
3	Tb	159	6,779,089.21	0.59	106.0	Analog	0.30	3
3	Bi	209	4,100,944.24	0.34	96.1	Analog	0.30	3

Quantitation Report

File Name	A0516025.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:12
Sample Name	~~N019631-001B,SAMP,25~~ N019731-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	55.69	30.00	1.785E-05	Pulse	0.30	3
B	11	6	3	6.250	ppb	1.58	108,529.71	6.461E-02	Pulse	0.30	3
Na	23	45	2	1641.847	ppb	0.99	2,273,264.31	2.431E+01	Analog	0.30	3
Mg	26	45	2	356.250	ppb	0.45	43,409.86	4.643E-01	Pulse	0.30	3
Al	27	45	2	25.965	ppb	5.33	6,721.73	7.187E-02	Pulse	0.30	3
K	39	45	2	220.024	ppb	1.46	100,790.38	1.078E+00	Pulse	0.30	3
Ca	44	45	3	1250.076	ppb	1.21	1,448,296.06	6.070E-01	Analog	0.30	3
V	51	45	2	0.210	ppb	10.33	2,098.01	2.244E-02	Pulse	0.30	3
Cr	52	45	2	0.253	ppb	13.82	2,474.85	2.649E-02	Pulse	0.30	3
Mn	55	45	2	5.158	ppb	2.37	19,703.55	2.108E-01	Pulse	0.30	3
Fe	56	45	2	53.538	ppb	0.56	332,162.02	3.552E+00	Pulse	0.30	3
Co	59	45	2	0.098	ppb	6.26	1,314.40	1.406E-02	Pulse	0.30	3
Ni	60	72	2	1.024	ppb	6.17	3,533.71	5.710E-02	Pulse	0.30	3
Cu	63	72	2	4.332	ppb	0.79	41,302.94	6.675E-01	Pulse	0.30	3
Zn	66	72	2	77.332	ppb	0.58	109,038.17	1.762E+00	Pulse	0.30	3
As	75	72	2	0.048	ppb	28.94	46.09	7.448E-04	Pulse	0.75	3
Se	78	72	1	0.058	ppb	58.51	20.00	2.749E-04	Pulse	0.30	3
Mo	95	103	2	0.612	ppb	2.85	2,643.67	1.434E-03	Pulse	0.30	3
Ag	107	103	3	0.001	ppb	109.48	340.87	9.091E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-42.40	-1.037E-05	Pulse	0.30	3
Sb	121	115	3	1.327	ppb	1.47	34,121.31	8.348E-03	Pulse	0.30	3
Ba	137	159	3	3.152	ppb	2.07	30,459.28	4.685E-03	Pulse	0.30	3
Tl	205	209	3	0.001	ppb	82.34	877.85	2.024E-04	Pulse	0.30	3
Pb	208	209	3	2.453	ppb	0.60	260,208.23	5.998E-02	Pulse	0.30	3
U	238	209	3	0.037	ppb	2.29	4,557.04	1.050E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,679,798.16	0.23	98.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	93,505.24	1.36	103.2	Pulse	0.30	3
3	Sc	45	2,386,105.97	0.41	100.1	Analog	0.30	3
1	Ge	72	72,299.41	1.64	103.3	Pulse	0.30	3
2	Ge	72	61,878.16	0.24	102.1	Pulse	0.30	3
2	Rh	103	1,843,372.94	0.37	100.8	Analog	0.30	3
3	Rh	103	3,749,457.69	0.25	101.2	Analog	0.30	3
3	In	115	4,087,743.67	0.71	102.3	Analog	0.30	3
3	Tb	159	6,502,090.80	0.45	101.7	Analog	0.30	3
3	Bi	209	4,338,064.66	0.59	101.7	Analog	0.30	3

Quantitation Report

File Name	A0516026.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:18
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.603	ppb	0.56	222,090.40	1.171E-01	Pulse	0.30	3
B	11	6	3	197.807	ppb	0.75	2,191,026.28	1.155E+00	Analog	0.30	3
Na	23	45	2	217.631	ppb	0.51	367,986.76	3.578E+00	Pulse	0.30	3
Mg	26	45	2	208.991	ppb	2.27	28,056.38	2.729E-01	Pulse	0.30	3
Al	27	45	2	21.453	ppb	0.31	6,165.29	5.995E-02	Pulse	0.30	3
K	39	45	2	201.552	ppb	1.44	102,894.94	1.001E+00	Pulse	0.30	3
Ca	44	45	3	226.446	ppb	0.77	299,635.49	1.130E-01	Pulse	0.30	3
V	51	45	2	20.379	ppb	0.52	117,203.08	1.140E+00	Pulse	0.30	3
Cr	52	45	2	20.291	ppb	0.76	156,136.46	1.518E+00	Pulse	0.30	3
Mn	55	45	2	20.564	ppb	1.21	86,077.43	8.372E-01	Pulse	0.30	3
Fe	56	45	2	21.127	ppb	0.79	144,968.37	1.410E+00	Pulse	0.30	3
Co	59	45	2	20.292	ppb	0.70	288,569.85	2.806E+00	Pulse	0.30	3
Ni	60	72	2	20.044	ppb	0.56	74,153.06	1.075E+00	Pulse	0.30	3
Cu	63	72	2	20.054	ppb	0.33	209,692.67	3.040E+00	Pulse	0.30	3
Zn	66	72	2	20.232	ppb	1.30	32,472.64	4.707E-01	Pulse	0.30	3
As	75	72	2	20.014	ppb	0.37	15,587.53	2.260E-01	Pulse	0.75	3
Se	78	72	1	20.436	ppb	0.76	7,868.91	9.709E-02	Pulse	0.30	3
Mo	95	103	2	19.726	ppb	0.80	94,483.10	4.575E-02	Pulse	0.30	3
Ag	107	103	3	19.889	ppb	0.90	718,455.98	1.710E-01	Pulse	0.30	3
Cd	111	115	3	20.079	ppb	1.09	174,292.83	3.769E-02	Pulse	0.30	3
Sb	121	115	3	20.161	ppb	0.80	583,521.49	1.262E-01	Pulse	0.30	3
Ba	137	159	3	20.502	ppb	0.77	224,356.77	3.043E-02	Pulse	0.30	3
Tl	205	209	3	20.188	ppb	0.53	1,785,980.36	3.586E-01	Analog	0.30	3
Pb	208	209	3	20.368	ppb	0.41	2,468,392.03	4.956E-01	Pulse	0.30	3
U	238	209	3	19.953	ppb	0.66	2,737,505.00	5.497E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,896,449.28	0.73	111.3	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	102,832.32	1.32	113.5	Pulse	0.30	3
3	Sc	45	2,651,020.29	1.36	111.2	Analog	0.30	3
1	Ge	72	81,046.85	0.42	115.8	Pulse	0.30	3
2	Ge	72	68,979.51	1.01	113.8	Pulse	0.30	3
2	Rh	103	2,065,117.21	0.97	113.0	Analog	0.30	3
3	Rh	103	4,202,228.41	1.07	113.4	Analog	0.30	3
3	In	115	4,625,144.96	1.48	115.8	Analog	0.30	3
3	Tb	159	7,372,052.87	0.81	115.3	Analog	0.30	3
3	Bi	209	4,980,545.62	1.14	116.7	Analog	0.30	3

Quantitation Report

File Name	A0516027.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:23
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	101.17	26.67	1.638E-05	Pulse	0.30	3
B	11	6	3	12.688	ppb	2.69	164,164.84	1.013E-01	Pulse	0.30	3
Na	23	45	2	1.500	ppb	84.34	35,619.93	4.317E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	86.67	1.051E-03	Pulse	0.30	3
Al	27	45	2	2.854	ppb	13.91	893.39	1.082E-02	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	12,223.88	1.481E-01	Pulse	0.30	3
Ca	44	45	3	4.034	ppb	3.97	12,716.49	5.712E-03	Pulse	0.30	3
V	51	45	2	0.017	ppb	159.63	970.08	1.177E-02	Pulse	0.30	3
Cr	52	45	2	0.030	ppb	27.72	813.35	9.853E-03	Pulse	0.30	3
Mn	55	45	2	0.035	ppb	34.09	203.25	2.467E-03	Pulse	0.30	3
Fe	56	45	2	0.266	ppb	19.84	2,548.12	3.086E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	19.95	2.417E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	107.72	2.026E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	689.76	1.293E-02	Pulse	0.30	3
Zn	66	72	2	0.045	ppb	48.84	755.36	1.417E-02	Pulse	0.30	3
As	75	72	2	0.003	ppb	217.48	12.44	2.343E-04	Pulse	0.75	3
Se	78	72	1	0.008	ppb	173.21	2.22	3.722E-05	Pulse	0.30	3
Mo	95	103	2	0.013	ppb	52.36	74.45	4.452E-05	Pulse	0.30	3
Ag	107	103	3	0.010	ppb	32.23	602.00	1.695E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	78.14	2.018E-05	Pulse	0.30	3
Sb	121	115	3	0.010	ppb	10.25	433.36	1.118E-04	Pulse	0.30	3
Ba	137	159	3	0.017	ppb	7.89	196.85	3.157E-05	Pulse	0.30	3
Tl	205	209	3	0.046	ppb	5.06	4,240.79	9.955E-04	Pulse	0.30	3
Pb	208	209	3	0.002	ppb	26.79	1,655.42	3.885E-04	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	<0.000	ppb	---	111.37	2.613E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,621,321.16	1.39	95.2	Analog	0.30	3
2	Sc	45	82,537.86	1.55	91.1	Pulse	0.30	3
3	Sc	45	2,226,426.13	0.42	93.4	Analog	0.30	3
1	Ge	72	58,318.49	2.18	83.3	Pulse	0.30	3
2	Ge	72	53,314.95	1.96	87.9	Pulse	0.30	3
2	Rh	103	1,672,043.08	0.87	91.5	Analog	0.30	3
3	Rh	103	3,552,408.87	0.40	95.8	Analog	0.30	3
3	In	115	3,874,980.44	0.76	97.0	Analog	0.30	3
3	Tb	159	6,233,893.17	0.80	97.5	Analog	0.30	3
3	Bi	209	4,260,268.65	0.43	99.8	Analog	0.30	3

Quantitation Report

File Name A0516028.D
File Path C:\ICPMH\1\DATA\160516A.B
Method File DEFAULT.M
Method Path C:\ICPMH\1\METHODS\
Acq Time 05/16/2016 09:28
Sample Name ~~N019632-001B,SAMP,25~~ N019732-001C,SAMP,25
Sample Type Sample
Comment
Prep Dilution 1.000
Auto Dilution N/A
Total Dilution 1.000
Operator Name
Acq Mode Spectrum
Cal Title
Cal Type External Calibration
Last Calib 05/16/2016 08:39
Bkg File
Bkg Mode Count Subtraction except for ISTD
Interference File Acq. Defined
FQ Blank File
VIS Fit Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	24.09	22.22	1.392E-05	Pulse	0.30	3
B	11	6	3	7.532	ppb	2.72	114,852.29	7.191E-02	Pulse	0.30	3
Na	23	45	2	359.321	ppb	0.32	467,017.41	5.641E+00	Pulse	0.30	3
Mg	26	45	2	67.208	ppb	3.33	7,331.93	8.859E-02	Pulse	0.30	3
Al	27	45	2	71.049	ppb	2.87	15,806.63	1.910E-01	Pulse	0.30	3
K	39	45	2	41.670	ppb	3.89	27,473.40	3.319E-01	Pulse	0.30	3
Ca	44	45	3	424.651	ppb	0.04	460,873.48	2.087E-01	Pulse	0.30	3
V	51	45	2	0.209	ppb	8.19	1,851.30	2.237E-02	Pulse	0.30	3
Cr	52	45	2	0.179	ppb	4.61	1,736.95	2.098E-02	Pulse	0.30	3
Mn	55	45	2	2.481	ppb	1.73	8,436.66	1.019E-01	Pulse	0.30	3
Fe	56	45	2	87.112	ppb	0.18	477,804.03	5.772E+00	Pulse	0.30	3
Co	59	45	2	0.062	ppb	6.96	751.12	9.069E-03	Pulse	0.30	3
Ni	60	72	2	0.243	ppb	9.65	849.02	1.535E-02	Pulse	0.30	3
Cu	63	72	2	1.793	ppb	1.76	15,730.56	2.843E-01	Pulse	0.30	3
Zn	66	72	2	10.612	ppb	4.12	14,005.60	2.532E-01	Pulse	0.30	3
As	75	72	2	0.039	ppb	8.19	35.53	6.423E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.034	ppb	19.06	158.90	9.281E-05	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	276.17	7.884E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	97.68	2.537E-05	Pulse	0.30	3
Sb	121	115	3	0.088	ppb	8.96	2,314.72	6.010E-04	Pulse	0.30	3
Ba	137	159	3	1.842	ppb	1.87	17,059.62	2.741E-03	Pulse	0.30	3
Tl	205	209	3	0.030	ppb	6.29	3,011.55	7.163E-04	Pulse	0.30	3
Pb	208	209	3	0.713	ppb	0.59	74,335.80	1.768E-02	Pulse	0.30	3
U	238	209	3	0.007	ppb	8.39	922.08	2.193E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,597,148.52	0.85	93.8	Analog	0.30	3
2	Sc	45	82,783.81	1.10	91.4	Pulse	0.30	3
3	Sc	45	2,208,570.78	0.11	92.7	Analog	0.30	3
1	Ge	72	63,690.67	0.93	91.0	Pulse	0.30	3
2	Ge	72	55,321.25	0.16	91.2	Pulse	0.30	3
2	Rh	103	1,710,988.36	0.87	93.6	Analog	0.30	3
3	Rh	103	3,501,508.70	0.44	94.5	Analog	0.30	3
3	In	115	3,852,436.43	0.49	96.4	Analog	0.30	3
3	Tb	159	6,223,032.06	0.65	97.3	Analog	0.30	3
3	Bi	209	4,204,759.87	0.40	98.5	Analog	0.30	3

Quantitation Report

File Name	A0516029.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:34
Sample Name	MB-58373,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	6.959E-06	Pulse	0.30	3
B	11	6	3	5.292	ppb	5.12	94,641.52	5.916E-02	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	32,968.94	3.938E-01	Pulse	0.30	3
Mg	26	45	2	0.174	ppb	172.93	122.23	1.463E-03	Pulse	0.30	3
Al	27	45	2	1.794	ppb	5.25	671.14	8.017E-03	Pulse	0.30	3
K	39	45	2	0.276	ppb	506.29	13,286.94	1.587E-01	Pulse	0.30	3
Ca	44	45	3	3.198	ppb	5.20	11,694.58	5.308E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	868.95	1.038E-02	Pulse	0.30	3
Cr	52	45	2	0.030	ppb	24.76	827.80	9.889E-03	Pulse	0.30	3
Mn	55	45	2	0.000	ppb	2135.09	89.82	1.074E-03	Pulse	0.30	3
Fe	56	45	2	0.067	ppb	11.05	1,482.19	1.770E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	11.07	1.317E-04	Pulse	0.30	3
Ni	60	72	2	0.001	ppb	422.73	134.40	2.383E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	665.33	1.180E-02	Pulse	0.30	3
Zn	66	72	2	0.119	ppb	76.11	894.27	1.586E-02	Pulse	0.30	3
As	75	72	2	0.003	ppb	361.70	12.89	2.283E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	<0.000	ppb	---	15.55	9.000E-06	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	260.50	7.356E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	97.83	2.535E-05	Pulse	0.30	3
Sb	121	115	3	0.004	ppb	47.69	286.68	7.430E-05	Pulse	0.30	3
Ba	137	159	3	0.005	ppb	35.24	92.70	1.486E-05	Pulse	0.30	3
Tl	205	209	3	0.020	ppb	15.91	2,292.50	5.446E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,355.94	3.219E-04	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	<0.000	ppb	---	57.93	1.373E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,599,806.41	0.51	93.9	Analog	0.30	3
2	Sc	45	83,731.14	1.43	92.4	Pulse	0.30	3
3	Sc	45	2,203,249.14	0.54	92.5	Analog	0.30	3
1	Ge	72	64,787.19	0.24	92.6	Pulse	0.30	3
2	Ge	72	56,398.56	0.56	93.0	Pulse	0.30	3
2	Rh	103	1,714,717.80	1.60	93.8	Analog	0.30	3
3	Rh	103	3,540,497.90	0.25	95.5	Analog	0.30	3
3	In	115	3,859,582.74	0.30	96.6	Analog	0.30	3
3	Tb	159	6,237,741.78	0.65	97.6	Analog	0.30	3
3	Bi	209	4,212,306.47	1.05	98.7	Analog	0.30	3

Quantitation Report

File Name	A0516030.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:39
Sample Name	LCS-58373,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.238	ppb	0.82	95,953.17	6.117E-02	Pulse	0.30	3
B	11	6	3	1982.161	ppb	1.47	17,749,590.94	1.132E+01	Analog	0.30	3
Na	23	45	2	280.631	ppb	0.97	371,115.76	4.496E+00	Pulse	0.30	3
Mg	26	45	2	106.877	ppb	1.90	11,567.76	1.401E-01	Pulse	0.30	3
Al	27	45	2	206.717	ppb	1.05	45,353.09	5.494E-01	Pulse	0.30	3
K	39	45	2	105.705	ppb	2.64	49,501.95	5.998E-01	Pulse	0.30	3
Ca	44	45	3	139.313	ppb	0.36	157,734.60	7.099E-02	Pulse	0.30	3
V	51	45	2	10.672	ppb	0.59	49,698.86	6.020E-01	Pulse	0.30	3
Cr	52	45	2	10.686	ppb	1.89	66,302.19	8.033E-01	Pulse	0.30	3
Mn	55	45	2	105.964	ppb	0.68	355,743.04	4.309E+00	Pulse	0.30	3
Fe	56	45	2	107.075	ppb	0.88	585,389.54	7.091E+00	Pulse	0.30	3
Co	59	45	2	10.097	ppb	0.93	115,294.04	1.397E+00	Pulse	0.30	3
Ni	60	72	2	10.698	ppb	2.07	31,807.96	5.749E-01	Pulse	0.30	3
Cu	63	72	2	10.573	ppb	1.51	89,026.42	1.609E+00	Pulse	0.30	3
Zn	66	72	2	106.724	ppb	1.34	134,254.61	2.427E+00	Pulse	0.30	3
As	75	72	2	10.773	ppb	3.62	6,733.48	1.217E-01	Pulse	0.75	3
Se	78	72	1	10.390	ppb	4.92	3,140.45	4.936E-02	Pulse	0.30	3
Mo	95	103	2	10.125	ppb	0.77	39,766.99	2.349E-02	Pulse	0.30	3
Ag	107	103	3	10.555	ppb	2.18	322,459.32	9.077E-02	Pulse	0.30	3
Cd	111	115	3	10.761	ppb	1.10	78,609.21	2.021E-02	Pulse	0.30	3
Sb	121	115	3	10.633	ppb	0.71	258,903.10	6.656E-02	Pulse	0.30	3
Ba	137	159	3	106.929	ppb	0.04	1,003,612.44	1.587E-01	Pulse	0.30	3
Tl	205	209	3	10.914	ppb	1.15	833,862.41	1.940E-01	Pulse	0.30	3
Pb	208	209	3	10.624	ppb	0.71	1,112,131.05	2.587E-01	Pulse	0.30	3
U	238	209	3	10.120	ppb	1.08	1,198,530.42	2.788E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,568,656.15	0.40	92.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	82,559.28	2.07	91.1	Pulse	0.30	3
3	Sc	45	2,221,983.70	0.40	93.2	Analog	0.30	3
1	Ge	72	63,616.02	0.39	90.9	Pulse	0.30	3
2	Ge	72	55,325.87	1.65	91.2	Pulse	0.30	3
2	Rh	103	1,692,896.62	1.27	92.6	Analog	0.30	3
3	Rh	103	3,552,582.83	0.24	95.9	Analog	0.30	3
3	In	115	3,889,564.62	0.51	97.4	Analog	0.30	3
3	Tb	159	6,323,759.14	0.09	98.9	Analog	0.30	3
3	Bi	209	4,299,240.11	0.68	100.7	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

Uranium only

File Name	A0516031.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:45
Sample Name	N019654-008B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	295.42	15.55	9.995E-06	Pulse	0.30	3
B	11	6	3	147.780	ppb	0.50	1,355,752.46	8.705E-01	Analog	0.30	3
Na	23	45	2	31887.307	ppb	0.41	39,675,360.52	4.647E+02	Analog	0.30	3
Mg	26	45	2	6529.792	ppb	0.07	724,753.40	8.488E+00	Pulse	0.30	3
Al	27	45	2	1.271	ppb	10.72	566.65	6.635E-03	Pulse	0.30	3
K	39	45	2	1706.796	ppb	0.22	623,080.19	7.297E+00	Pulse	0.30	3
Ca	44	45	3	35522.791	ppb	0.67	39,644,663.02	1.714E+01	Analog	0.30	3
V	51	45	2	0.872	ppb	0.38	5,045.45	5.909E-02	Pulse	0.30	3
Cr	52	45	2	25.237	ppb	0.17	161,098.22	1.887E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-41.75	-4.804E-04	Pulse	0.30	3
Fe	56	45	2	5.431	ppb	19.55	31,759.90	3.723E-01	Pulse	0.30	3
Co	59	45	2	0.013	ppb	39.02	189.78	2.226E-03	Pulse	0.30	3
Ni	60	72	2	0.417	ppb	8.75	1,379.95	2.465E-02	Pulse	0.30	3
Cu	63	72	2	0.282	ppb	8.64	3,150.96	5.628E-02	Pulse	0.30	3
Zn	66	72	2	0.483	ppb	18.71	1,348.45	2.410E-02	Pulse	0.30	3
As	75	72	2	0.768	ppb	3.57	496.06	8.861E-03	Pulse	0.75	3
Se	78	72	1	0.071	ppb	30.73	21.11	3.356E-04	Pulse	0.30	3
Mo	95	103	2	0.512	ppb	3.61	1,946.87	1.200E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	271.04	8.054E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7,522.22	-1.970E-03	Pulse	0.30	3
Sb	121	115	3	0.041	ppb	13.24	1,176.77	3.082E-04	Pulse	0.30	3
Ba	137	159	3	13.324	ppb	0.61	123,855.17	1.978E-02	Pulse	0.30	3
Tl	205	209	3	0.204	ppb	4.78	15,238.46	3.806E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-14,756.87	-3.686E-03	Pulse	0.30	3
U	238	209	3	9.655	ppb	0.70	1,065,064.72	2.660E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,557,481.52	0.59	91.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	85,384.41	0.79	94.2	Pulse	0.30	3
3	Sc	45	2,312,350.33	0.16	97.0	Analog	0.30	3
1	Ge	72	62,562.97	2.68	89.4	Pulse	0.30	3
2	Ge	72	55,979.08	1.08	92.3	Pulse	0.30	3
2	Rh	103	1,621,709.61	0.95	88.7	Analog	0.30	3
3	Rh	103	3,360,604.43	0.56	90.7	Analog	0.30	3
3	In	115	3,818,703.74	1.16	95.6	Analog	0.30	3
3	Tb	159	6,260,918.17	0.70	97.9	Analog	0.30	3
3	Bi	209	4,004,086.68	0.62	93.8	Analog	0.30	3

Quantitation Report

File Name	A0516032.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:51
Sample Name	N019654-009B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	513.87	15.56	9.932E-06	Pulse	0.30	3
B	11	6	3	134.361	ppb	1.31	1,240,708.96	7.941E-01	Analog	0.30	3
Na	23	45	2	33162.313	ppb	1.06	40,659,583.01	4.832E+02	Analog	0.30	3
Mg	26	45	2	6813.359	ppb	1.11	745,223.63	8.857E+00	Pulse	0.30	3
Al	27	45	2	0.936	ppb	12.39	483.49	5.750E-03	Pulse	0.30	3
K	39	45	2	1770.387	ppb	0.89	636,416.45	7.563E+00	Pulse	0.30	3
Ca	44	45	3	36346.455	ppb	0.58	41,045,082.44	1.754E+01	Analog	0.30	3
V	51	45	2	0.913	ppb	3.35	5,163.27	6.137E-02	Pulse	0.30	3
Cr	52	45	2	26.447	ppb	0.61	166,344.95	1.977E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-229.28	-2.729E-03	Pulse	0.30	3
Fe	56	45	2	1.107	ppb	1.73	7,277.36	8.649E-02	Pulse	0.30	3
Co	59	45	2	0.012	ppb	45.21	177.25	2.104E-03	Pulse	0.30	3
Ni	60	72	2	0.507	ppb	3.54	1,635.87	2.944E-02	Pulse	0.30	3
Cu	63	72	2	0.268	ppb	5.76	3,013.70	5.424E-02	Pulse	0.30	3
Zn	66	72	2	2.698	ppb	3.38	4,121.82	7.418E-02	Pulse	0.30	3
As	75	72	2	0.703	ppb	8.75	452.00	8.133E-03	Pulse	0.75	3
Se	78	72	1	0.153	ppb	26.60	44.45	7.261E-04	Pulse	0.30	3
Mo	95	103	2	0.503	ppb	4.08	1,924.65	1.181E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-378.72	-1.116E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7,763.70	-2.018E-03	Pulse	0.30	3
Sb	121	115	3	0.030	ppb	11.45	897.84	2.335E-04	Pulse	0.30	3
Ba	137	159	3	13.586	ppb	0.92	128,196.09	2.017E-02	Pulse	0.30	3
Tl	205	209	3	0.078	ppb	1.43	6,312.73	1.565E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-13,678.52	-3.392E-03	Pulse	0.30	3
U	238	209	3	9.971	ppb	0.44	1,107,833.96	2.747E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,562,357.75	0.68	91.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	84,156.05	2.25	92.9	Pulse	0.30	3
3	Sc	45	2,339,834.74	0.87	98.2	Analog	0.30	3
1	Ge	72	61,252.40	0.62	87.5	Pulse	0.30	3
2	Ge	72	55,565.29	0.32	91.6	Pulse	0.30	3
2	Rh	103	1,629,834.75	1.62	89.1	Analog	0.30	3
3	Rh	103	3,392,617.73	0.26	91.5	Analog	0.30	3
3	In	115	3,846,339.64	0.64	96.3	Analog	0.30	3
3	Tb	159	6,355,963.79	0.77	99.4	Analog	0.30	3
3	Bi	209	4,032,772.79	0.25	94.5	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0516033.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 09:56
Sample Name	N019654-008B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	7.798E-06	Pulse	0.30	3
B	11	6	3	32.162	ppb	1.42	332,299.87	2.122E-01	Pulse	0.30	3
Na	23	45	2	6445.526	ppb	1.08	7,850,207.10	9.425E+01	Analog	0.30	3
Mg	26	45	2	1342.037	ppb	2.30	145,356.26	1.746E+00	Pulse	0.30	3
Al	27	45	2	1.378	ppb	23.05	575.56	6.918E-03	Pulse	0.30	3
K	39	45	2	341.819	ppb	1.06	132,224.63	1.587E+00	Pulse	0.30	3
Ca	44	45	3	7334.886	ppb	0.30	7,856,349.12	3.543E+00	Analog	0.30	3
V	51	45	2	0.151	ppb	5.12	1,596.82	1.918E-02	Pulse	0.30	3
Cr	52	45	2	5.097	ppb	2.08	32,240.56	3.871E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	59.17	7.189E-04	Pulse	0.30	3
Fe	56	45	2	1.136	ppb	2.91	7,361.78	8.840E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	165.66	45.59	5.448E-04	Pulse	0.30	3
Ni	60	72	2	0.101	ppb	27.38	422.94	7.729E-03	Pulse	0.30	3
Cu	63	72	2	0.065	ppb	20.18	1,290.06	2.356E-02	Pulse	0.30	3
Zn	66	72	2	0.246	ppb	6.64	1,025.77	1.873E-02	Pulse	0.30	3
As	75	72	2	0.161	ppb	23.07	110.68	2.018E-03	Pulse	0.75	3
Se	78	72	1	0.062	ppb	86.95	18.89	2.937E-04	Pulse	0.30	3
Mo	95	103	2	0.109	ppb	6.18	444.47	2.660E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	118.98	3.401E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,421.62	-3.649E-04	Pulse	0.30	3
Sb	121	115	3	0.009	ppb	27.92	398.91	1.024E-04	Pulse	0.30	3
Ba	137	159	3	2.641	ppb	2.93	24,896.45	3.927E-03	Pulse	0.30	3
Tl	205	209	3	0.042	ppb	1.02	3,874.02	9.201E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,789.19	-4.249E-04	Pulse	0.30	3
U	238	209	3	1.844	ppb	0.77	214,059.31	5.084E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,566,336.13	0.39	92.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	83,305.11	2.42	91.9	Pulse	0.30	3
3	Sc	45	2,217,367.78	0.36	93.0	Analog	0.30	3
1	Ge	72	64,497.25	0.88	92.2	Pulse	0.30	3
2	Ge	72	54,785.06	0.91	90.4	Pulse	0.30	3
2	Rh	103	1,671,804.68	1.09	91.4	Analog	0.30	3
3	Rh	103	3,498,532.83	0.37	94.4	Analog	0.30	3
3	In	115	3,896,004.13	0.41	97.5	Analog	0.30	3
3	Tb	159	6,340,668.10	0.72	99.2	Analog	0.30	3
3	Bi	209	4,210,336.26	0.62	98.7	Analog	0.30	3

Quantitation Report

File Name A0516034.D
File Path C:\ICPMH\1\DATA\160516A.B
Method File DEFAULT.M
Method Path C:\ICPMH\1\METHODS\
Acq Time 05/16/2016 10:02
Sample Name N019654-008B-PS,PS,5
Sample Type Sample
Comment
Prep Dilution 1.000
Auto Dilution N/A
Total Dilution 1.000
Operator Name
Acq Mode Spectrum
Cal Title
Cal Type External Calibration
Last Calib 05/16/2016 08:39
Bkg File
Bkg Mode Count Subtraction except for ISTD
Interference File Acq. Defined
FQ Blank File
VIS Fit Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.018	ppb	1.09	18,653.06	1.207E-02	Pulse	0.30	3
B	11	6	3	510.227	ppb	0.68	4,536,262.59	2.934E+00	Analog	0.30	3
Na	23	45	2	33315.067	ppb	1.77	40,934,924.11	4.854E+02	Analog	0.30	3
Mg	26	45	2	6805.914	ppb	1.79	746,017.97	8.847E+00	Pulse	0.30	3
Al	27	45	2	40.397	ppb	2.66	9,274.14	1.100E-01	Pulse	0.30	3
K	39	45	2	1783.901	ppb	1.28	642,611.68	7.620E+00	Pulse	0.30	3
Ca	44	45	3	36789.854	ppb	0.78	40,657,686.06	1.776E+01	Analog	0.30	3
V	51	45	2	3.022	ppb	3.05	15,027.42	1.782E-01	Pulse	0.30	3
Cr	52	45	2	28.124	ppb	2.42	177,198.96	2.102E+00	Pulse	0.30	3
Mn	55	45	2	19.886	ppb	1.79	68,269.64	8.096E-01	Pulse	0.30	3
Fe	56	45	2	21.225	ppb	1.02	119,454.59	1.416E+00	Pulse	0.30	3
Co	59	45	2	1.901	ppb	2.80	22,205.99	2.633E-01	Pulse	0.30	3
Ni	60	72	2	2.501	ppb	2.39	7,478.32	1.362E-01	Pulse	0.30	3
Cu	63	72	2	2.312	ppb	2.03	19,920.64	3.627E-01	Pulse	0.30	3
Zn	66	72	2	19.036	ppb	1.01	24,372.15	4.437E-01	Pulse	0.30	3
As	75	72	2	2.879	ppb	1.32	1,794.78	3.267E-02	Pulse	0.75	3
Se	78	72	1	2.070	ppb	5.12	590.04	9.836E-03	Pulse	0.30	3
Mo	95	103	2	2.610	ppb	1.29	9,810.05	6.066E-03	Pulse	0.30	3
Ag	107	103	3	1.299	ppb	9.17	37,481.21	1.124E-02	Pulse	0.30	3
Cd	111	115	3	0.881	ppb	2.08	6,441.37	1.683E-03	Pulse	0.30	3
Sb	121	115	3	2.047	ppb	0.51	49,187.84	1.285E-02	Pulse	0.30	3
Ba	137	159	3	34.445	ppb	0.78	319,273.75	5.113E-02	Pulse	0.30	3
Tl	205	209	3	1.767	ppb	2.25	125,421.56	3.156E-02	Pulse	0.30	3
Pb	208	209	3	1.940	ppb	0.19	188,788.38	4.750E-02	Pulse	0.30	3
U	238	209	3	12.319	ppb	0.45	1,348,685.58	3.394E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,545,974.54	0.38	90.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	84,358.30	3.41	93.1	Pulse	0.30	3
3	Sc	45	2,289,837.31	0.73	96.1	Analog	0.30	3
1	Ge	72	59,988.73	0.22	85.7	Pulse	0.30	3
2	Ge	72	54,927.60	1.66	90.6	Pulse	0.30	3
2	Rh	103	1,617,064.05	1.75	88.4	Analog	0.30	3
3	Rh	103	3,334,477.55	0.35	90.0	Analog	0.30	3
3	In	115	3,826,835.02	0.62	95.8	Analog	0.30	3
3	Tb	159	6,244,769.14	1.00	97.7	Analog	0.30	3
3	Bi	209	3,974,265.91	0.85	93.1	Analog	0.30	3

Quantitation Report

File Name	A0516035.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 10:07
Sample Name	N019654-008B-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	1.922	ppb	0.80	17,600.81	1.149E-02	Pulse	0.30	3
B	11	6	3	504.221	ppb	0.55	4,442,077.94	2.900E+00	Analog	0.30	3
Na	23	45	2	31773.745	ppb	1.60	37,632,494.16	4.630E+02	Analog	0.30	3
Mg	26	45	2	6541.761	ppb	1.69	691,163.95	8.504E+00	Pulse	0.30	3
Al	27	45	2	38.257	ppb	1.69	8,482.46	1.043E-01	Pulse	0.30	3
K	39	45	2	1715.886	ppb	1.62	596,208.02	7.335E+00	Pulse	0.30	3
Ca	44	45	3	35255.644	ppb	1.03	38,724,625.81	1.702E+01	Analog	0.30	3
V	51	45	2	2.947	ppb	2.61	14,146.65	1.740E-01	Pulse	0.30	3
Cr	52	45	2	27.171	ppb	2.18	165,050.19	2.031E+00	Pulse	0.30	3
Mn	55	45	2	19.307	ppb	1.55	63,890.25	7.860E-01	Pulse	0.30	3
Fe	56	45	2	22.135	ppb	3.68	120,142.96	1.476E+00	Pulse	0.30	3
Co	59	45	2	1.858	ppb	1.70	20,914.43	2.573E-01	Pulse	0.30	3
Ni	60	72	2	2.486	ppb	0.62	7,296.94	1.354E-01	Pulse	0.30	3
Cu	63	72	2	2.142	ppb	2.53	18,159.91	3.370E-01	Pulse	0.30	3
Zn	66	72	2	18.969	ppb	2.67	23,822.38	4.422E-01	Pulse	0.30	3
As	75	72	2	2.736	ppb	7.85	1,671.38	3.106E-02	Pulse	0.75	3
Se	78	72	1	2.108	ppb	14.38	594.49	1.001E-02	Pulse	0.30	3
Mo	95	103	2	2.531	ppb	2.71	9,278.63	5.882E-03	Pulse	0.30	3
Ag	107	103	3	1.241	ppb	7.38	35,986.42	1.075E-02	Pulse	0.30	3
Cd	111	115	3	0.856	ppb	2.33	6,226.02	1.637E-03	Pulse	0.30	3
Sb	121	115	3	2.031	ppb	1.94	48,516.81	1.275E-02	Pulse	0.30	3
Ba	137	159	3	33.233	ppb	0.73	308,082.09	4.933E-02	Pulse	0.30	3
Tl	205	209	3	1.738	ppb	0.65	123,978.35	3.105E-02	Pulse	0.30	3
Pb	208	209	3	1.894	ppb	0.28	185,257.21	4.639E-02	Pulse	0.30	3
U	238	209	3	11.645	ppb	0.35	1,280,999.89	3.208E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,531,726.50	0.72	89.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	81,311.11	3.76	89.7	Pulse	0.30	3
3	Sc	45	2,276,042.00	1.74	95.5	Analog	0.30	3
1	Ge	72	59,429.18	1.54	84.9	Pulse	0.30	3
2	Ge	72	53,910.08	3.76	88.9	Pulse	0.30	3
2	Rh	103	1,577,171.09	2.11	86.3	Analog	0.30	3
3	Rh	103	3,347,863.49	0.73	90.3	Analog	0.30	3
3	In	115	3,804,243.64	0.37	95.2	Analog	0.30	3
3	Tb	159	6,245,399.56	0.44	97.7	Analog	0.30	3
3	Bi	209	3,993,120.88	1.01	93.6	Analog	0.30	3

Quantitation Report

File Name	A0516036.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 10:13
Sample Name	N019654-008B-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	1.939	ppb	0.61	17,723.11	1.159E-02	Pulse	0.30	3
B	11	6	3	508.653	ppb	0.85	4,472,460.56	2.925E+00	Analog	0.30	3
Na	23	45	2	31661.001	ppb	1.35	38,328,164.15	4.614E+02	Analog	0.30	3
Mg	26	45	2	6495.042	ppb	1.49	701,403.58	8.443E+00	Pulse	0.30	3
Al	27	45	2	40.107	ppb	1.23	9,077.37	1.092E-01	Pulse	0.30	3
K	39	45	2	1700.266	ppb	0.67	604,047.04	7.270E+00	Pulse	0.30	3
Ca	44	45	3	35339.310	ppb	0.65	38,977,776.92	1.706E+01	Analog	0.30	3
V	51	45	2	2.889	ppb	2.26	14,193.36	1.709E-01	Pulse	0.30	3
Cr	52	45	2	27.118	ppb	1.71	168,363.83	2.027E+00	Pulse	0.30	3
Mn	55	45	2	19.278	ppb	1.06	65,206.26	7.849E-01	Pulse	0.30	3
Fe	56	45	2	21.263	ppb	2.08	117,862.43	1.419E+00	Pulse	0.30	3
Co	59	45	2	1.870	ppb	1.24	21,516.05	2.590E-01	Pulse	0.30	3
Ni	60	72	2	2.392	ppb	1.44	7,077.34	1.304E-01	Pulse	0.30	3
Cu	63	72	2	2.157	ppb	0.90	18,422.34	3.393E-01	Pulse	0.30	3
Zn	66	72	2	19.112	ppb	0.84	24,185.33	4.454E-01	Pulse	0.30	3
As	75	72	2	2.680	ppb	2.86	1,651.79	3.043E-02	Pulse	0.75	3
Se	78	72	1	2.215	ppb	13.01	623.38	1.052E-02	Pulse	0.30	3
Mo	95	103	2	2.663	ppb	1.52	9,889.01	6.188E-03	Pulse	0.30	3
Ag	107	103	3	1.255	ppb	5.25	36,434.75	1.086E-02	Pulse	0.30	3
Cd	111	115	3	0.983	ppb	1.88	7,204.58	1.874E-03	Pulse	0.30	3
Sb	121	115	3	2.042	ppb	0.84	49,296.99	1.282E-02	Pulse	0.30	3
Ba	137	159	3	33.333	ppb	0.74	313,612.53	4.948E-02	Pulse	0.30	3
Tl	205	209	3	1.768	ppb	1.28	127,334.00	3.157E-02	Pulse	0.30	3
Pb	208	209	3	1.906	ppb	0.21	188,314.62	4.669E-02	Pulse	0.30	3
U	238	209	3	11.682	ppb	0.54	1,298,126.60	3.218E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,528,967.45	1.38	89.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	83,099.56	3.20	91.7	Pulse	0.30	3
3	Sc	45	2,285,336.72	1.09	95.9	Analog	0.30	3
1	Ge	72	59,234.08	0.32	84.7	Pulse	0.30	3
2	Ge	72	54,302.37	2.84	89.6	Pulse	0.30	3
2	Rh	103	1,597,917.87	0.75	87.4	Analog	0.30	3
3	Rh	103	3,353,194.70	0.55	90.5	Analog	0.30	3
3	In	115	3,845,121.70	0.20	96.2	Analog	0.30	3
3	Tb	159	6,338,747.41	0.88	99.1	Analog	0.30	3
3	Bi	209	4,033,698.48	0.36	94.5	Analog	0.30	3

Quantitation Report

NOT REPORTED
FOR CR CONFIRMATION ONLY

File Name	A0516037.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 10:18
Sample Name	N019590-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.589	ppb	173.62	3.33	3.527E-03	Pulse	0.30	3
B	11	6	3	38856.504	ppb	17.63	139,039.25	2.213E+02	Pulse	0.30	3
Na	23	45	2		ppb	---	34,950.25		Pulse	0.30	3
Mg	26	45	2		ppb	---	1.11		Pulse	0.30	3
Al	27	45	2		ppb	---	0.00		Pulse	0.30	3
K	39	45	2		ppb	---	7,812.16		Pulse	0.30	3
Ca	44	45	3	24071.837	ppb	48.17	5,419.02	1.162E+01	Pulse	0.30	3
V	51	45	2		ppb	---	34.45		Pulse	0.30	3
Cr	52	45	2		ppb	---	106.67		Pulse	0.30	3
Mn	55	45	2		ppb	---	33.34		Pulse	0.30	3
Fe	56	45	2		ppb	---	185.56		Pulse	0.30	3
Co	59	45	2		ppb	---	2.22		Pulse	0.30	3
Ni	60	72	2	101.635	ppb	27.63	38.86	5.442E+00	Pulse	0.30	3
Cu	63	72	2	256.563	ppb	76.35	225.57	3.873E+01	Pulse	0.30	3
Zn	66	72	2	3709.865	ppb	64.33	514.32	8.392E+01	Pulse	0.30	3
As	75	72	2	15.732	ppb	173.40	1.78	1.777E-01	Pulse	0.75	3
Se	78	72	1	23.399	ppb	173.21	2.22	1.112E-01	Pulse	0.30	3
Mo	95	103	2	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Ag	107	103	3	9.071	ppb	94.35	131.27	7.802E-02	Pulse	0.30	3
Cd	111	115	3	33.270	ppb	110.53	50.30	6.242E-02	Pulse	0.30	3
Sb	121	115	3	14.064	ppb	74.72	136.68	8.803E-02	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-0.31	-3.432E-01	Pulse	0.30	3
Tl	205	209	3	1.853	ppb	106.62	581.19	3.307E-02	Pulse	0.30	3
Pb	208	209	3	3.622	ppb	13.12	1,493.70	8.842E-02	Pulse	0.30	3
U	238	209	3	0.220	ppb	120.86	107.17	6.101E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	657.13	43.66	0.0	Pulse	0.30	3
2	Sc	45	0.00	---	0.0	Pulse	0.30	3
3	Sc	45	562.27	55.44	0.0	Pulse	0.30	3
1	Ge	72	63.34	77.53	0.1	Pulse	0.30	3
2	Ge	72	7.78	49.52	0.0	Pulse	0.30	3
2	Rh	103	216.68	13.41	0.0	Pulse	0.30	3
3	Rh	103	1,392.41	62.07	0.0	Pulse	0.30	3
3	In	115	1,450.12	67.15	0.0	Pulse	0.30	3
3	Tb	159	215.58	125.41	0.0	Pulse	0.30	3
3	Bi	209	17,502.39	41.03	0.4	Pulse	0.30	3

Quantitation Report

File Name	A0516038.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 10:24
Sample Name	CCV2,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.273	ppb	0.21	210,843.44	1.151E-01	Pulse	0.30	3
B	11	6	3	205.511	ppb	1.02	2,195,983.26	1.199E+00	Analog	0.30	3
Na	23	45	2	215.863	ppb	0.38	350,817.94	3.553E+00	Pulse	0.30	3
Mg	26	45	2	210.722	ppb	0.34	27,167.11	2.751E-01	Pulse	0.30	3
Al	27	45	2	21.404	ppb	1.74	5,907.49	5.982E-02	Pulse	0.30	3
K	39	45	2	198.133	ppb	0.35	97,405.18	9.864E-01	Pulse	0.30	3
Ca	44	45	3	334.101	ppb	1.62	423,946.35	1.650E-01	Pulse	0.30	3
V	51	45	2	20.277	ppb	0.98	111,990.22	1.134E+00	Pulse	0.30	3
Cr	52	45	2	20.332	ppb	0.45	150,249.16	1.522E+00	Pulse	0.30	3
Mn	55	45	2	20.692	ppb	0.40	83,179.23	8.423E-01	Pulse	0.30	3
Fe	56	45	2	22.586	ppb	8.93	148,793.58	1.506E+00	Pulse	0.30	3
Co	59	45	2	20.362	ppb	0.62	278,071.38	2.816E+00	Pulse	0.30	3
Ni	60	72	2	20.088	ppb	0.82	70,706.84	1.077E+00	Pulse	0.30	3
Cu	63	72	2	20.206	ppb	0.76	201,018.42	3.063E+00	Pulse	0.30	3
Zn	66	72	2	20.267	ppb	1.40	30,949.00	4.715E-01	Pulse	0.30	3
As	75	72	2	19.803	ppb	0.12	14,675.14	2.236E-01	Pulse	0.75	3
Se	78	72	1	19.934	ppb	1.02	7,336.41	9.470E-02	Pulse	0.30	3
Mo	95	103	2	19.673	ppb	1.08	92,074.67	4.563E-02	Pulse	0.30	3
Ag	107	103	3	19.660	ppb	0.58	701,873.60	1.690E-01	Pulse	0.30	3
Cd	111	115	3	20.227	ppb	0.47	175,123.99	3.796E-02	Pulse	0.30	3
Sb	121	115	3	20.049	ppb	0.52	578,788.95	1.255E-01	Pulse	0.30	3
Ba	137	159	3	20.258	ppb	0.89	226,391.80	3.007E-02	Pulse	0.30	3
Tl	205	209	3	20.146	ppb	0.23	1,832,946.60	3.578E-01	Analog	0.30	3
Pb	208	209	3	20.370	ppb	0.46	2,538,922.80	4.957E-01	Pulse	0.30	3
U	238	209	3	20.142	ppb	0.85	2,842,025.86	5.548E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,831,118.19	0.51	107.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	98,748.51	0.58	109.0	Pulse	0.30	3
3	Sc	45	2,569,592.90	0.54	107.8	Analog	0.30	3
1	Ge	72	77,469.69	0.61	110.7	Pulse	0.30	3
2	Ge	72	65,632.73	1.27	108.2	Pulse	0.30	3
2	Rh	103	2,017,795.51	0.80	110.4	Analog	0.30	3
3	Rh	103	4,153,224.97	0.44	112.1	Analog	0.30	3
3	In	115	4,612,934.51	0.55	115.5	Analog	0.30	3
3	Tb	159	7,528,462.04	0.94	117.8	Analog	0.30	3
3	Bi	209	5,122,112.98	0.47	120.0	Analog	0.30	3

Quantitation Report

File Name	A0516039.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 10:30
Sample Name	CCB2,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	295.47	17.78	1.141E-05	Pulse	0.30	3
B	11	6	3	8.686	ppb	1.55	122,635.00	7.848E-02	Pulse	0.30	3
Na	23	45	2	1.661	ppb	28.63	36,327.23	4.341E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	60.00	7.170E-04	Pulse	0.30	3
Al	27	45	2	2.565	ppb	14.26	842.27	1.005E-02	Pulse	0.30	3
K	39	45	2	0.413	ppb	305.50	13,329.16	1.593E-01	Pulse	0.30	3
Ca	44	45	3	4.400	ppb	7.98	12,834.42	5.888E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	645.60	7.720E-03	Pulse	0.30	3
Cr	52	45	2	0.001	ppb	136.86	648.89	7.753E-03	Pulse	0.30	3
Mn	55	45	2	0.004	ppb	74.43	103.32	1.234E-03	Pulse	0.30	3
Fe	56	45	2	0.314	ppb	7.60	2,852.21	3.408E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	34.39	4.118E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	118.83	2.113E-03	Pulse	0.30	3
Cu	63	72	2	0.005	ppb	122.22	818.60	1.453E-02	Pulse	0.30	3
Zn	66	72	2	0.161	ppb	33.78	947.59	1.681E-02	Pulse	0.30	3
As	75	72	2	0.004	ppb	268.42	13.33	2.373E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	99.70	3.33	5.049E-05	Pulse	0.30	3
Mo	95	103	2	0.025	ppb	36.02	124.45	7.119E-05	Pulse	0.30	3
Ag	107	103	3	0.033	ppb	13.28	1,314.24	3.697E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	69.29	1.781E-05	Pulse	0.30	3
Sb	121	115	3	0.027	ppb	15.06	845.62	2.173E-04	Pulse	0.30	3
Ba	137	159	3	0.021	ppb	29.10	235.72	3.742E-05	Pulse	0.30	3
Tl	205	209	3	0.039	ppb	6.44	3,768.42	8.788E-04	Pulse	0.30	3
Pb	208	209	3	0.001	ppb	210.58	1,508.67	3.518E-04	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.002	ppb	15.34	421.38	9.829E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,562,679.48	0.69	91.8	Analog	0.30	3
2	Sc	45	83,700.44	1.78	92.4	Pulse	0.30	3
3	Sc	45	2,179,760.66	0.32	91.5	Analog	0.30	3
1	Ge	72	65,486.66	1.22	93.6	Pulse	0.30	3
2	Ge	72	56,360.58	1.08	93.0	Pulse	0.30	3
2	Rh	103	1,743,618.67	1.34	95.4	Analog	0.30	3
3	Rh	103	3,556,340.71	0.48	96.0	Analog	0.30	3
3	In	115	3,891,839.78	0.23	97.4	Analog	0.30	3
3	Tb	159	6,302,331.29	0.25	98.6	Analog	0.30	3
3	Bi	209	4,287,942.61	0.46	100.5	Analog	0.30	3

Quantitation Report

File Name	A0516040.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 10:35
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.496	ppb	2.34	4,740.85	2.972E-03	Pulse	0.30	3
B	11	6	3	6.608	ppb	1.23	106,306.66	6.665E-02	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	32,444.18	3.826E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	45.56	5.355E-04	Pulse	0.30	3
Al	27	45	2	9.851	ppb	1.64	2,484.72	2.930E-02	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	13,279.13	1.566E-01	Pulse	0.30	3
Ca	44	45	3	0.457	ppb	17.86	8,836.08	3.985E-03	Pulse	0.30	3
V	51	45	2	1.011	ppb	5.05	5,663.43	6.679E-02	Pulse	0.30	3
Cr	52	45	2	1.105	ppb	1.82	7,626.51	8.994E-02	Pulse	0.30	3
Mn	55	45	2	0.555	ppb	4.54	2,002.44	2.362E-02	Pulse	0.30	3
Fe	56	45	2	10.639	ppb	0.86	60,764.75	7.166E-01	Pulse	0.30	3
Co	59	45	2	0.511	ppb	0.50	6,023.54	7.103E-02	Pulse	0.30	3
Ni	60	72	2	1.052	ppb	2.73	3,338.19	5.861E-02	Pulse	0.30	3
Cu	63	72	2	1.021	ppb	1.95	9,562.92	1.679E-01	Pulse	0.30	3
Zn	66	72	2	10.308	ppb	0.95	14,029.59	2.463E-01	Pulse	0.30	3
As	75	72	2	0.110	ppb	14.24	81.78	1.437E-03	Pulse	0.75	3
Se	78	72	1	0.543	ppb	19.05	172.23	2.579E-03	Pulse	0.30	3
Mo	95	103	2	0.503	ppb	4.12	2,071.34	1.179E-03	Pulse	0.30	3
Ag	107	103	3	0.278	ppb	9.10	8,932.74	2.468E-03	Pulse	0.30	3
Cd	111	115	3	0.525	ppb	5.51	4,040.81	1.015E-03	Pulse	0.30	3
Sb	121	115	3	0.529	ppb	5.02	13,367.30	3.357E-03	Pulse	0.30	3
Ba	137	159	3	1.052	ppb	1.75	10,050.58	1.569E-03	Pulse	0.30	3
Tl	205	209	3	0.456	ppb	1.43	35,926.79	8.276E-03	Pulse	0.30	3
Pb	208	209	3	1.071	ppb	0.48	114,533.37	2.638E-02	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.510	ppb	0.99	61,118.71	1.408E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,594,987.74	0.53	93.6	Analog	0.30	3
2	Sc	45	84,801.23	1.13	93.6	Pulse	0.30	3
3	Sc	45	2,217,269.39	0.73	93.0	Analog	0.30	3
1	Ge	72	66,845.39	0.75	95.5	Pulse	0.30	3
2	Ge	72	56,964.75	1.48	93.9	Pulse	0.30	3
2	Rh	103	1,756,369.38	0.23	96.1	Analog	0.30	3
3	Rh	103	3,619,099.67	0.58	97.6	Analog	0.30	3
3	In	115	3,981,654.67	0.37	99.7	Analog	0.30	3
3	Tb	159	6,406,277.33	0.14	100.2	Analog	0.30	3
3	Bi	209	4,341,051.29	0.40	101.7	Analog	0.30	3

Quantitation Report

File Name	A0516041.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 10:41
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	8.62	35.56	1.728E-05	Pulse	0.30	3
B	11	6	3	1.653	ppb	5.19	79,104.23	3.844E-02	Pulse	0.30	3
Na	23	45	2	98062.079	ppb	0.83	154,896,706.58	1.428E+03	Analog	0.30	3
Mg	26	45	2	99970.865	ppb	0.77	14,093,496.46	1.299E+02	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	276.80	2.526E-03	Pulse	0.30	3
K	39	45	2	103407.394	ppb	0.28	46,943,402.63	4.327E+02	Analog	0.30	3
Ca	44	45	3	92563.239	ppb	0.31	140,877,539.01	4.467E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	595.59	5.489E-03	Pulse	0.30	3
Cr	52	45	2	0.150	ppb	17.78	2,035.02	1.880E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-18,366.09	-1.693E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-7,047.50	-6.498E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-34.73	-3.147E-04	Pulse	0.30	3
Ni	60	72	2	0.134	ppb	22.69	626.51	9.514E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-5,698.34	-8.686E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-141.94	-2.117E-03	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	1.28	2.142E-05	Pulse	0.75	3
Se	78	72	1	0.020	ppb	89.30	6.66	9.654E-05	Pulse	0.30	3
Mo	95	103	2	0.026	ppb	27.22	135.56	7.459E-05	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-32,537.10	-8.126E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-255.42	-5.823E-05	Pulse	0.30	3
Sb	121	115	3	0.013	ppb	6.94	564.48	1.286E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-72,637.58	-1.044E-02	Pulse	0.30	3
Tl	205	209	3	0.030	ppb	4.69	2,777.05	7.221E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-89,199.69	-2.319E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-8,351.36	-2.171E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,057,793.09	1.10	120.8	Analog	0.30	3
2	Sc	45	108,482.21	3.13	119.7	Pulse	0.30	3
3	Sc	45	3,153,748.25	1.40	132.3	Analog	0.30	3
1	Ge	72	70,132.24	2.67	100.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	65,639.44	2.93	108.3	Pulse	0.30	3
2	Rh	103	1,813,970.65	1.29	99.2	Analog	0.30	3
3	Rh	103	4,003,936.33	1.36	108.0	Analog	0.30	3
3	In	115	4,387,648.67	1.46	109.8	Analog	0.30	3
3	Tb	159	6,956,662.95	0.94	108.8	Analog	0.30	3
3	Bi	209	3,846,243.45	1.10	90.1	Analog	0.30	3

Quantitation Report

File Name	A0516042.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 10:46
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.027	ppb	0.81	241,394.59	1.137E-01	Pulse	0.30	3
B	11	6	3	198.254	ppb	1.46	2,458,928.47	1.158E+00	Analog	0.30	3
Na	23	45	2	94895.462	ppb	0.96	153,902,999.93	1.382E+03	Analog	0.30	3
Mg	26	45	2	97371.424	ppb	1.13	14,093,114.10	1.266E+02	Analog	0.30	3
Al	27	45	2	24.635	ppb	1.09	7,613.91	6.836E-02	Pulse	0.30	3
K	39	45	2	100015.366	ppb	0.57	46,621,144.86	4.185E+02	Analog	0.30	3
Ca	44	45	3	90524.490	ppb	0.90	142,918,856.76	4.369E+01	Analog	0.30	3
V	51	45	2	20.264	ppb	0.58	126,224.98	1.133E+00	Pulse	0.30	3
Cr	52	45	2	19.307	ppb	1.74	160,912.56	1.445E+00	Pulse	0.30	3
Mn	55	45	2	20.574	ppb	1.17	93,274.88	8.375E-01	Pulse	0.30	3
Fe	56	45	2	18.392	ppb	2.80	136,825.47	1.229E+00	Pulse	0.30	3
Co	59	45	2	18.491	ppb	0.55	284,817.51	2.557E+00	Pulse	0.30	3
Ni	60	72	2	19.591	ppb	1.72	69,794.51	1.051E+00	Pulse	0.30	3
Cu	63	72	2	18.041	ppb	0.48	181,746.10	2.736E+00	Pulse	0.30	3
Zn	66	72	2	18.156	ppb	0.47	28,148.91	4.238E-01	Pulse	0.30	3
As	75	72	2	19.752	ppb	0.29	14,815.33	2.230E-01	Pulse	0.75	3
Se	78	72	1	17.976	ppb	2.90	6,222.61	8.540E-02	Pulse	0.30	3
Mo	95	103	2	22.479	ppb	1.85	96,215.34	5.214E-02	Pulse	0.30	3
Ag	107	103	3	18.071	ppb	0.51	638,416.32	1.553E-01	Pulse	0.30	3
Cd	111	115	3	18.628	ppb	0.27	157,485.31	3.496E-02	Pulse	0.30	3
Sb	121	115	3	20.034	ppb	0.08	564,735.80	1.254E-01	Pulse	0.30	3
Ba	137	159	3	18.659	ppb	0.30	194,842.81	2.770E-02	Pulse	0.30	3
Tl	205	209	3	21.585	ppb	0.38	1,491,125.97	3.834E-01	Analog	0.30	3
Pb	208	209	3	20.731	ppb	0.38	1,961,899.09	5.045E-01	Pulse	0.30	3
U	238	209	3	22.225	ppb	0.05	2,381,150.38	6.122E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,123,507.96	0.60	124.7	Analog	0.30	3
2	Sc	45	111,386.92	3.55	122.9	Pulse	0.30	3
3	Sc	45	3,271,538.08	1.29	137.3	Analog	0.30	3
1	Ge	72	72,856.39	2.62	104.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	66,427.43	2.79	109.6	Pulse	0.30	3
2	Rh	103	1,845,323.95	1.82	100.9	Analog	0.30	3
3	Rh	103	4,109,374.76	1.32	110.9	Analog	0.30	3
3	In	115	4,504,221.26	0.74	112.7	Analog	0.30	3
3	Tb	159	7,034,098.09	0.42	110.0	Analog	0.30	3
3	Bi	209	3,889,218.69	0.95	91.1	Analog	0.30	3

Quantitation Report

NOT REPORTED
FOR CR CONFIRMATION ONLY

File Name	A0516043.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 10:52
Sample Name	N019590-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	24.86	12.22	1.965E-05	Pulse	0.30	3
B	11	6	3	983.942	ppb	4.92	3,494,284.60	5.632E+00	Analog	0.30	3
Na	23	45	2	2862986.205	ppb	0.99	3,793,105,259.03	4.168E+04	Analog	0.30	3
Mg	26	45	2	2232.236	ppb	0.23	264,174.19	2.903E+00	Pulse	0.30	3
Al	27	45	2	27.982	ppb	0.10	7,026.54	7.720E-02	Pulse	0.30	3
K	39	45	2	35610.984	ppb	1.27	13,574,867.16	1.491E+02	Analog	0.30	3
Ca	44	45	3	596650.271	ppb	0.49	661,986,954.58	2.879E+02	Analog	0.30	3
V	51	45	2	15.552	ppb	0.85	79,401.85	8.723E-01	Pulse	0.30	3
Cr	52	45	2	2.723	ppb	2.45	19,137.46	2.104E-01	Pulse	0.30	3
Mn	55	45	2	4.191	ppb	0.38	15,604.97	1.715E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-299,381.46	-3.294E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-4,210.17	-4.628E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-1,478.38	-3.192E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-91,865.27	-1.979E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-15,071.51	-3.247E-01	Pulse	0.30	3
As	75	72	2	3.403	ppb	4.29	1,790.90	3.859E-02	Pulse	0.75	3
Se	78	72	1	4.530	ppb	8.63	1,082.31	2.152E-02	Pulse	0.30	3
Mo	95	103	2	41.117	ppb	0.76	109,914.88	9.535E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,930.80	-4.563E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,979.49	-8.028E-04	Pulse	0.30	3
Sb	121	115	3	0.758	ppb	3.22	11,810.51	4.790E-03	Pulse	0.30	3
Ba	137	159	3	50.700	ppb	1.13	289,671.05	7.525E-02	Pulse	0.30	3
Tl	205	209	3	0.077	ppb	3.17	2,893.76	1.541E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-44,103.77	-2.348E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-1,857.39	-9.893E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	620,892.00	2.12	36.5	Analog	0.30	3
2	Sc	45	91,012.14	4.37	100.4	Pulse	0.30	3
3	Sc	45	2,299,139.10	2.20	96.5	Analog	0.30	3
1	Ge	72	50,263.77	1.00	71.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	46,411.47	4.32	76.5	Pulse	0.30	3
2	Rh	103	1,152,840.34	3.78	63.1	Pulse	0.30	3
3	Rh	103	2,175,884.01	1.67	58.7	Analog	0.30	3
3	In	115	2,465,420.28	1.75	61.7	Analog	0.30	3
3	Tb	159	3,850,060.19	3.09	60.2	Analog	0.30	3
3	Bi	209	1,877,761.29	2.23	44.0	Analog	0.30	3

Quantitation Report

NOT REPORTED
FOR CR CONFIRMATION ONLY

File Name	A0516044.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:00
Sample Name	N019590-002A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	64.18	13.34	2.268E-05	Pulse	0.30	3
B	11	6	3	1027.568	ppb	3.32	3,411,082.98	5.880E+00	Analog	0.30	3
Na	23	45	2	2911608.335	ppb	1.14	3,400,787,718.21	4.239E+04	Analog	0.30	3
Mg	26	45	2	2443.549	ppb	1.59	254,844.65	3.177E+00	Pulse	0.30	3
Al	27	45	2	27.352	ppb	4.68	6,062.61	7.554E-02	Pulse	0.30	3
K	39	45	2	36413.118	ppb	0.80	12,232,248.57	1.525E+02	Analog	0.30	3
Ca	44	45	3	599633.689	ppb	0.89	674,079,452.18	2.893E+02	Analog	0.30	3
V	51	45	2	15.891	ppb	1.40	71,487.10	8.911E-01	Pulse	0.30	3
Cr	52	45	2	2.884	ppb	1.97	17,836.25	2.224E-01	Pulse	0.30	3
Mn	55	45	2	4.021	ppb	0.80	13,201.12	1.645E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-281,125.92	-3.504E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,931.96	-4.903E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-2,322.09	-5.496E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-83,570.78	-1.981E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-13,677.81	-3.242E-01	Pulse	0.30	3
As	75	72	2	3.731	ppb	1.85	1,783.82	4.229E-02	Pulse	0.75	3
Se	78	72	1	4.760	ppb	7.42	1,068.98	2.262E-02	Pulse	0.30	3
Mo	95	103	2	41.459	ppb	1.01	102,333.85	9.614E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-11,491.14	-5.144E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,029.86	-8.043E-04	Pulse	0.30	3
Sb	121	115	3	0.773	ppb	3.61	12,339.84	4.886E-03	Pulse	0.30	3
Ba	137	159	3	53.015	ppb	1.18	303,964.93	7.869E-02	Pulse	0.30	3
Tl	205	209	3	0.050	ppb	1.19	2,023.57	1.076E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-45,646.55	-2.426E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-2,132.20	-1.133E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	580,694.37	5.43	34.1	Analog	0.30	3
2	Sc	45	80,238.33	3.61	88.6	Pulse	0.30	3
3	Sc	45	2,329,534.01	1.75	97.8	Analog	0.30	3
1	Ge	72	47,314.11	3.24	67.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	42,192.22	3.54	69.6	Pulse	0.30	3
2	Rh	103	1,064,376.10	2.47	58.2	Pulse	0.30	3
3	Rh	103	2,233,858.02	2.35	60.3	Analog	0.30	3
3	In	115	2,523,951.24	2.62	63.2	Analog	0.30	3
3	Tb	159	3,862,548.45	1.87	60.4	Analog	0.30	3
3	Bi	209	1,881,344.80	2.41	44.1	Analog	0.30	3

Quantitation Report

File Name	A0516045.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:05
Sample Name	MB-58351,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

NOT REPORTED

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	170.52	22.22	1.042E-05	Pulse	0.30	3
B	11	6	3	6.605	ppb	1.87	142,263.58	6.663E-02	Pulse	0.30	3
Na	23	45	2	343.603	ppb	3.56	687,757.68	5.412E+00	Pulse	0.30	3
Mg	26	45	2	0.092	ppb	115.61	172.23	1.356E-03	Pulse	0.30	3
Al	27	45	2	1.813	ppb	15.91	1,024.50	8.067E-03	Pulse	0.30	3
K	39	45	2	14.117	ppb	13.27	27,525.79	2.166E-01	Pulse	0.30	3
Ca	44	45	3	22.443	ppb	5.04	49,833.47	1.459E-02	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	1,051.20	8.273E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	741.58	5.845E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	125.54	9.858E-04	Pulse	0.30	3
Fe	56	45	2	0.086	ppb	18.66	2,408.77	1.896E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	28.13	2.214E-04	Pulse	0.30	3
Ni	60	72	2	0.101	ppb	23.99	638.16	7.753E-03	Pulse	0.30	3
Cu	63	72	2	0.359	ppb	7.78	5,595.76	6.789E-02	Pulse	0.30	3
Zn	66	72	2	0.113	ppb	4.08	1,296.48	1.572E-02	Pulse	0.30	3
As	75	72	2	0.008	ppb	85.69	24.00	2.910E-04	Pulse	0.75	3
Se	78	72	1	0.017	ppb	24.61	7.78	7.877E-05	Pulse	0.30	3
Mo	95	103	2	0.039	ppb	22.22	258.90	1.055E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	152.78	3.007E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-4.34	-7.893E-07	Pulse	0.30	3
Sb	121	115	3	0.003	ppb	29.88	373.35	6.838E-05	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	33.02	4.026E-06	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	15.01	2,136.92	4.043E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,270.05	2.403E-04	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	73.35	1.387E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,135,016.18	0.75	125.4	Analog	0.30	3
2	Sc	45	127,107.88	1.64	140.3	Pulse	0.30	3
3	Sc	45	3,414,903.00	0.47	143.3	Analog	0.30	3
1	Ge	72	98,757.98	0.98	141.1	Pulse	0.30	3
2	Ge	72	82,474.16	1.77	136.0	Pulse	0.30	3
2	Rh	103	2,452,032.46	1.05	134.1	Analog	0.30	3
3	Rh	103	5,081,198.36	0.66	137.1	Analog	0.30	3
3	In	115	5,460,476.18	0.13	136.7	Analog	0.30	3
3	Tb	159	8,196,878.84	0.60	128.2	Analog	0.30	3
3	Bi	209	5,285,495.17	0.30	123.9	Analog	0.30	3

Quantitation Report

File Name	A0516046.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:11
Sample Name	LCS-58351,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.896	ppb	0.89	107,023.28	6.510E-02	Pulse	0.30	3
B	11	6	3	2089.038	ppb	0.26	19,603,865.33	1.192E+01	Analog	0.30	3
Na	23	45	2	396.102	ppb	1.43	625,846.99	6.177E+00	Pulse	0.30	3
Mg	26	45	2	103.619	ppb	3.15	13,769.49	1.359E-01	Pulse	0.30	3
Al	27	45	2	203.255	ppb	1.45	54,741.42	5.402E-01	Pulse	0.30	3
K	39	45	2	112.082	ppb	2.70	63,466.53	6.264E-01	Pulse	0.30	3
Ca	44	45	3	146.662	ppb	1.09	197,189.12	7.453E-02	Pulse	0.30	3
V	51	45	2	10.407	ppb	1.76	59,504.33	5.873E-01	Pulse	0.30	3
Cr	52	45	2	10.412	ppb	2.82	79,308.60	7.829E-01	Pulse	0.30	3
Mn	55	45	2	105.181	ppb	1.37	433,399.95	4.277E+00	Pulse	0.30	3
Fe	56	45	2	105.981	ppb	1.43	711,173.87	7.019E+00	Pulse	0.30	3
Co	59	45	2	10.027	ppb	0.99	140,529.55	1.387E+00	Pulse	0.30	3
Ni	60	72	2	10.802	ppb	0.58	39,183.23	5.804E-01	Pulse	0.30	3
Cu	63	72	2	10.630	ppb	1.17	109,211.56	1.618E+00	Pulse	0.30	3
Zn	66	72	2	105.908	ppb	1.31	162,577.59	2.408E+00	Pulse	0.30	3
As	75	72	2	10.555	ppb	2.33	8,051.83	1.193E-01	Pulse	0.75	3
Se	78	72	1	10.283	ppb	1.17	3,965.12	4.885E-02	Pulse	0.30	3
Mo	95	103	2	10.102	ppb	0.71	48,344.78	2.344E-02	Pulse	0.30	3
Ag	107	103	3	10.549	ppb	1.77	385,335.73	9.072E-02	Pulse	0.30	3
Cd	111	115	3	10.757	ppb	1.33	94,167.57	2.020E-02	Pulse	0.30	3
Sb	121	115	3	10.483	ppb	1.12	305,860.12	6.563E-02	Pulse	0.30	3
Ba	137	159	3	109.693	ppb	0.42	1,206,716.55	1.628E-01	Pulse	0.30	3
Tl	205	209	3	10.914	ppb	1.62	953,164.66	1.940E-01	Pulse	0.30	3
Pb	208	209	3	10.673	ppb	0.39	1,277,132.40	2.599E-01	Pulse	0.30	3
U	238	209	3	9.984	ppb	0.82	1,351,768.75	2.751E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,644,072.00	0.79	96.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	101,340.07	2.00	111.8	Pulse	0.30	3
3	Sc	45	2,645,549.32	0.33	111.0	Analog	0.30	3
1	Ge	72	81,161.63	1.61	116.0	Pulse	0.30	3
2	Ge	72	67,510.06	1.20	111.3	Pulse	0.30	3
2	Rh	103	2,062,632.16	0.79	112.8	Analog	0.30	3
3	Rh	103	4,247,615.14	0.31	114.6	Analog	0.30	3
3	In	115	4,660,889.47	0.76	116.7	Analog	0.30	3
3	Tb	159	7,412,092.67	0.90	115.9	Analog	0.30	3
3	Bi	209	4,914,682.11	0.57	115.2	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0516047.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:16
Sample Name	N019639-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.010	ppb	12.57	101.12	6.717E-05	Pulse	0.30	3
B	11	6	3	556.975	ppb	0.10	4,819,399.78	3.200E+00	Analog	0.30	3
Na	23	45	2	150767.713	ppb	0.56	208,057,459.12	2.195E+03	Analog	0.30	3
Mg	26	45	2	15744.690	ppb	0.56	1,939,387.49	2.046E+01	Analog	0.30	3
Al	27	45	2	18.134	ppb	0.28	4,850.91	5.119E-02	Pulse	0.30	3
K	39	45	2	3192.201	ppb	0.69	1,280,592.41	1.351E+01	Analog	0.30	3
Ca	44	45	3	81077.938	ppb	0.04	108,527,626.16	3.913E+01	Analog	0.30	3
V	51	45	2	5.546	ppb	1.01	30,138.29	3.180E-01	Pulse	0.30	3
Cr	52	45	2	3.252	ppb	2.15	23,671.54	2.498E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-1,154.37	-1.219E-02	Pulse	0.30	3
Fe	56	45	2	21.989	ppb	1.09	138,996.94	1.467E+00	Pulse	0.30	3
Co	59	45	2	0.025	ppb	21.60	371.21	3.928E-03	Pulse	0.30	3
Ni	60	72	2	0.489	ppb	5.08	1,690.67	2.849E-02	Pulse	0.30	3
Cu	63	72	2	0.758	ppb	5.03	7,606.71	1.282E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	229.93	3.866E-03	Pulse	0.30	3
As	75	72	2	1.506	ppb	10.16	1,020.01	1.719E-02	Pulse	0.75	3
Se	78	72	1	0.302	ppb	22.63	98.89	1.436E-03	Pulse	0.30	3
Mo	95	103	2	0.937	ppb	1.28	3,718.37	2.187E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,456.67	-4.050E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-283.36	-6.827E-05	Pulse	0.30	3
Sb	121	115	3	0.034	ppb	8.27	1,095.64	2.640E-04	Pulse	0.30	3
Ba	137	159	3	39.920	ppb	0.34	405,315.76	5.925E-02	Pulse	0.30	3
Tl	205	209	3	0.255	ppb	9.23	18,795.97	4.712E-03	Pulse	0.30	3
Pb	208	209	3	0.034	ppb	6.50	4,670.66	1.170E-03	Pulse	0.30	3
U	238	209	3	22.924	ppb	1.48	2,519,712.99	6.315E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,505,838.13	0.53	88.4	Analog	0.30	3
2	Sc	45	94,772.90	2.23	104.6	Pulse	0.30	3
3	Sc	45	2,773,735.93	0.15	116.4	Analog	0.30	3
1	Ge	72	68,896.46	2.15	98.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	59,368.68	1.26	97.9	Pulse	0.30	3
2	Rh	103	1,700,154.61	2.40	93.0	Analog	0.30	3
3	Rh	103	3,597,293.56	0.94	97.1	Analog	0.30	3
3	In	115	4,150,108.98	0.15	103.9	Analog	0.30	3
3	Tb	159	6,840,380.04	0.20	107.0	Analog	0.30	3
3	Bi	209	3,990,423.41	0.80	93.5	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0516048.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:22
Sample Name	N019639-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	280.62	18.89	1.301E-05	Pulse	0.30	3
B	11	6	3	126.604	ppb	0.56	1,093,177.14	7.499E-01	Analog	0.30	3
Na	23	45	2	32203.867	ppb	0.71	41,183,219.66	4.693E+02	Analog	0.30	3
Mg	26	45	2	3274.074	ppb	0.74	373,563.29	4.257E+00	Pulse	0.30	3
Al	27	45	2	7.657	ppb	4.91	2,064.10	2.351E-02	Pulse	0.30	3
K	39	45	2	670.214	ppb	0.67	259,877.18	2.961E+00	Pulse	0.30	3
Ca	44	45	3	18374.184	ppb	0.80	20,836,237.19	8.870E+00	Analog	0.30	3
V	51	45	2	1.140	ppb	0.56	6,493.78	7.398E-02	Pulse	0.30	3
Cr	52	45	2	0.686	ppb	3.47	5,153.65	5.874E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-10.35	-1.151E-04	Pulse	0.30	3
Fe	56	45	2	5.149	ppb	2.43	31,034.14	3.537E-01	Pulse	0.30	3
Co	59	45	2	0.004	ppb	42.87	88.48	1.008E-03	Pulse	0.30	3
Ni	60	72	2	0.153	ppb	8.27	613.64	1.051E-02	Pulse	0.30	3
Cu	63	72	2	0.352	ppb	3.63	3,913.56	6.697E-02	Pulse	0.30	3
Zn	66	72	2	0.098	ppb	68.66	897.43	1.537E-02	Pulse	0.30	3
As	75	72	2	0.341	ppb	3.70	236.22	4.044E-03	Pulse	0.75	3
Se	78	72	1	0.068	ppb	22.85	22.22	3.234E-04	Pulse	0.30	3
Mo	95	103	2	0.197	ppb	13.01	814.50	4.707E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	36.85	1.023E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7,674.11	-1.881E-03	Pulse	0.30	3
Sb	121	115	3	0.007	ppb	37.07	388.91	9.538E-05	Pulse	0.30	3
Ba	137	159	3	7.542	ppb	0.76	74,258.27	1.120E-02	Pulse	0.30	3
Tl	205	209	3	0.060	ppb	4.21	5,301.20	1.240E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-12,513.03	-2.927E-03	Pulse	0.30	3
U	238	209	3	4.370	ppb	0.55	514,709.74	1.204E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,457,770.47	0.60	85.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	87,768.50	1.98	96.9	Pulse	0.30	3
3	Sc	45	2,349,182.00	0.91	98.6	Analog	0.30	3
1	Ge	72	68,718.25	0.89	98.2	Pulse	0.30	3
2	Ge	72	58,466.51	3.70	96.4	Pulse	0.30	3
2	Rh	103	1,731,347.71	1.16	94.7	Analog	0.30	3
3	Rh	103	3,600,978.84	0.70	97.2	Analog	0.30	3
3	In	115	4,080,352.21	0.68	102.1	Analog	0.30	3
3	Tb	159	6,629,590.39	0.56	103.7	Analog	0.30	3
3	Bi	209	4,274,953.16	0.49	100.2	Analog	0.30	3

Quantitation Report

File Name	A0516049.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:27
Sample Name	N019639-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.816	ppb	0.73	90,973.98	5.865E-02	Pulse	0.30	3
B	11	6	3	2442.216	ppb	0.36	21,616,087.47	1.394E+01	Analog	0.30	3
Na	23	45	2	145472.389	ppb	1.34	204,250,252.51	2.118E+03	Analog	0.30	3
Mg	26	45	2	15051.329	ppb	2.21	1,886,763.20	1.956E+01	Analog	0.30	3
Al	27	45	2	207.435	ppb	0.88	53,168.47	5.513E-01	Pulse	0.30	3
K	39	45	2	3080.370	ppb	3.47	1,258,163.58	1.304E+01	Analog	0.30	3
Ca	44	45	3	78041.952	ppb	0.38	107,513,931.73	3.766E+01	Analog	0.30	3
V	51	45	2	15.012	ppb	1.26	81,219.00	8.424E-01	Pulse	0.30	3
Cr	52	45	2	12.376	ppb	0.88	89,581.56	9.291E-01	Pulse	0.30	3
Mn	55	45	2	91.561	ppb	1.21	359,007.47	3.724E+00	Pulse	0.30	3
Fe	56	45	2	116.416	ppb	1.53	743,161.94	7.709E+00	Pulse	0.30	3
Co	59	45	2	8.615	ppb	1.45	114,891.18	1.192E+00	Pulse	0.30	3
Ni	60	72	2	9.970	ppb	2.58	32,105.92	5.359E-01	Pulse	0.30	3
Cu	63	72	2	9.489	ppb	1.57	86,649.02	1.446E+00	Pulse	0.30	3
Zn	66	72	2	80.206	ppb	1.19	109,494.52	1.827E+00	Pulse	0.30	3
As	75	72	2	11.014	ppb	0.60	7,457.05	1.244E-01	Pulse	0.75	3
Se	78	72	1	8.976	ppb	8.39	2,857.06	4.264E-02	Pulse	0.30	3
Mo	95	103	2	11.808	ppb	4.30	46,421.46	2.739E-02	Pulse	0.30	3
Ag	107	103	3	0.076	ppb	6.00	2,693.22	7.332E-04	Pulse	0.30	3
Cd	111	115	3	8.909	ppb	0.21	70,792.44	1.674E-02	Pulse	0.30	3
Sb	121	115	3	9.641	ppb	0.40	255,282.57	6.036E-02	Pulse	0.30	3
Ba	137	159	3	138.316	ppb	0.73	1,431,025.31	2.053E-01	Analog	0.30	3
Tl	205	209	3	10.356	ppb	0.73	750,017.82	1.840E-01	Pulse	0.30	3
Pb	208	209	3	10.458	ppb	0.39	1,037,747.33	2.547E-01	Pulse	0.30	3
U	238	209	3	22.079	ppb	0.19	2,478,443.51	6.082E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,551,217.85	1.01	91.1	Analog	0.30	3
2	Sc	45	96,432.46	3.05	106.4	Pulse	0.30	3
3	Sc	45	2,854,757.60	0.92	119.8	Analog	0.30	3
1	Ge	72	66,962.41	1.08	95.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	59,926.39	2.37	98.8	Pulse	0.30	3
2	Rh	103	1,697,181.97	5.41	92.8	Analog	0.30	3
3	Rh	103	3,674,334.32	0.99	99.1	Analog	0.30	3
3	In	115	4,229,311.06	0.79	105.9	Analog	0.30	3
3	Tb	159	6,970,399.62	1.15	109.0	Analog	0.30	3
3	Bi	209	4,075,101.33	0.58	95.5	Analog	0.30	3

Quantitation Report

File Name	A0516050.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:33
Sample Name	N019639-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.946	ppb	1.57	87,715.06	5.942E-02	Pulse	0.30	3
B	11	6	3	2427.176	ppb	1.00	20,444,119.92	1.385E+01	Analog	0.30	3
Na	23	45	2	150513.261	ppb	0.76	197,986,752.61	2.192E+03	Analog	0.30	3
Mg	26	45	2	15797.311	ppb	0.44	1,855,000.91	2.053E+01	Analog	0.30	3
Al	27	45	2	208.971	ppb	0.59	50,167.10	5.554E-01	Pulse	0.30	3
K	39	45	2	3232.387	ppb	2.57	1,235,973.46	1.368E+01	Analog	0.30	3
Ca	44	45	3	79797.514	ppb	0.20	103,400,177.35	3.851E+01	Analog	0.30	3
V	51	45	2	15.436	ppb	1.59	78,214.70	8.659E-01	Pulse	0.30	3
Cr	52	45	2	12.698	ppb	0.70	86,094.00	9.531E-01	Pulse	0.30	3
Mn	55	45	2	94.039	ppb	0.95	345,469.27	3.824E+00	Pulse	0.30	3
Fe	56	45	2	126.301	ppb	1.38	755,283.86	8.362E+00	Pulse	0.30	3
Co	59	45	2	8.783	ppb	1.64	109,728.96	1.215E+00	Pulse	0.30	3
Ni	60	72	2	9.869	ppb	2.16	29,837.73	5.305E-01	Pulse	0.30	3
Cu	63	72	2	9.754	ppb	1.30	83,568.33	1.486E+00	Pulse	0.30	3
Zn	66	72	2	81.644	ppb	1.34	104,606.28	1.860E+00	Pulse	0.30	3
As	75	72	2	11.376	ppb	2.00	7,228.59	1.285E-01	Pulse	0.75	3
Se	78	72	1	9.257	ppb	3.85	2,819.25	4.398E-02	Pulse	0.30	3
Mo	95	103	2	11.995	ppb	1.08	44,794.76	2.783E-02	Pulse	0.30	3
Ag	107	103	3	0.066	ppb	5.30	2,244.14	6.517E-04	Pulse	0.30	3
Cd	111	115	3	9.113	ppb	0.28	67,880.38	1.712E-02	Pulse	0.30	3
Sb	121	115	3	9.888	ppb	0.39	245,428.61	6.191E-02	Pulse	0.30	3
Ba	137	159	3	141.457	ppb	1.03	1,369,391.07	2.099E-01	Analog	0.30	3
Tl	205	209	3	10.451	ppb	0.68	710,525.39	1.857E-01	Pulse	0.30	3
Pb	208	209	3	10.489	ppb	0.91	977,068.16	2.554E-01	Pulse	0.30	3
U	238	209	3	22.413	ppb	0.39	2,362,031.77	6.174E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,476,285.96	1.34	86.7	Analog	0.30	3
2	Sc	45	90,340.22	2.43	99.7	Pulse	0.30	3
3	Sc	45	2,685,093.78	0.47	112.7	Analog	0.30	3
1	Ge	72	64,083.18	1.85	91.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	56,263.51	2.96	92.8	Pulse	0.30	3
2	Rh	103	1,609,612.84	2.39	88.0	Analog	0.30	3
3	Rh	103	3,443,521.13	0.34	92.9	Analog	0.30	3
3	In	115	3,964,615.10	0.47	99.2	Analog	0.30	3
3	Tb	159	6,522,531.92	0.20	102.0	Analog	0.30	3
3	Bi	209	3,825,702.30	0.68	89.7	Analog	0.30	3

Quantitation Report

File Name	A0516051.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:39
Sample Name	N019639-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.985	ppb	1.97	84,476.26	5.966E-02	Pulse	0.30	3
B	11	6	3	2430.246	ppb	0.26	19,636,392.49	1.387E+01	Analog	0.30	3
Na	23	45	2	147974.123	ppb	0.12	188,617,528.30	2.155E+03	Analog	0.30	3
Mg	26	45	2	15584.124	ppb	0.95	1,773,345.37	2.026E+01	Analog	0.30	3
Al	27	45	2	204.020	ppb	1.58	47,477.00	5.423E-01	Pulse	0.30	3
K	39	45	2	3189.112	ppb	0.37	1,181,631.19	1.350E+01	Mix	0.30	3
Ca	44	45	3	79850.002	ppb	0.54	100,487,017.39	3.853E+01	Analog	0.30	3
V	51	45	2	15.281	ppb	0.30	75,043.13	8.573E-01	Pulse	0.30	3
Cr	52	45	2	12.414	ppb	0.31	81,577.56	9.320E-01	Pulse	0.30	3
Mn	55	45	2	92.488	ppb	0.59	329,234.09	3.761E+00	Pulse	0.30	3
Fe	56	45	2	124.181	ppb	0.56	719,665.27	8.222E+00	Pulse	0.30	3
Co	59	45	2	8.607	ppb	0.41	104,212.91	1.191E+00	Pulse	0.30	3
Ni	60	72	2	9.910	ppb	1.27	29,105.18	5.327E-01	Pulse	0.30	3
Cu	63	72	2	9.578	ppb	2.23	79,700.79	1.459E+00	Pulse	0.30	3
Zn	66	72	2	81.343	ppb	1.51	101,219.98	1.853E+00	Pulse	0.30	3
As	75	72	2	11.267	ppb	1.07	6,956.72	1.273E-01	Pulse	0.75	3
Se	78	72	1	8.588	ppb	5.70	2,550.32	4.080E-02	Pulse	0.30	3
Mo	95	103	2	11.840	ppb	0.83	42,565.24	2.747E-02	Pulse	0.30	3
Ag	107	103	3	0.076	ppb	8.21	2,473.62	7.363E-04	Pulse	0.30	3
Cd	111	115	3	8.972	ppb	1.00	64,911.20	1.686E-02	Pulse	0.30	3
Sb	121	115	3	9.860	ppb	0.99	237,713.29	6.173E-02	Pulse	0.30	3
Ba	137	159	3	142.656	ppb	0.47	1,332,995.69	2.117E-01	Pulse	0.30	3
Tl	205	209	3	10.364	ppb	0.15	684,993.59	1.842E-01	Pulse	0.30	3
Pb	208	209	3	10.443	ppb	0.57	945,670.37	2.543E-01	Pulse	0.30	3
U	238	209	3	22.354	ppb	0.58	2,290,037.92	6.158E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,416,048.38	0.32	83.1	Analog	0.30	3
2	Sc	45	87,536.57	2.58	96.6	Pulse	0.30	3
3	Sc	45	2,607,790.07	0.71	109.4	Analog	0.30	3
1	Ge	72	62,529.26	0.81	89.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	54,643.33	2.78	90.1	Pulse	0.30	3
2	Rh	103	1,549,614.70	1.88	84.8	Analog	0.30	3
3	Rh	103	3,359,678.66	0.48	90.6	Analog	0.30	3
3	In	115	3,850,949.85	0.47	96.4	Analog	0.30	3
3	Tb	159	6,295,816.22	0.24	98.5	Analog	0.30	3
3	Bi	209	3,719,016.06	0.56	87.2	Analog	0.30	3

Quantitation Report

File Name	A0516052.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:44
Sample Name	N019639-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	67.59	56.67	3.804E-05	Pulse	0.30	3
B	11	6	3	278.492	ppb	0.88	2,401,330.11	1.615E+00	Analog	0.30	3
Na	23	45	2	81782.520	ppb	0.06	108,695,960.60	1.191E+03	Analog	0.30	3
Mg	26	45	2	16550.021	ppb	0.19	1,963,126.86	2.151E+01	Analog	0.30	3
Al	27	45	2	0.503	ppb	41.69	419.81	4.607E-03	Pulse	0.30	3
K	39	45	2	4099.411	ppb	3.17	1,580,082.34	1.731E+01	Analog	0.30	3
Ca	44	45	3	74180.193	ppb	0.37	107,646,130.62	3.580E+01	Analog	0.30	3
V	51	45	2	0.037	ppb	20.45	1,173.43	1.286E-02	Pulse	0.30	3
Cr	52	45	2	4.509	ppb	1.03	31,337.19	3.434E-01	Pulse	0.30	3
OLR Mn	55	45	2	2181.234	ppb	0.78	8,094,029.93	8.868E+01	Analog	0.30	3
Fe	56	45	2	656.413	ppb	0.37	3,960,848.74	4.340E+01	Analog	0.30	3
Co	59	45	2	0.018	ppb	4.54	267.17	2.926E-03	Pulse	0.30	3
Ni	60	72	2	0.037	ppb	56.65	253.39	4.300E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,738.50	-4.637E-02	Pulse	0.30	3
Zn	66	72	2	20.619	ppb	0.70	28,329.64	4.795E-01	Pulse	0.30	3
As	75	72	2	0.634	ppb	4.67	434.13	7.346E-03	Pulse	0.75	3
Se	78	72	1	0.021	ppb	50.23	6.67	9.856E-05	Pulse	0.30	3
Mo	95	103	2	0.577	ppb	3.16	2,263.60	1.351E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,670.96	-4.637E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-21,701.30	-5.284E-03	Pulse	0.30	3
Sb	121	115	3	0.024	ppb	11.96	826.73	2.012E-04	Pulse	0.30	3
Ba	137	159	3	151.089	ppb	0.68	1,502,985.85	2.242E-01	Analog	0.30	3
Tl	205	209	3	0.073	ppb	6.81	5,928.12	1.481E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-39,478.90	-9.862E-03	Pulse	0.30	3
U	238	209	3	2.700	ppb	0.32	297,884.99	7.442E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,487,147.63	0.54	87.3	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	91,258.45	2.37	100.7	Pulse	0.30	3
3	Sc	45	3,007,009.26	0.63	126.2	Analog	0.30	3
1	Ge	72	67,813.42	1.55	96.9	Pulse	0.30	3
2	Ge	72	59,083.26	1.61	97.4	Pulse	0.30	3
2	Rh	103	1,674,620.32	3.22	91.6	Analog	0.30	3
3	Rh	103	3,603,712.13	0.42	97.2	Analog	0.30	3
3	In	115	4,107,328.97	0.52	102.8	Analog	0.30	3
3	Tb	159	6,702,408.37	0.17	104.8	Analog	0.30	3
3	Bi	209	4,003,048.21	0.95	93.8	Analog	0.30	3

Quantitation Report

File Name	A0516053.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:50
Sample Name	CCV3,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	20.371	ppb	0.35	186,260.44	1.217E-01	Pulse	0.30	3
B	11	6	3	227.376	ppb	1.25	2,025,919.96	1.324E+00	Analog	0.30	3
Na	23	45	2	252.449	ppb	1.37	377,870.78	4.085E+00	Pulse	0.30	3
Mg	26	45	2	201.133	ppb	0.93	24,294.97	2.627E-01	Pulse	0.30	3
Al	27	45	2	25.548	ppb	1.70	6,545.80	7.077E-02	Pulse	0.30	3
K	39	45	2	204.256	ppb	1.24	93,608.76	1.012E+00	Pulse	0.30	3
Ca	44	45	3	213.449	ppb	1.26	254,965.45	1.068E-01	Pulse	0.30	3
V	51	45	2	20.274	ppb	1.09	104,878.13	1.134E+00	Pulse	0.30	3
Cr	52	45	2	20.046	ppb	1.49	138,763.60	1.500E+00	Pulse	0.30	3
Mn	55	45	2	20.751	ppb	0.85	78,141.44	8.447E-01	Pulse	0.30	3
Fe	56	45	2	20.563	ppb	1.14	126,967.40	1.373E+00	Pulse	0.30	3
Co	59	45	2	20.483	ppb	0.98	262,020.84	2.833E+00	Pulse	0.30	3
Ni	60	72	2	19.821	ppb	0.63	66,739.47	1.063E+00	Pulse	0.30	3
Cu	63	72	2	19.737	ppb	1.00	187,832.86	2.992E+00	Pulse	0.30	3
Zn	66	72	2	19.954	ppb	0.70	29,156.03	4.644E-01	Pulse	0.30	3
As	75	72	2	20.258	ppb	2.50	14,358.44	2.287E-01	Pulse	0.75	3
Se	78	72	1	20.161	ppb	1.06	7,336.42	9.578E-02	Pulse	0.30	3
Mo	95	103	2	19.508	ppb	1.99	88,286.43	4.525E-02	Pulse	0.30	3
Ag	107	103	3	19.711	ppb	1.35	686,114.09	1.694E-01	Pulse	0.30	3
Cd	111	115	3	20.237	ppb	0.92	170,623.71	3.798E-02	Pulse	0.30	3
Sb	121	115	3	20.138	ppb	0.49	566,132.70	1.260E-01	Pulse	0.30	3
Ba	137	159	3	20.724	ppb	0.37	222,252.33	3.077E-02	Pulse	0.30	3
Tl	205	209	3	20.076	ppb	0.62	1,763,083.19	3.566E-01	Analog	0.30	3
Pb	208	209	3	20.242	ppb	0.57	2,435,175.81	4.926E-01	Pulse	0.30	3
U	238	209	3	19.895	ppb	0.78	2,709,455.33	5.481E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,530,504.82	0.48	89.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	92,504.31	1.34	102.1	Pulse	0.30	3
3	Sc	45	2,388,399.08	1.26	100.2	Analog	0.30	3
1	Ge	72	76,592.24	0.83	109.5	Pulse	0.30	3
2	Ge	72	62,776.05	0.40	103.5	Pulse	0.30	3
2	Rh	103	1,951,193.98	0.35	106.7	Analog	0.30	3
3	Rh	103	4,049,629.42	0.58	109.3	Analog	0.30	3
3	In	115	4,492,345.25	0.68	112.4	Analog	0.30	3
3	Tb	159	7,224,225.03	0.37	113.0	Analog	0.30	3
3	Bi	209	4,943,875.24	0.52	115.9	Analog	0.30	3

Quantitation Report

File Name	A0516054.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 11:55
Sample Name	CCB3,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.826E-06	Pulse	0.30	3
B	11	6	3	19.262	ppb	1.80	201,154.50	1.387E-01	Pulse	0.30	3
Na	23	45	2	41.474	ppb	1.38	83,852.45	1.014E+00	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	84.45	1.019E-03	Pulse	0.30	3
Al	27	45	2	2.871	ppb	10.74	898.94	1.086E-02	Pulse	0.30	3
K	39	45	2	3.314	ppb	7.08	14,181.13	1.714E-01	Pulse	0.30	3
Ca	44	45	3	2.576	ppb	5.36	11,240.02	5.008E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	661.16	7.992E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	571.06	6.909E-03	Pulse	0.30	3
Mn	55	45	2	0.029	ppb	42.88	186.78	2.260E-03	Pulse	0.30	3
Fe	56	45	2	0.379	ppb	6.13	3,172.37	3.834E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	35.46	4.304E-04	Pulse	0.30	3
Ni	60	72	2	0.046	ppb	27.30	276.57	4.807E-03	Pulse	0.30	3
Cu	63	72	2	0.077	ppb	15.10	1,459.74	2.540E-02	Pulse	0.30	3
Zn	66	72	2	0.063	ppb	116.63	838.54	1.459E-02	Pulse	0.30	3
As	75	72	2	0.005	ppb	159.26	14.67	2.546E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.021	ppb	18.79	112.23	6.333E-05	Pulse	0.30	3
Ag	107	103	3	0.035	ppb	4.69	1,462.19	3.804E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	77.91	1.866E-05	Pulse	0.30	3
Sb	121	115	3	0.034	ppb	11.82	1,105.65	2.642E-04	Pulse	0.30	3
Ba	137	159	3	0.014	ppb	3.19	185.09	2.727E-05	Pulse	0.30	3
Tl	205	209	3	0.026	ppb	2.27	2,969.32	6.419E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,437.52	3.107E-04	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.002	ppb	4.33	424.45	9.174E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,450,296.08	0.72	85.2	Analog	0.30	3
2	Sc	45	82,717.67	1.10	91.3	Pulse	0.30	3
3	Sc	45	2,244,577.36	0.66	94.2	Analog	0.30	3
1	Ge	72	70,982.64	1.62	101.4	Pulse	0.30	3
2	Ge	72	57,503.27	0.89	94.8	Pulse	0.30	3
2	Rh	103	1,774,357.94	1.29	97.0	Analog	0.30	3
3	Rh	103	3,843,155.92	0.48	103.7	Analog	0.30	3
3	In	115	4,186,049.01	1.45	104.8	Analog	0.30	3
3	Tb	159	6,788,337.61	0.52	106.2	Analog	0.30	3
3	Bi	209	4,626,225.76	0.55	108.4	Analog	0.30	3

Quantitation Report

File Name	A0516055.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:01
Sample Name	N019639-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	46.64	45.56	2.956E-05	Pulse	0.30	3
B	11	6	3	244.029	ppb	0.73	2,189,707.13	1.419E+00	Analog	0.30	3
Na	23	45	2	89842.254	ppb	0.96	120,897,760.42	1.308E+03	Analog	0.30	3
Mg	26	45	2	12901.225	ppb	1.08	1,549,387.48	1.677E+01	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	303.28	3.277E-03	Pulse	0.30	3
K	39	45	2	2461.506	ppb	0.77	966,043.65	1.045E+01	Pulse	0.30	3
Ca	44	45	3	61372.317	ppb	0.61	86,115,508.72	2.962E+01	Analog	0.30	3
V	51	45	2	0.073	ppb	25.50	1,371.23	1.484E-02	Pulse	0.30	3
Cr	52	45	2	0.594	ppb	6.58	4,797.67	5.191E-02	Pulse	0.30	3
OLR Mn	55	45	2	2509.760	ppb	0.85	9,428,603.16	1.020E+02	Analog	0.30	3
Fe	56	45	2	2165.897	ppb	0.98	13,230,049.40	1.432E+02	Analog	0.30	3
Co	59	45	2	0.167	ppb	1.59	2,175.52	2.355E-02	Pulse	0.30	3
Ni	60	72	2	0.115	ppb	11.89	502.58	8.508E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,234.91	-3.787E-02	Pulse	0.30	3
Zn	66	72	2	1092.935	ppb	2.17	1,459,295.23	2.473E+01	Analog	0.30	3
As	75	72	2	11.231	ppb	0.49	7,490.08	1.269E-01	Pulse	0.75	3
Se	78	72	1	0.007	ppb	86.69	2.22	3.322E-05	Pulse	0.30	3
Mo	95	103	2	11.849	ppb	2.97	46,527.52	2.749E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,169.35	-3.122E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-24,696.04	-5.773E-03	Pulse	0.30	3
Sb	121	115	3	0.041	ppb	5.21	1,303.45	3.047E-04	Pulse	0.30	3
Ba	137	159	3	135.772	ppb	0.74	1,411,538.37	2.015E-01	Analog	0.30	3
Tl	205	209	3	0.038	ppb	3.65	3,591.71	8.646E-04	Pulse	0.30	3
Pb	208	209	3	0.964	ppb	1.51	98,813.03	2.379E-02	Pulse	0.30	3
U	238	209	3	4.490	ppb	0.87	514,009.08	1.237E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,543,778.01	1.94	90.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	92,419.49	3.75	102.0	Pulse	0.30	3
3	Sc	45	2,907,713.85	1.68	122.0	Analog	0.30	3
1	Ge	72	66,835.21	2.55	95.5	Pulse	0.30	3
2	Ge	72	59,027.46	2.83	97.3	Pulse	0.30	3
2	Rh	103	1,692,264.52	1.44	92.6	Analog	0.30	3
3	Rh	103	3,745,654.81	0.99	101.1	Analog	0.30	3
3	In	115	4,277,572.77	0.87	107.1	Analog	0.30	3
3	Tb	159	7,004,689.27	0.69	109.6	Analog	0.30	3
3	Bi	209	4,154,784.90	0.97	97.4	Analog	0.30	3

Quantitation Report

File Name	A0516056.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:06
Sample Name	N019639-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	26.12	51.11	3.480E-05	Pulse	0.30	3
B	11	6	3	466.151	ppb	1.72	3,940,972.67	2.683E+00	Analog	0.30	3
Na	23	45	2	115950.475	ppb	0.50	152,578,969.95	1.689E+03	Analog	0.30	3
Mg	26	45	2	13602.021	ppb	0.74	1,597,990.88	1.768E+01	Analog	0.30	3
Al	27	45	2	0.497	ppb	13.63	415.11	4.590E-03	Pulse	0.30	3
K	39	45	2	2965.492	ppb	1.07	1,135,094.06	1.256E+01	Mix	0.30	3
Ca	44	45	3	71673.023	ppb	0.34	91,255,086.42	3.459E+01	Analog	0.30	3
V	51	45	2	5.398	ppb	1.32	27,994.66	3.099E-01	Pulse	0.30	3
Cr	52	45	2	2.174	ppb	3.28	15,327.23	1.695E-01	Pulse	0.30	3
Mn	55	45	2	0.530	ppb	12.95	2,046.24	2.259E-02	Pulse	0.30	3
Fe	56	45	2	6.414	ppb	1.34	39,507.10	4.373E-01	Pulse	0.30	3
Co	59	45	2	0.078	ppb	1.61	1,013.81	1.122E-02	Pulse	0.30	3
Ni	60	72	2	2.144	ppb	3.34	6,758.21	1.171E-01	Pulse	0.30	3
Cu	63	72	2	0.237	ppb	3.78	2,856.19	4.950E-02	Pulse	0.30	3
Zn	66	72	2	0.050	ppb	276.26	822.38	1.429E-02	Pulse	0.30	3
As	75	72	2	2.495	ppb	3.84	1,636.20	2.834E-02	Pulse	0.75	3
Se	78	72	1	0.326	ppb	12.05	100.00	1.547E-03	Pulse	0.30	3
Mo	95	103	2	1.497	ppb	2.46	5,616.79	3.485E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,295.84	-3.688E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-207.45	-5.170E-05	Pulse	0.30	3
Sb	121	115	3	0.031	ppb	1.26	976.74	2.432E-04	Pulse	0.30	3
Ba	137	159	3	42.750	ppb	0.37	416,773.51	6.345E-02	Pulse	0.30	3
Tl	205	209	3	0.031	ppb	5.87	2,864.85	7.384E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,902.01	-4.903E-04	Pulse	0.30	3
U	238	209	3	18.771	ppb	0.37	2,006,743.75	5.171E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,468,646.77	0.29	86.2	Analog	0.30	3
2	Sc	45	90,369.97	3.09	99.7	Pulse	0.30	3
3	Sc	45	2,638,324.21	1.16	110.7	Analog	0.30	3
1	Ge	72	64,659.71	1.32	92.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	57,708.59	1.84	95.2	Pulse	0.30	3
2	Rh	103	1,611,949.89	3.87	88.2	Analog	0.30	3
3	Rh	103	3,513,892.45	0.45	94.8	Analog	0.30	3
3	In	115	4,015,921.85	1.14	100.5	Analog	0.30	3
3	Tb	159	6,568,088.65	0.86	102.7	Analog	0.30	3
3	Bi	209	3,881,012.09	1.16	90.9	Analog	0.30	3

Quantitation Report

File Name A0516057.D
File Path C:\ICPMH\1\DATA\160516A.B
Method File DEFAULT.M
Method Path C:\ICPMH\1\METHODS\
Acq Time 05/16/2016 12:12
Sample Name N019639-008B,SAMP,1
Sample Type Sample
Comment
Prep Dilution 1.000
Auto Dilution N/A
Total Dilution 1.000
Operator Name
Acq Mode Spectrum
Cal Title
Cal Type External Calibration
Last Calib 05/16/2016 08:39
Bkg File
Bkg Mode Count Subtraction except for ISTD
Interference File Acq. Defined
FQ Blank File
VIS Fit Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	18.18	44.45	3.084E-05	Pulse	0.30	3
B	11	6	3	585.721	ppb	0.95	4,855,380.76	3.364E+00	Analog	0.30	3
Na	23	45	2	154759.286	ppb	1.78	201,752,763.66	2.254E+03	Analog	0.30	3
Mg	26	45	2	15866.893	ppb	0.62	1,847,002.82	2.062E+01	Analog	0.30	3
Al	27	45	2	0.489	ppb	70.78	406.94	4.570E-03	Pulse	0.30	3
K	39	45	2	2973.914	ppb	1.49	1,127,932.35	1.260E+01	Pulse	0.30	3
Ca	44	45	3	83719.230	ppb	0.49	104,668,607.33	4.040E+01	Analog	0.30	3
V	51	45	2	4.835	ppb	2.22	24,948.47	2.786E-01	Pulse	0.30	3
Cr	52	45	2	1.699	ppb	3.52	12,007.00	1.342E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	53.74	6.448E-04	Pulse	0.30	3
Fe	56	45	2	11.805	ppb	1.83	71,060.23	7.936E-01	Pulse	0.30	3
Co	59	45	2	0.064	ppb	2.43	838.32	9.353E-03	Pulse	0.30	3
Ni	60	72	2	1.633	ppb	3.31	5,090.73	8.972E-02	Pulse	0.30	3
Cu	63	72	2	0.270	ppb	11.98	3,095.24	5.457E-02	Pulse	0.30	3
Zn	66	72	2	0.069	ppb	24.74	836.24	1.472E-02	Pulse	0.30	3
As	75	72	2	2.505	ppb	5.86	1,614.13	2.845E-02	Pulse	0.75	3
Se	78	72	1	0.355	ppb	25.36	108.90	1.688E-03	Pulse	0.30	3
Mo	95	103	2	1.118	ppb	1.66	4,138.51	2.605E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,373.05	-4.071E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-261.23	-6.717E-05	Pulse	0.30	3
Sb	121	115	3	0.029	ppb	6.52	886.73	2.281E-04	Pulse	0.30	3
Ba	137	159	3	48.251	ppb	0.28	454,462.81	7.162E-02	Pulse	0.30	3
Tl	205	209	3	0.026	ppb	1.87	2,378.07	6.412E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,866.35	-5.024E-04	Pulse	0.30	3
U	238	209	3	26.569	ppb	1.06	2,714,873.89	7.319E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,443,217.34	1.69	84.7	Analog	0.30	3
2	Sc	45	89,573.18	4.48	98.9	Pulse	0.30	3
3	Sc	45	2,590,859.13	1.75	108.7	Analog	0.30	3
1	Ge	72	64,388.72	1.01	92.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	56,771.87	2.44	93.6	Pulse	0.30	3
2	Rh	103	1,588,088.76	3.90	86.9	Analog	0.30	3
3	Rh	103	3,373,259.46	1.51	91.0	Analog	0.30	3
3	In	115	3,890,086.60	2.13	97.4	Analog	0.30	3
3	Tb	159	6,345,685.46	2.38	99.3	Analog	0.30	3
3	Bi	209	3,708,881.37	1.83	86.9	Analog	0.30	3

Quantitation Report

File Name	A0516058.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:17
Sample Name	N019639-009B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.006	ppb	21.44	61.11	4.617E-05	Pulse	0.30	3
B	11	6	3	495.029	ppb	0.94	3,762,575.18	2.848E+00	Analog	0.30	3
Na	23	45	2	161708.502	ppb	1.21	198,593,848.15	2.355E+03	Analog	0.30	3
Mg	26	45	2	14355.158	ppb	1.54	1,573,900.64	1.866E+01	Analog	0.30	3
Al	27	45	2	1.602	ppb	4.64	633.08	7.510E-03	Pulse	0.30	3
K	39	45	2	2342.496	ppb	1.26	839,799.47	9.956E+00	Pulse	0.30	3
Ca	44	45	3	76311.139	ppb	0.63	86,536,253.71	3.683E+01	Analog	0.30	3
V	51	45	2	4.845	ppb	1.46	23,543.09	2.792E-01	Pulse	0.30	3
Cr	52	45	2	1.554	ppb	1.61	10,402.38	1.233E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-253.96	-2.980E-03	Pulse	0.30	3
Fe	56	45	2	4.665	ppb	1.39	27,133.53	3.217E-01	Pulse	0.30	3
Co	59	45	2	0.050	ppb	7.28	624.13	7.406E-03	Pulse	0.30	3
Ni	60	72	2	1.249	ppb	3.26	3,704.02	6.916E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	188.17	3.485E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	479.97	8.996E-03	Pulse	0.30	3
As	75	72	2	2.193	ppb	2.01	1,335.80	2.494E-02	Pulse	0.75	3
Se	78	72	1	0.337	ppb	14.09	98.89	1.601E-03	Pulse	0.30	3
Mo	95	103	2	1.026	ppb	3.92	3,522.76	2.392E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,049.20	-3.420E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-243.48	-6.899E-05	Pulse	0.30	3
Sb	121	115	3	0.026	ppb	5.88	751.17	2.131E-04	Pulse	0.30	3
Ba	137	159	3	56.119	ppb	0.35	477,585.66	8.330E-02	Pulse	0.30	3
Tl	205	209	3	0.021	ppb	1.30	1,835.76	5.479E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	106.77	3.260E-05	Pulse	0.30	3
U	238	209	3	26.238	ppb	1.07	2,422,110.89	7.228E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,321,162.71	1.75	77.6	Analog	0.30	3
2	Sc	45	84,337.02	2.26	93.1	Pulse	0.30	3
3	Sc	45	2,349,639.72	1.92	98.6	Analog	0.30	3
1	Ge	72	61,687.43	1.15	88.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	53,585.94	3.48	88.4	Pulse	0.30	3
2	Rh	103	1,473,541.52	2.44	80.6	Analog	0.30	3
3	Rh	103	3,068,142.76	2.05	82.8	Analog	0.30	3
3	In	115	3,527,949.31	2.76	88.3	Analog	0.30	3
3	Tb	159	5,733,789.36	2.24	89.7	Analog	0.30	3
3	Bi	209	3,350,699.57	1.88	78.5	Analog	0.30	3

Quantitation Report

File Name	A0516059.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:23
Sample Name	N019639-010B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	62.96	41.11	3.404E-05	Pulse	0.30	3
B	11	6	3	428.492	ppb	0.94	2,993,485.00	2.469E+00	Analog	0.30	3
Na	23	45	2	174275.396	ppb	0.77	208,243,010.23	2.538E+03	Analog	0.30	3
Mg	26	45	2	15130.368	ppb	1.67	1,613,562.86	1.967E+01	Analog	0.30	3
Al	27	45	2	0.027	ppb	1220.76	273.54	3.349E-03	Pulse	0.30	3
K	39	45	2	3135.050	ppb	1.08	1,088,959.77	1.327E+01	Pulse	0.30	3
Ca	44	45	3	80090.937	ppb	0.63	82,211,683.78	3.865E+01	Analog	0.30	3
V	51	45	2	4.968	ppb	1.64	23,470.76	2.860E-01	Pulse	0.30	3
Cr	52	45	2	1.278	ppb	3.29	8,436.46	1.028E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-1,914.27	-2.332E-02	Pulse	0.30	3
Fe	56	45	2	1.131	ppb	2.63	7,222.20	8.803E-02	Pulse	0.30	3
Co	59	45	2	0.032	ppb	9.15	400.86	4.892E-03	Pulse	0.30	3
Ni	60	72	2	0.911	ppb	1.69	2,702.06	5.106E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-764.98	-1.444E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-126.81	-2.372E-03	Pulse	0.30	3
As	75	72	2	2.631	ppb	6.77	1,580.15	2.987E-02	Pulse	0.75	3
Se	78	72	1	0.283	ppb	17.66	82.22	1.345E-03	Pulse	0.30	3
Mo	95	103	2	1.031	ppb	6.16	3,539.44	2.404E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,142.32	-4.086E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-211.98	-6.614E-05	Pulse	0.30	3
Sb	121	115	3	0.025	ppb	3.95	665.60	2.078E-04	Pulse	0.30	3
Ba	137	159	3	41.868	ppb	0.35	322,204.57	6.215E-02	Pulse	0.30	3
Tl	205	209	3	0.021	ppb	14.23	1,664.62	5.471E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,087.94	-3.555E-04	Pulse	0.30	3
U	238	209	3	28.972	ppb	1.10	2,432,233.87	7.981E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,212,343.63	2.08	71.2	Analog	0.30	3
2	Sc	45	82,063.59	2.93	90.6	Pulse	0.30	3
3	Sc	45	2,126,965.91	2.43	89.3	Analog	0.30	3
1	Ge	72	61,224.52	1.24	87.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	52,924.61	1.39	87.3	Pulse	0.30	3
2	Rh	103	1,473,230.95	1.49	80.6	Analog	0.30	3
3	Rh	103	2,795,218.67	2.85	75.4	Analog	0.30	3
3	In	115	3,204,616.89	2.70	80.2	Analog	0.30	3
3	Tb	159	5,185,044.68	3.51	81.1	Analog	0.30	3
3	Bi	209	3,046,995.02	2.86	71.4	Analog	0.30	3

Quantitation Report

File Name	A0516060.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:29
Sample Name	N019639-011B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	24.28	21.11	1.398E-05	Pulse	0.30	3
B	11	6	3	380.706	ppb	0.51	3,318,305.85	2.197E+00	Analog	0.30	3
Na	23	45	2	153769.346	ppb	0.53	213,353,492.38	2.239E+03	Analog	0.30	3
Mg	26	45	2	15500.391	ppb	0.53	1,919,716.08	2.015E+01	Analog	0.30	3
Al	27	45	2	0.400	ppb	85.14	414.15	4.333E-03	Pulse	0.30	3
K	39	45	2	2531.825	ppb	1.11	1,024,242.74	1.075E+01	Pulse	0.30	3
Ca	44	45	3	83492.344	ppb	0.56	110,187,709.47	4.029E+01	Analog	0.30	3
V	51	45	2	4.336	ppb	1.63	23,910.26	2.510E-01	Pulse	0.30	3
Cr	52	45	2	1.531	ppb	3.72	11,589.76	1.217E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-1,578.23	-1.656E-02	Pulse	0.30	3
Fe	56	45	2	0.212	ppb	24.18	2,609.72	2.734E-02	Pulse	0.30	3
Co	59	45	2	0.041	ppb	14.62	586.54	6.143E-03	Pulse	0.30	3
Ni	60	72	2	1.185	ppb	1.14	4,014.43	6.572E-02	Pulse	0.30	3
Cu	63	72	2	0.595	ppb	6.92	6,318.97	1.036E-01	Pulse	0.30	3
Zn	66	72	2	0.685	ppb	16.17	1,750.35	2.867E-02	Pulse	0.30	3
As	75	72	2	2.061	ppb	4.77	1,430.78	2.345E-02	Pulse	0.75	3
Se	78	72	1	0.153	ppb	61.19	51.11	7.291E-04	Pulse	0.30	3
Mo	95	103	2	0.922	ppb	4.64	3,605.03	2.153E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,366.17	-3.807E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-279.05	-6.758E-05	Pulse	0.30	3
Sb	121	115	3	0.021	ppb	7.35	735.61	1.781E-04	Pulse	0.30	3
Ba	137	159	3	32.224	ppb	0.64	320,812.79	4.783E-02	Pulse	0.30	3
Tl	205	209	3	0.018	ppb	7.05	1,962.44	5.020E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	56.33	1.413E-05	Pulse	0.30	3
U	238	209	3	27.389	ppb	0.19	2,948,736.87	7.545E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,510,544.82	0.70	88.7	Analog	0.30	3
2	Sc	45	95,275.46	2.42	105.1	Pulse	0.30	3
3	Sc	45	2,734,791.87	0.63	114.8	Analog	0.30	3
1	Ge	72	69,286.69	3.01	99.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	61,076.26	3.32	100.7	Pulse	0.30	3
2	Rh	103	1,674,146.03	1.75	91.6	Analog	0.30	3
3	Rh	103	3,588,758.70	0.67	96.8	Analog	0.30	3
3	In	115	4,129,891.17	0.52	103.4	Analog	0.30	3
3	Tb	159	6,707,348.51	1.10	104.9	Analog	0.30	3
3	Bi	209	3,908,372.06	1.23	91.6	Analog	0.30	3

Quantitation Report

File Name	A0516061.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:34
Sample Name	N019639-012B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	48.46	37.78	3.046E-05	Pulse	0.30	3
B	11	6	3	407.280	ppb	0.65	2,906,350.82	2.348E+00	Analog	0.30	3
Na	23	45	2	122497.410	ppb	0.75	139,064,336.82	1.784E+03	Analog	0.30	3
Mg	26	45	2	22084.298	ppb	1.05	2,237,964.43	2.870E+01	Analog	0.30	3
Al	27	45	2	0.328	ppb	44.67	323.50	4.145E-03	Pulse	0.30	3
K	39	45	2	3702.145	ppb	1.06	1,219,646.50	1.564E+01	Analog	0.30	3
Ca	44	45	3	113065.923	ppb	0.72	123,030,029.28	5.456E+01	Analog	0.30	3
V	51	45	2	4.273	ppb	1.91	19,293.14	2.475E-01	Pulse	0.30	3
Cr	52	45	2	2.758	ppb	1.69	16,605.98	2.130E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,341.47	-3.004E-02	Pulse	0.30	3
Fe	56	45	2	6.263	ppb	1.51	33,307.44	4.273E-01	Pulse	0.30	3
Co	59	45	2	0.046	ppb	18.21	530.75	6.816E-03	Pulse	0.30	3
Ni	60	72	2	1.766	ppb	2.67	4,890.33	9.682E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-158.41	-3.120E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	174.87	3.476E-03	Pulse	0.30	3
As	75	72	2	1.357	ppb	8.83	783.55	1.551E-02	Pulse	0.75	3
Se	78	72	1	0.511	ppb	12.70	142.23	2.427E-03	Pulse	0.30	3
Mo	95	103	2	1.015	ppb	4.63	3,317.17	2.367E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,555.90	-5.181E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-350.87	-1.010E-04	Pulse	0.30	3
Sb	121	115	3	0.021	ppb	11.99	625.60	1.802E-04	Pulse	0.30	3
Ba	137	159	3	53.284	ppb	0.15	446,962.11	7.909E-02	Pulse	0.30	3
Tl	205	209	3	0.018	ppb	7.15	1,666.84	5.001E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,107.07	-6.321E-04	Pulse	0.30	3
U	238	209	3	45.518	ppb	0.52	4,178,094.12	1.254E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,237,739.75	0.83	72.7	Analog	0.30	3
2	Sc	45	77,963.41	1.80	86.0	Pulse	0.30	3
3	Sc	45	2,254,866.41	0.68	94.6	Analog	0.30	3
1	Ge	72	58,605.75	1.01	83.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	50,514.53	1.19	83.3	Pulse	0.30	3
2	Rh	103	1,401,513.84	0.73	76.7	Analog	0.30	3
3	Rh	103	3,003,000.34	0.89	81.0	Analog	0.30	3
3	In	115	3,473,550.42	0.79	86.9	Analog	0.30	3
3	Tb	159	5,651,532.35	0.83	88.4	Analog	0.30	3
3	Bi	209	3,332,341.44	1.20	78.1	Analog	0.30	3

Quantitation Report

File Name	A0516062.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:40
Sample Name	N019639-013B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	36.84	43.34	3.653E-05	Pulse	0.30	3
B	11	6	3	417.770	ppb	1.39	2,859,390.30	2.408E+00	Analog	0.30	3
Na	23	45	2	127370.334	ppb	0.37	139,619,602.36	1.855E+03	Analog	0.30	3
Mg	26	45	2	23059.513	ppb	1.27	2,255,759.76	2.997E+01	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	213.94	2.844E-03	Pulse	0.30	3
K	39	45	2	3874.918	ppb	1.96	1,232,285.44	1.637E+01	Analog	0.30	3
Ca	44	45	3	118288.022	ppb	0.88	124,171,365.93	5.708E+01	Analog	0.30	3
V	51	45	2	4.450	ppb	1.10	19,369.79	2.573E-01	Pulse	0.30	3
Cr	52	45	2	2.878	ppb	1.68	16,710.91	2.219E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,474.90	-3.285E-02	Pulse	0.30	3
Fe	56	45	2	5.001	ppb	2.37	25,873.17	3.439E-01	Pulse	0.30	3
Co	59	45	2	0.050	ppb	5.59	554.06	7.353E-03	Pulse	0.30	3
Ni	60	72	2	1.827	ppb	0.39	4,855.47	1.001E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-47.77	-9.440E-04	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	13.05	3.101E-04	Pulse	0.30	3
As	75	72	2	1.367	ppb	5.09	757.72	1.562E-02	Pulse	0.75	3
Se	78	72	1	0.534	ppb	7.87	145.56	2.536E-03	Pulse	0.30	3
Mo	95	103	2	1.117	ppb	3.46	3,462.76	2.603E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,604.36	-5.584E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-18,462.50	-5.510E-03	Pulse	0.30	3
Sb	121	115	3	0.023	ppb	9.48	650.04	1.953E-04	Pulse	0.30	3
Ba	137	159	3	53.624	ppb	4.54	430,599.62	7.959E-02	Pulse	0.30	3
Tl	205	209	3	0.015	ppb	1.60	1,454.59	4.533E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-36,103.67	-1.124E-02	Pulse	0.30	3
U	238	209	3	47.279	ppb	0.61	4,179,164.37	1.302E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,187,603.33	0.77	69.7	Analog	0.30	3
2	Sc	45	75,275.04	2.95	83.1	Pulse	0.30	3
3	Sc	45	2,175,348.22	0.44	91.3	Analog	0.30	3
1	Ge	72	57,363.87	1.55	82.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	48,497.44	2.56	80.0	Pulse	0.30	3
2	Rh	103	1,331,304.70	3.08	72.8	Analog	0.30	3
3	Rh	103	2,873,275.86	1.16	77.5	Analog	0.30	3
3	In	115	3,329,296.38	1.15	83.3	Analog	0.30	3
3	Tb	159	5,411,464.50	1.04	84.6	Analog	0.30	3
3	Bi	209	3,208,910.40	0.37	75.2	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0516063.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:45
Sample Name	N019639-014B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	62.69	51.11	4.102E-05	Pulse	0.30	3
B	11	6	3	565.342	ppb	1.22	4,050,667.30	3.248E+00	Analog	0.30	3
Na	23	45	2	143036.973	ppb	1.19	165,040,226.43	2.083E+03	Analog	0.30	3
Mg	26	45	2	18973.624	ppb	1.21	1,954,046.08	2.466E+01	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	218.48	2.750E-03	Pulse	0.30	3
K	39	45	2	3556.654	ppb	1.22	1,191,301.58	1.504E+01	Mix	0.30	3
Ca	44	45	3	99891.742	ppb	0.83	111,754,893.89	4.821E+01	Analog	0.30	3
V	51	45	2	5.005	ppb	2.06	22,825.43	2.880E-01	Pulse	0.30	3
Cr	52	45	2	1.746	ppb	2.34	10,903.76	1.376E-01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,682.89	-3.386E-02	Pulse	0.30	3
Fe	56	45	2	3.151	ppb	3.58	17,555.19	2.216E-01	Pulse	0.30	3
Co	59	45	2	0.036	ppb	20.87	433.51	5.463E-03	Pulse	0.30	3
Ni	60	72	2	1.020	ppb	3.70	2,895.45	5.691E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-531.18	-1.042E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-275.12	-5.409E-03	Pulse	0.30	3
As	75	72	2	1.340	ppb	2.95	779.06	1.531E-02	Pulse	0.75	3
Se	78	72	1	0.429	ppb	14.63	120.00	2.036E-03	Pulse	0.30	3
Mo	95	103	2	1.033	ppb	3.67	3,370.50	2.410E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,498.63	-4.889E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-275.54	-7.759E-05	Pulse	0.30	3
Sb	121	115	3	0.020	ppb	8.60	620.04	1.745E-04	Pulse	0.30	3
Ba	137	159	3	43.249	ppb	0.23	370,830.74	6.419E-02	Pulse	0.30	3
Tl	205	209	3	0.016	ppb	10.07	1,579.04	4.616E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-943.34	-2.760E-04	Pulse	0.30	3
U	238	209	3	33.491	ppb	0.60	3,157,578.49	9.225E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,246,990.01	0.92	73.2	Analog	0.30	3
2	Sc	45	79,236.17	1.64	87.4	Pulse	0.30	3
3	Sc	45	2,318,478.21	1.62	97.3	Analog	0.30	3
1	Ge	72	59,037.88	1.89	84.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	50,897.19	1.84	83.9	Pulse	0.30	3
2	Rh	103	1,398,144.71	1.64	76.5	Analog	0.30	3
3	Rh	103	3,065,357.70	0.54	82.7	Analog	0.30	3
3	In	115	3,551,298.07	0.80	88.9	Analog	0.30	3
3	Tb	159	5,776,602.13	0.71	90.4	Analog	0.30	3
3	Bi	209	3,422,739.63	1.28	80.2	Analog	0.30	3

Quantitation Report

File Name	A0516064.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:51
Sample Name	N019639-014B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.084	ppb	1.60	75,190.66	6.025E-02	Pulse	0.30	3
B	11	6	3	2460.174	ppb	0.25	17,523,015.18	1.404E+01	Analog	0.30	3
Na	23	45	2	148073.619	ppb	0.72	166,405,657.52	2.156E+03	Analog	0.30	3
Mg	26	45	2	19692.034	ppb	0.82	1,975,229.66	2.560E+01	Analog	0.30	3
Al	27	45	2	189.837	ppb	0.98	38,960.64	5.048E-01	Pulse	0.30	3
K	39	45	2	3785.865	ppb	0.61	1,234,373.58	1.599E+01	Analog	0.30	3
Ca	44	45	3	101735.472	ppb	1.02	116,100,029.38	4.909E+01	Analog	0.30	3
V	51	45	2	15.136	ppb	0.32	65,533.45	8.493E-01	Pulse	0.30	3
Cr	52	45	2	11.056	ppb	1.60	64,093.72	8.308E-01	Pulse	0.30	3
Mn	55	45	2	91.964	ppb	0.44	288,589.18	3.740E+00	Pulse	0.30	3
Fe	56	45	2	94.213	ppb	0.75	481,600.04	6.241E+00	Pulse	0.30	3
Co	59	45	2	8.560	ppb	1.38	91,368.60	1.184E+00	Pulse	0.30	3
Ni	60	72	2	9.887	ppb	1.79	26,397.88	5.315E-01	Pulse	0.30	3
Cu	63	72	2	8.270	ppb	1.01	62,667.75	1.262E+00	Pulse	0.30	3
Zn	66	72	2	77.058	ppb	1.79	87,213.80	1.756E+00	Pulse	0.30	3
As	75	72	2	10.931	ppb	2.36	6,133.99	1.235E-01	Pulse	0.75	3
Se	78	72	1	8.685	ppb	5.59	2,365.84	4.126E-02	Pulse	0.30	3
Mo	95	103	2	11.953	ppb	2.33	37,913.80	2.773E-02	Pulse	0.30	3
Ag	107	103	3	0.058	ppb	3.45	1,783.75	5.794E-04	Pulse	0.30	3
Cd	111	115	3	8.924	ppb	0.22	59,781.29	1.677E-02	Pulse	0.30	3
Sb	121	115	3	9.828	ppb	0.49	219,383.75	6.153E-02	Pulse	0.30	3
Ba	137	159	3	149.210	ppb	0.72	1,288,575.72	2.215E-01	Pulse	0.30	3
Tl	205	209	3	10.335	ppb	0.30	632,608.48	1.837E-01	Pulse	0.30	3
Pb	208	209	3	10.466	ppb	0.54	877,695.29	2.548E-01	Pulse	0.30	3
U	238	209	3	34.674	ppb	0.18	3,289,761.59	9.551E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,248,341.26	2.30	73.3	Analog	0.30	3
2	Sc	45	77,168.03	2.73	85.2	Pulse	0.30	3
3	Sc	45	2,365,162.34	2.58	99.2	Analog	0.30	3
1	Ge	72	57,370.59	1.61	82.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	49,674.53	2.71	81.9	Pulse	0.30	3
2	Rh	103	1,366,901.77	1.92	74.8	Analog	0.30	3
3	Rh	103	3,078,243.01	1.22	83.1	Analog	0.30	3
3	In	115	3,565,507.25	1.68	89.2	Analog	0.30	3
3	Tb	159	5,819,240.12	2.22	91.0	Analog	0.30	3
3	Bi	209	3,444,222.66	1.62	80.7	Analog	0.30	3

Quantitation Report

File Name	A0516065.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 12:56
Sample Name	CCV4,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	20.159	ppb	0.66	160,275.18	1.204E-01	Pulse	0.30	3
B	11	6	3	228.461	ppb	1.22	1,769,776.47	1.330E+00	Analog	0.30	3
Na	23	45	2	260.516	ppb	2.25	341,809.62	4.203E+00	Pulse	0.30	3
Mg	26	45	2	198.411	ppb	0.49	21,077.33	2.591E-01	Pulse	0.30	3
Al	27	45	2	25.868	ppb	2.88	5,823.61	7.162E-02	Pulse	0.30	3
K	39	45	2	210.937	ppb	1.91	84,579.05	1.040E+00	Pulse	0.30	3
Ca	44	45	3	216.808	ppb	0.71	226,103.11	1.084E-01	Pulse	0.30	3
V	51	45	2	20.297	ppb	1.42	92,325.45	1.135E+00	Pulse	0.30	3
Cr	52	45	2	19.770	ppb	1.75	120,343.21	1.480E+00	Pulse	0.30	3
Mn	55	45	2	20.643	ppb	2.36	68,338.60	8.403E-01	Pulse	0.30	3
Fe	56	45	2	20.201	ppb	1.01	109,692.98	1.349E+00	Pulse	0.30	3
Co	59	45	2	19.864	ppb	1.51	223,435.92	2.747E+00	Pulse	0.30	3
Ni	60	72	2	18.862	ppb	1.26	57,280.63	1.012E+00	Pulse	0.30	3
Cu	63	72	2	18.782	ppb	1.59	161,215.60	2.848E+00	Pulse	0.30	3
Zn	66	72	2	18.947	ppb	3.06	24,996.38	4.417E-01	Pulse	0.30	3
As	75	72	2	20.174	ppb	0.59	12,896.33	2.278E-01	Pulse	0.75	3
Se	78	72	1	18.828	ppb	3.31	6,188.09	8.945E-02	Pulse	0.30	3
Mo	95	103	2	19.705	ppb	1.41	76,742.88	4.570E-02	Pulse	0.30	3
Ag	107	103	3	19.464	ppb	0.75	587,919.07	1.673E-01	Pulse	0.30	3
Cd	111	115	3	19.742	ppb	0.93	144,550.08	3.705E-02	Pulse	0.30	3
Sb	121	115	3	20.227	ppb	0.87	493,798.87	1.266E-01	Pulse	0.30	3
Ba	137	159	3	20.952	ppb	0.50	193,588.39	3.110E-02	Pulse	0.30	3
Tl	205	209	3	19.988	ppb	0.57	1,485,776.92	3.551E-01	Analog	0.30	3
Pb	208	209	3	20.155	ppb	0.60	2,052,315.82	4.904E-01	Pulse	0.30	3
U	238	209	3	19.786	ppb	0.19	2,280,878.14	5.451E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,330,838.69	0.70	78.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	81,347.63	2.11	89.8	Pulse	0.30	3
3	Sc	45	2,086,148.37	0.60	87.5	Analog	0.30	3
1	Ge	72	69,148.13	2.12	98.8	Pulse	0.30	3
2	Ge	72	56,615.72	1.87	93.4	Pulse	0.30	3
2	Rh	103	1,678,916.97	1.48	91.8	Analog	0.30	3
3	Rh	103	3,513,851.72	0.53	94.8	Analog	0.30	3
3	In	115	3,901,073.46	0.40	97.6	Analog	0.30	3
3	Tb	159	6,224,227.76	0.48	97.4	Analog	0.30	3
3	Bi	209	4,184,734.41	0.92	98.1	Analog	0.30	3

Quantitation Report

File Name	A0516066.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:02
Sample Name	CCB4,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	7.78	6.796E-06	Pulse	0.30	3
B	11	6	3	24.153	ppb	1.39	190,076.50	1.666E-01	Pulse	0.30	3
Na	23	45	2	51.450	ppb	4.99	79,855.13	1.159E+00	Pulse	0.30	3
Mg	26	45	2	0.338	ppb	16.92	115.56	1.676E-03	Pulse	0.30	3
Al	27	45	2	3.100	ppb	7.10	790.05	1.147E-02	Pulse	0.30	3
K	39	45	2	10.057	ppb	24.22	13,750.63	1.997E-01	Pulse	0.30	3
Ca	44	45	3	4.711	ppb	6.14	10,698.30	6.038E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	472.25	6.843E-03	Pulse	0.30	3
Cr	52	45	2	0.065	ppb	11.13	862.20	1.251E-02	Pulse	0.30	3
Mn	55	45	2	0.014	ppb	134.41	111.13	1.627E-03	Pulse	0.30	3
Fe	56	45	2	0.416	ppb	7.38	2,810.46	4.079E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	351.26	33.24	4.857E-04	Pulse	0.30	3
Ni	60	72	2	0.086	ppb	21.58	339.92	6.917E-03	Pulse	0.30	3
Cu	63	72	2	0.028	ppb	13.21	886.46	1.807E-02	Pulse	0.30	3
Zn	66	72	2	0.093	ppb	64.45	748.56	1.526E-02	Pulse	0.30	3
As	75	72	2	0.011	ppb	61.55	16.00	3.274E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	173.21	3.33	5.397E-05	Pulse	0.30	3
Mo	95	103	2	0.021	ppb	35.64	88.89	6.166E-05	Pulse	0.30	3
Ag	107	103	3	0.034	ppb	5.03	1,137.99	3.801E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	37.77	1.154E-05	Pulse	0.30	3
Sb	121	115	3	0.033	ppb	9.72	844.51	2.578E-04	Pulse	0.30	3
Ba	137	159	3	0.026	ppb	3.88	231.61	4.481E-05	Pulse	0.30	3
Tl	205	209	3	0.017	ppb	5.08	1,690.17	4.849E-04	Pulse	0.30	3
Pb	208	209	3	0.002	ppb	33.24	1,326.45	3.805E-04	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.003	ppb	10.46	389.27	1.117E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,141,222.72	0.48	67.0	Analog	0.30	3
2	Sc	45	68,951.15	3.35	76.1	Pulse	0.30	3
3	Sc	45	1,771,761.05	0.29	74.3	Analog	0.30	3
1	Ge	72	61,246.70	1.19	87.5	Pulse	0.30	3
2	Ge	72	49,030.12	2.40	80.9	Pulse	0.30	3
2	Rh	103	1,440,340.83	0.81	78.8	Analog	0.30	3
3	Rh	103	2,994,158.29	0.84	80.8	Analog	0.30	3
3	In	115	3,275,122.35	0.19	82.0	Analog	0.30	3
3	Tb	159	5,168,461.49	0.22	80.8	Analog	0.30	3
3	Bi	209	3,485,743.77	0.15	81.7	Analog	0.30	3

Quantitation Report

File Name	A0516067.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:08
Sample Name	N019639-015B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.043	ppb	15.97	344.46	2.666E-04	Pulse	0.30	3
B	11	6	3	370.273	ppb	0.75	2,761,346.43	2.137E+00	Analog	0.30	3
Na	23	45	2	121156.613	ppb	0.22	140,767,572.35	1.764E+03	Analog	0.30	3
Mg	26	45	2	12132.477	ppb	0.64	1,258,482.34	1.577E+01	Analog	0.30	3
Al	27	45	2	786.946	ppb	2.69	166,030.39	2.082E+00	Pulse	0.30	3
K	39	45	2	2689.687	ppb	0.49	910,185.33	1.141E+01	Pulse	0.30	3
Ca	44	45	3	63851.942	ppb	0.37	73,882,773.34	3.081E+01	Analog	0.30	3
V	51	45	2	6.916	ppb	0.69	31,427.48	3.939E-01	Pulse	0.30	3
Cr	52	45	2	3.601	ppb	2.77	21,994.08	2.758E-01	Pulse	0.30	3
Mn	55	45	2	20.041	ppb	0.98	65,081.06	8.159E-01	Pulse	0.30	3
Fe	56	45	2	956.250	ppb	4.78	5,050,031.33	6.322E+01	Analog	0.30	3
Co	59	45	2	0.414	ppb	0.59	4,604.84	5.771E-02	Pulse	0.30	3
Ni	60	72	2	1.396	ppb	6.68	3,968.21	7.701E-02	Pulse	0.30	3
Cu	63	72	2	0.540	ppb	2.14	4,911.30	9.530E-02	Pulse	0.30	3
Zn	66	72	2	2.165	ppb	6.53	3,198.72	6.213E-02	Pulse	0.30	3
As	75	72	2	2.389	ppb	1.27	1,398.98	2.714E-02	Pulse	0.75	3
Se	78	72	1	0.221	ppb	21.32	60.00	1.051E-03	Pulse	0.30	3
Mo	95	103	2	1.140	ppb	7.69	3,860.65	2.658E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,023.62	-3.205E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-153.42	-4.156E-05	Pulse	0.30	3
Sb	121	115	3	0.041	ppb	9.10	1,133.43	3.070E-04	Pulse	0.30	3
Ba	137	159	3	47.008	ppb	0.79	422,602.60	6.977E-02	Pulse	0.30	3
Tl	205	209	3	0.039	ppb	1.73	3,142.70	8.697E-04	Pulse	0.30	3
Pb	208	209	3	0.337	ppb	2.33	30,820.69	8.530E-03	Pulse	0.30	3
U	238	209	3	12.659	ppb	0.61	1,260,140.27	3.487E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,291,977.61	0.76	75.9	Analog	0.30	3
2	Sc	45	79,789.34	3.92	88.1	Pulse	0.30	3
3	Sc	45	2,397,689.39	0.77	100.6	Analog	0.30	3
1	Ge	72	56,902.55	3.04	81.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	51,531.01	2.62	85.0	Pulse	0.30	3
2	Rh	103	1,452,616.64	2.80	79.5	Analog	0.30	3
3	Rh	103	3,193,632.66	0.17	86.2	Analog	0.30	3
3	In	115	3,691,834.67	0.42	92.4	Analog	0.30	3
3	Tb	159	6,056,825.47	0.19	94.7	Analog	0.30	3
3	Bi	209	3,613,391.72	0.09	84.7	Analog	0.30	3

Quantitation Report

File Name	A0516068.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:13
Sample Name	N019639-016B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	148.45	16.67	1.307E-05	Pulse	0.30	3
B	11	6	3	205.505	ppb	0.92	1,525,922.78	1.199E+00	Analog	0.30	3
Na	23	45	2	76254.028	ppb	1.27	90,733,739.76	1.111E+03	Analog	0.30	3
Mg	26	45	2	11885.387	ppb	0.93	1,262,231.51	1.545E+01	Analog	0.30	3
Al	27	45	2	1.420	ppb	31.76	573.05	7.030E-03	Pulse	0.30	3
K	39	45	2	3992.450	ppb	1.53	1,377,175.43	1.686E+01	Analog	0.30	3
Ca	44	45	3	64821.898	ppb	0.38	76,933,864.96	3.128E+01	Analog	0.30	3
V	51	45	2	3.915	ppb	3.39	18,591.09	2.277E-01	Pulse	0.30	3
OLR Cr	52	45	2	388.988	ppb	1.42	2,366,708.14	2.897E+01	Analog	0.30	3
Mn	55	45	2	0.284	ppb	27.73	1,025.52	1.261E-02	Pulse	0.30	3
Fe	56	45	2	1.101	ppb	108.72	6,893.22	8.610E-02	Pulse	0.30	3
Co	59	45	2	0.012	ppb	36.54	175.87	2.140E-03	Pulse	0.30	3
Ni	60	72	2	0.437	ppb	12.57	1,357.30	2.570E-02	Pulse	0.30	3
Cu	63	72	2	0.217	ppb	4.70	2,458.40	4.652E-02	Pulse	0.30	3
Zn	66	72	2	0.256	ppb	31.45	1,000.52	1.895E-02	Pulse	0.30	3
As	75	72	2	1.040	ppb	4.09	630.46	1.193E-02	Pulse	0.75	3
Se	78	72	1	0.068	ppb	44.63	20.00	3.238E-04	Pulse	0.30	3
Mo	95	103	2	2.559	ppb	0.54	8,919.53	5.948E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,365.66	-4.179E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-17,954.95	-4.795E-03	Pulse	0.30	3
Sb	121	115	3	0.069	ppb	5.96	1,797.96	4.801E-04	Pulse	0.30	3
Ba	137	159	3	98.309	ppb	0.39	887,162.69	1.459E-01	Pulse	0.30	3
Tl	205	209	3	0.022	ppb	8.89	2,076.92	5.682E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-32,525.00	-8.900E-03	Pulse	0.30	3
U	238	209	3	15.787	ppb	0.60	1,589,423.17	4.349E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,272,515.87	0.88	74.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	81,718.39	3.38	90.2	Pulse	0.30	3
3	Sc	45	2,459,299.84	0.14	103.2	Analog	0.30	3
1	Ge	72	61,966.03	1.58	88.6	Pulse	0.30	3
2	Ge	72	52,871.13	2.27	87.2	Pulse	0.30	3
2	Rh	103	1,499,534.82	1.85	82.0	Analog	0.30	3
3	Rh	103	3,267,898.08	0.18	88.2	Analog	0.30	3
3	In	115	3,744,707.08	0.27	93.7	Analog	0.30	3
3	Tb	159	6,080,192.96	0.67	95.1	Analog	0.30	3
3	Bi	209	3,654,685.08	0.83	85.6	Analog	0.30	3

Quantitation Report

File Name	A0516069.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:19
Sample Name	N019639-017B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.55	3.824E-06	Pulse	0.30	3
B	11	6	3	97.680	ppb	1.01	848,251.75	5.852E-01	Pulse	0.30	3
Na	23	45	2	53978.033	ppb	0.79	73,516,675.57	7.863E+02	Analog	0.30	3
Mg	26	45	2	11538.072	ppb	1.68	1,402,015.64	1.500E+01	Analog	0.30	3
Al	27	45	2	0.607	ppb	34.89	456.88	4.880E-03	Pulse	0.30	3
K	39	45	2	5588.733	ppb	0.79	2,200,518.37	2.354E+01	Analog	0.30	3
Ca	44	45	3	63902.416	ppb	0.38	86,993,252.04	3.084E+01	Analog	0.30	3
V	51	45	2	3.493	ppb	0.69	19,105.04	2.043E-01	Pulse	0.30	3
Cr	52	45	2	662.976	ppb	0.75	4,615,895.25	4.937E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,395.68	-2.563E-02	Pulse	0.30	3
Fe	56	45	2	4.349	ppb	1.06	28,128.83	3.008E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-44.13	-4.754E-04	Pulse	0.30	3
Ni	60	72	2	0.010	ppb	193.26	176.63	2.878E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,281.26	-2.078E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-133.53	-2.173E-03	Pulse	0.30	3
As	75	72	2	1.162	ppb	3.43	819.38	1.331E-02	Pulse	0.75	3
Se	78	72	1	0.570	ppb	11.11	195.56	2.707E-03	Pulse	0.30	3
Mo	95	103	2	2.187	ppb	3.59	8,813.88	5.085E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,940.56	-5.273E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-14,089.59	-3.325E-03	Pulse	0.30	3
Sb	121	115	3	0.034	ppb	6.76	1,116.76	2.635E-04	Pulse	0.30	3
Ba	137	159	3	159.632	ppb	1.49	1,645,362.75	2.369E-01	Analog	0.30	3
Tl	205	209	3	0.015	ppb	3.83	1,850.20	4.394E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-22,327.09	-5.303E-03	Pulse	0.30	3
U	238	209	3	16.173	ppb	0.65	1,875,745.12	4.455E-01	Analog	0.30	3

OLR

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,449,483.44	0.42	85.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	93,500.63	1.71	103.2	Pulse	0.30	3
3	Sc	45	2,820,903.57	0.40	118.4	Analog	0.30	3
1	Ge	72	72,300.56	1.74	103.3	Pulse	0.30	3
2	Ge	72	61,580.15	1.78	101.6	Pulse	0.30	3
2	Rh	103	1,732,794.59	1.14	94.8	Analog	0.30	3
3	Rh	103	3,679,839.63	0.15	99.3	Analog	0.30	3
3	In	115	4,237,378.08	0.11	106.1	Analog	0.30	3
3	Tb	159	6,944,949.20	0.40	108.6	Analog	0.30	3
3	Bi	209	4,210,296.78	0.51	98.7	Analog	0.30	3

Quantitation Report

File Name	A0516070.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:24
Sample Name	N019639-018B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	250.12	15.56	1.255E-05	Pulse	0.30	3
B	11	6	3	135.657	ppb	0.70	994,563.97	8.015E-01	Analog	0.30	3
Na	23	45	2	61983.053	ppb	0.48	72,133,736.15	9.028E+02	Analog	0.30	3
Mg	26	45	2	14287.533	ppb	0.38	1,483,775.45	1.857E+01	Analog	0.30	3
Al	27	45	2	1.404	ppb	18.37	558.73	6.985E-03	Pulse	0.30	3
K	39	45	2	4283.372	ppb	0.99	1,444,315.74	1.808E+01	Analog	0.30	3
Ca	44	45	3	67132.875	ppb	0.08	76,650,938.86	3.240E+01	Analog	0.30	3
V	51	45	2	2.758	ppb	1.18	13,069.00	1.636E-01	Pulse	0.30	3
Cr	52	45	2	0.788	ppb	2.26	5,298.99	6.631E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-1,756.85	-2.199E-02	Pulse	0.30	3
Fe	56	45	2	0.980	ppb	7.68	6,241.89	7.806E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-6.41	-8.495E-05	Pulse	0.30	3
Ni	60	72	2	0.037	ppb	15.65	225.86	4.293E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-240.31	-4.550E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-54.34	-1.019E-03	Pulse	0.30	3
As	75	72	2	0.940	ppb	8.34	567.58	1.080E-02	Pulse	0.75	3
Se	78	72	1	0.128	ppb	27.39	38.89	6.092E-04	Pulse	0.30	3
Mo	95	103	2	2.192	ppb	2.62	7,543.18	5.097E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,389.20	-4.403E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-13,999.06	-3.822E-03	Pulse	0.30	3
Sb	121	115	3	0.052	ppb	3.21	1,376.79	3.759E-04	Pulse	0.30	3
Ba	137	159	3	105.778	ppb	0.29	934,289.48	1.570E-01	Pulse	0.30	3
Tl	205	209	3	0.014	ppb	16.07	1,541.26	4.266E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-25,217.24	-6.977E-03	Pulse	0.30	3
U	238	209	3	44.010	ppb	0.33	4,381,821.68	1.212E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,240,966.59	0.92	72.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	79,898.15	2.64	88.2	Pulse	0.30	3
3	Sc	45	2,365,922.08	0.26	99.3	Analog	0.30	3
1	Ge	72	63,813.36	1.11	91.2	Pulse	0.30	3
2	Ge	72	52,639.22	2.80	86.8	Pulse	0.30	3
2	Rh	103	1,479,995.93	2.69	80.9	Analog	0.30	3
3	Rh	103	3,155,676.34	0.66	85.1	Analog	0.30	3
3	In	115	3,662,646.74	0.57	91.7	Analog	0.30	3
3	Tb	159	5,951,045.12	0.52	93.1	Analog	0.30	3
3	Bi	209	3,614,384.81	0.85	84.7	Analog	0.30	3

Quantitation Report

File Name	A0516071.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:30
Sample Name	N019639-019B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	69.32	37.78	2.832E-05	Pulse	0.30	3
B	11	6	3	244.464	ppb	1.13	1,896,184.87	1.421E+00	Analog	0.30	3
Na	23	45	2	89170.291	ppb	1.09	111,981,818.33	1.299E+03	Analog	0.30	3
Mg	26	45	2	18290.670	ppb	0.94	2,050,214.45	2.377E+01	Analog	0.30	3
Al	27	45	2	26.976	ppb	5.74	6,428.49	7.454E-02	Pulse	0.30	3
K	39	45	2	3891.811	ppb	1.61	1,417,167.39	1.644E+01	Analog	0.30	3
Ca	44	45	3	95472.953	ppb	0.44	116,698,367.15	4.607E+01	Analog	0.30	3
V	51	45	2	4.736	ppb	0.31	23,555.33	2.732E-01	Pulse	0.30	3
Cr	52	45	2	4.071	ppb	1.18	26,794.91	3.107E-01	Pulse	0.30	3
Mn	55	45	2	1.083	ppb	5.25	3,884.14	4.508E-02	Pulse	0.30	3
Fe	56	45	2	41.411	ppb	0.46	237,199.02	2.751E+00	Pulse	0.30	3
Co	59	45	2	0.020	ppb	28.06	276.00	3.196E-03	Pulse	0.30	3
Ni	60	72	2	0.029	ppb	102.36	215.58	3.882E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	196.88	3.547E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-95.50	-1.714E-03	Pulse	0.30	3
As	75	72	2	1.195	ppb	2.24	759.66	1.368E-02	Pulse	0.75	3
Se	78	72	1	0.142	ppb	38.50	44.45	6.750E-04	Pulse	0.30	3
Mo	95	103	2	2.090	ppb	1.68	7,601.02	4.861E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,622.39	-4.812E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-22,143.55	-5.663E-03	Pulse	0.30	3
Sb	121	115	3	0.022	ppb	14.64	723.38	1.849E-04	Pulse	0.30	3
Ba	137	159	3	73.170	ppb	0.27	692,392.59	1.086E-01	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	8.32	1,485.70	3.937E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-38,305.18	-1.015E-02	Pulse	0.30	3
U	238	209	3	49.885	ppb	0.33	5,184,191.56	1.374E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,334,388.33	1.11	78.3	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	86,229.79	2.56	95.2	Pulse	0.30	3
3	Sc	45	2,532,951.87	0.91	106.3	Analog	0.30	3
1	Ge	72	66,065.25	1.37	94.4	Pulse	0.30	3
2	Ge	72	55,509.67	2.27	91.5	Pulse	0.30	3
2	Rh	103	1,563,746.38	0.67	85.5	Analog	0.30	3
3	Rh	103	3,371,812.73	0.70	91.0	Analog	0.30	3
3	In	115	3,910,583.29	0.38	97.9	Analog	0.30	3
3	Tb	159	6,375,608.38	0.63	99.7	Analog	0.30	3
3	Bi	209	3,772,770.12	0.99	88.4	Analog	0.30	3

Quantitation Report

File Name	A0516072.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:35
Sample Name	MB-58351,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	449.10	11.11	9.188E-06	Pulse	0.30	3
B	11	6	3	3.165	ppb	6.27	56,898.60	4.705E-02	Pulse	0.30	3
Na	23	45	2	134.243	ppb	6.74	159,790.05	2.364E+00	Pulse	0.30	3
Mg	26	45	2	7.250	ppb	17.07	720.05	1.066E-02	Pulse	0.30	3
Al	27	45	2	1.812	ppb	8.42	545.52	8.063E-03	Pulse	0.30	3
K	39	45	2	10.895	ppb	32.20	13,727.36	2.032E-01	Pulse	0.30	3
Ca	44	45	3	21.698	ppb	3.96	26,534.33	1.423E-02	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	422.25	6.247E-03	Pulse	0.30	3
Cr	52	45	2	0.061	ppb	15.31	822.07	1.216E-02	Pulse	0.30	3
Mn	55	45	2	0.110	ppb	20.58	374.35	5.546E-03	Pulse	0.30	3
Fe	56	45	2	0.191	ppb	14.41	1,752.34	2.591E-02	Pulse	0.30	3
Co	59	45	2	0.003	ppb	45.35	60.91	9.023E-04	Pulse	0.30	3
Ni	60	72	2	0.069	ppb	20.48	290.82	5.994E-03	Pulse	0.30	3
Cu	63	72	2	0.014	ppb	29.44	775.29	1.597E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	577.00	1.187E-02	Pulse	0.30	3
As	75	72	2	0.009	ppb	191.28	14.67	2.999E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.008	ppb	58.68	46.67	3.229E-05	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	215.79	6.765E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	36.69	1.039E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	118.89	3.368E-05	Pulse	0.30	3
Ba	137	159	3	0.011	ppb	20.95	130.32	2.314E-05	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	581.15	1.533E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,217.40	3.215E-04	Pulse	0.30	3
U	238	209	3	0.000	ppb	139.76	165.96	4.387E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,209,458.50	0.23	71.0	Analog	0.30	3
2	Sc	45	67,624.43	1.67	74.6	Pulse	0.30	3
3	Sc	45	1,864,364.54	1.00	78.2	Analog	0.30	3
1	Ge	72	57,086.40	3.68	81.6	Pulse	0.30	3
2	Ge	72	48,530.98	2.40	80.0	Pulse	0.30	3
2	Rh	103	1,451,486.56	2.04	79.4	Analog	0.30	3
3	Rh	103	3,190,493.29	0.27	86.1	Analog	0.30	3
3	In	115	3,530,807.52	0.35	88.4	Analog	0.30	3
3	Tb	159	5,629,332.28	0.59	88.1	Analog	0.30	3
3	Bi	209	3,787,145.43	1.17	88.7	Analog	0.30	3

Quantitation Report

File Name	A0516073.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:41
Sample Name	N019639-002B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.55	4.719E-06	Pulse	0.30	3
B	11	6	3	12.242	ppb	0.47	115,762.89	9.873E-02	Pulse	0.30	3
Na	23	45	2	3641.640	ppb	1.63	3,653,524.04	5.343E+01	Analog	0.30	3
Mg	26	45	2	723.518	ppb	0.97	64,397.58	9.416E-01	Pulse	0.30	3
Al	27	45	2	7.327	ppb	7.96	1,549.28	2.264E-02	Pulse	0.30	3
K	39	45	2	187.024	ppb	2.90	64,262.91	9.399E-01	Pulse	0.30	3
Ca	44	45	3	3984.802	ppb	0.50	3,529,913.04	1.927E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	538.93	7.890E-03	Pulse	0.30	3
Cr	52	45	2	0.226	ppb	2.71	1,676.23	2.451E-02	Pulse	0.30	3
Mn	55	45	2	101.159	ppb	1.74	281,303.02	4.114E+00	Pulse	0.30	3
Fe	56	45	2	30.411	ppb	1.35	138,379.85	2.024E+00	Pulse	0.30	3
Co	59	45	2	0.002	ppb	64.68	53.10	7.810E-04	Pulse	0.30	3
Ni	60	72	2	0.019	ppb	5.21	161.18	3.324E-03	Pulse	0.30	3
Cu	63	72	2	0.031	ppb	66.33	896.45	1.851E-02	Pulse	0.30	3
Zn	66	72	2	1.047	ppb	13.26	1,784.91	3.684E-02	Pulse	0.30	3
As	75	72	2	0.041	ppb	15.48	32.25	6.659E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.017	ppb	25.44	76.67	5.331E-05	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	124.63	4.022E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-662.99	-1.893E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	134.45	3.840E-05	Pulse	0.30	3
Ba	137	159	3	6.836	ppb	0.68	57,013.60	1.015E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	546.70	1.436E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	189.00	4.976E-05	Pulse	0.30	3
U	238	209	3	0.105	ppb	2.81	11,153.89	2.930E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,172,523.76	1.28	68.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	68,404.67	3.32	75.5	Pulse	0.30	3
3	Sc	45	1,832,292.89	1.27	76.9	Analog	0.30	3
1	Ge	72	59,735.91	2.13	85.4	Pulse	0.30	3
2	Ge	72	48,484.17	1.37	80.0	Pulse	0.30	3
2	Rh	103	1,436,183.36	1.81	78.6	Analog	0.30	3
3	Rh	103	3,098,270.30	0.21	83.6	Analog	0.30	3
3	In	115	3,503,013.80	0.39	87.7	Analog	0.30	3
3	Tb	159	5,615,664.08	0.43	87.8	Analog	0.30	3
3	Bi	209	3,806,748.69	0.61	89.2	Analog	0.30	3

Quantitation Report

File Name	A0516074.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:46
Sample Name	N019639-005B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	4.44	3.683E-06	Pulse	0.30	3
B	11	6	3	9.777	ppb	1.23	102,295.04	8.470E-02	Pulse	0.30	3
Na	23	45	2	3881.148	ppb	0.81	4,016,985.74	5.692E+01	Analog	0.30	3
Mg	26	45	2	545.677	ppb	0.74	50,152.16	7.105E-01	Pulse	0.30	3
Al	27	45	2	0.648	ppb	33.44	351.69	4.989E-03	Pulse	0.30	3
K	39	45	2	109.790	ppb	0.42	43,539.94	6.168E-01	Pulse	0.30	3
Ca	44	45	3	2962.646	ppb	0.41	2,683,869.44	1.433E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	532.26	7.544E-03	Pulse	0.30	3
Cr	52	45	2	0.026	ppb	27.59	675.69	9.578E-03	Pulse	0.30	3
Mn	55	45	2	111.445	ppb	1.22	319,852.98	4.532E+00	Pulse	0.30	3
Fe	56	45	2	96.538	ppb	1.02	451,314.52	6.395E+00	Pulse	0.30	3
Co	59	45	2	0.007	ppb	20.17	96.27	1.365E-03	Pulse	0.30	3
Ni	60	72	2	0.020	ppb	42.55	169.65	3.410E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	611.78	1.232E-02	Pulse	0.30	3
Zn	66	72	2	52.036	ppb	1.71	59,238.46	1.190E+00	Pulse	0.30	3
As	75	72	2	0.493	ppb	5.90	286.97	5.762E-03	Pulse	0.75	3
Se	78	72	1	0.004	ppb	173.21	1.11	1.811E-05	Pulse	0.30	3
Mo	95	103	2	0.411	ppb	6.75	1,434.58	9.670E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	133.53	4.187E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-714.08	-1.990E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	114.45	3.189E-05	Pulse	0.30	3
Ba	137	159	3	5.772	ppb	0.39	49,388.18	8.573E-03	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	463.36	1.198E-04	Pulse	0.30	3
Pb	208	209	3	0.041	ppb	6.23	5,131.55	1.327E-03	Pulse	0.30	3
U	238	209	3	0.166	ppb	1.63	17,834.62	4.610E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,207,792.02	0.71	70.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	70,584.56	1.94	77.9	Pulse	0.30	3
3	Sc	45	1,872,513.20	1.44	78.6	Analog	0.30	3
1	Ge	72	61,811.98	0.99	88.3	Pulse	0.30	3
2	Ge	72	49,789.29	1.80	82.1	Pulse	0.30	3
2	Rh	103	1,483,111.56	1.13	81.1	Analog	0.30	3
3	Rh	103	3,186,544.64	0.47	86.0	Analog	0.30	3
3	In	115	3,587,539.32	0.81	89.8	Analog	0.30	3
3	Tb	159	5,760,949.98	0.50	90.1	Analog	0.30	3
3	Bi	209	3,868,494.73	0.22	90.7	Analog	0.30	3

Quantitation Report

File Name	A0516075.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:52
Sample Name	N019639-017B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	2.22	1.788E-06	Pulse	0.30	3
B	11	6	3	21.049	ppb	0.63	184,107.61	1.489E-01	Pulse	0.30	3
Na	23	45	2	13252.231	ppb	0.80	14,076,683.68	1.933E+02	Analog	0.30	3
Mg	26	45	2	2742.444	ppb	1.29	259,578.56	3.566E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	215.23	2.955E-03	Pulse	0.30	3
K	39	45	2	1358.313	ppb	1.55	425,097.62	5.840E+00	Pulse	0.30	3
Ca	44	45	3	17106.945	ppb	0.81	16,619,526.69	8.259E+00	Analog	0.30	3
V	51	45	2	0.821	ppb	5.54	4,099.56	5.630E-02	Pulse	0.30	3
Cr	52	45	2	164.908	ppb	0.98	894,460.88	1.229E+01	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-211.55	-2.902E-03	Pulse	0.30	3
Fe	56	45	2	1.517	ppb	2.67	8,272.33	1.136E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	8.94	1.194E-04	Pulse	0.30	3
Ni	60	72	2	0.008	ppb	240.71	140.40	2.741E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	264.76	5.162E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	646.39	1.258E-02	Pulse	0.30	3
As	75	72	2	0.309	ppb	3.54	189.00	3.678E-03	Pulse	0.75	3
Se	78	72	1	0.152	ppb	48.35	44.45	7.208E-04	Pulse	0.30	3
Mo	95	103	2	0.524	ppb	1.66	1,845.75	1.229E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-255.04	-7.879E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,610.17	-7.125E-04	Pulse	0.30	3
Sb	121	115	3	0.005	ppb	50.97	298.90	8.151E-05	Pulse	0.30	3
Ba	137	159	3	38.141	ppb	0.05	337,823.17	5.661E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	573.37	1.454E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-3,215.85	-8.156E-04	Pulse	0.30	3
U	238	209	3	3.608	ppb	0.18	391,948.38	9.941E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,236,648.27	0.70	72.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	72,813.05	2.29	80.4	Pulse	0.30	3
3	Sc	45	2,012,449.19	0.54	84.4	Analog	0.30	3
1	Ge	72	61,719.74	0.48	88.2	Pulse	0.30	3
2	Ge	72	51,401.95	1.73	84.8	Pulse	0.30	3
2	Rh	103	1,501,974.77	0.94	82.1	Analog	0.30	3
3	Rh	103	3,236,135.68	0.36	87.3	Analog	0.30	3
3	In	115	3,663,423.70	0.92	91.7	Analog	0.30	3
3	Tb	159	5,967,242.41	0.83	93.3	Analog	0.30	3
3	Bi	209	3,942,686.30	0.34	92.4	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0516076.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 13:57
Sample Name	N019639-018B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	4.441E-06	Pulse	0.30	3
B	11	6	3	24.525	ppb	1.98	209,892.44	1.687E-01	Pulse	0.30	3
Na	23	45	2	13371.240	ppb	0.68	14,414,140.62	1.951E+02	Analog	0.30	3
Mg	26	45	2	3016.656	ppb	1.00	289,772.85	3.922E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	234.49	3.173E-03	Pulse	0.30	3
K	39	45	2	917.578	ppb	0.64	295,238.81	3.996E+00	Pulse	0.30	3
Ca	44	45	3	15705.860	ppb	0.51	15,194,837.41	7.582E+00	Analog	0.30	3
V	51	45	2	0.565	ppb	0.28	3,112.65	4.213E-02	Pulse	0.30	3
Cr	52	45	2	0.169	ppb	7.04	1,497.81	2.027E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-227.56	-3.083E-03	Pulse	0.30	3
Fe	56	45	2	0.425	ppb	5.70	3,058.67	4.139E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	20.67	2.819E-04	Pulse	0.30	3
Ni	60	72	2	0.010	ppb	153.21	148.80	2.876E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	539.76	1.042E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	601.46	1.162E-02	Pulse	0.30	3
As	75	72	2	0.223	ppb	19.33	140.47	2.715E-03	Pulse	0.75	3
Se	78	72	1	0.016	ppb	115.96	4.44	7.396E-05	Pulse	0.30	3
Mo	95	103	2	0.428	ppb	4.62	1,519.03	1.007E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-172.52	-5.378E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,717.77	-7.420E-04	Pulse	0.30	3
Sb	121	115	3	0.008	ppb	24.05	357.80	9.774E-05	Pulse	0.30	3
Ba	137	159	3	22.080	ppb	0.48	194,840.45	3.278E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	552.26	1.422E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,247.36	-1.093E-03	Pulse	0.30	3
U	238	209	3	8.797	ppb	0.35	941,388.48	2.423E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,244,506.44	1.14	73.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	73,883.36	1.29	81.5	Pulse	0.30	3
3	Sc	45	2,004,009.52	0.88	84.1	Analog	0.30	3
1	Ge	72	60,883.33	1.95	87.0	Pulse	0.30	3
2	Ge	72	51,764.10	1.13	85.4	Pulse	0.30	3
2	Rh	103	1,509,747.81	1.56	82.6	Analog	0.30	3
3	Rh	103	3,208,320.58	1.55	86.6	Analog	0.30	3
3	In	115	3,663,151.66	0.83	91.7	Analog	0.30	3
3	Tb	159	5,944,207.97	0.85	93.0	Analog	0.30	3
3	Bi	209	3,884,463.69	0.67	91.0	Analog	0.30	3

Quantitation Report

File Name	A0516077.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:03
Sample Name	CCV5,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.490	ppb	0.98	160,869.16	1.164E-01	Pulse	0.30	3
B	11	6	3	192.836	ppb	0.91	1,557,113.00	1.127E+00	Analog	0.30	3
Na	23	45	2	226.546	ppb	2.55	304,313.66	3.708E+00	Pulse	0.30	3
Mg	26	45	2	199.560	ppb	1.89	21,388.72	2.606E-01	Pulse	0.30	3
Al	27	45	2	25.392	ppb	0.75	5,776.89	7.036E-02	Pulse	0.30	3
K	39	45	2	208.945	ppb	1.94	84,668.33	1.032E+00	Pulse	0.30	3
Ca	44	45	3	215.213	ppb	1.41	227,130.99	1.076E-01	Pulse	0.30	3
V	51	45	2	20.265	ppb	1.81	93,016.84	1.133E+00	Pulse	0.30	3
Cr	52	45	2	19.994	ppb	1.35	122,822.90	1.496E+00	Pulse	0.30	3
Mn	55	45	2	20.850	ppb	1.28	69,667.54	8.488E-01	Pulse	0.30	3
Fe	56	45	2	20.454	ppb	2.15	112,055.60	1.365E+00	Pulse	0.30	3
Co	59	45	2	20.473	ppb	1.37	232,403.07	2.831E+00	Pulse	0.30	3
Ni	60	72	2	19.486	ppb	0.99	59,691.32	1.045E+00	Pulse	0.30	3
Cu	63	72	2	19.220	ppb	0.84	166,429.74	2.914E+00	Pulse	0.30	3
Zn	66	72	2	19.304	ppb	0.82	25,688.52	4.497E-01	Pulse	0.30	3
As	75	72	2	20.681	ppb	1.35	13,338.44	2.335E-01	Pulse	0.75	3
Se	78	72	1	19.863	ppb	1.01	6,623.92	9.436E-02	Pulse	0.30	3
Mo	95	103	2	19.592	ppb	0.67	79,164.40	4.544E-02	Pulse	0.30	3
Ag	107	103	3	19.673	ppb	0.58	614,098.42	1.691E-01	Pulse	0.30	3
Cd	111	115	3	19.899	ppb	0.94	153,195.65	3.735E-02	Pulse	0.30	3
Sb	121	115	3	20.135	ppb	0.95	516,846.09	1.260E-01	Pulse	0.30	3
Ba	137	159	3	21.051	ppb	1.18	204,792.99	3.125E-02	Pulse	0.30	3
Tl	205	209	3	19.972	ppb	0.82	1,588,733.73	3.548E-01	Analog	0.30	3
Pb	208	209	3	20.177	ppb	0.35	2,198,770.03	4.910E-01	Pulse	0.30	3
U	238	209	3	19.893	ppb	1.16	2,454,002.57	5.480E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,381,634.12	0.57	81.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	82,095.65	2.54	90.6	Pulse	0.30	3
3	Sc	45	2,110,861.51	1.25	88.6	Analog	0.30	3
1	Ge	72	70,198.28	0.89	100.3	Pulse	0.30	3
2	Ge	72	57,118.59	2.12	94.2	Pulse	0.30	3
2	Rh	103	1,742,155.25	1.41	95.3	Analog	0.30	3
3	Rh	103	3,631,299.29	0.58	98.0	Analog	0.30	3
3	In	115	4,101,905.55	0.72	102.7	Analog	0.30	3
3	Tb	159	6,553,915.53	0.99	102.5	Analog	0.30	3
3	Bi	209	4,478,318.75	0.50	104.9	Analog	0.30	3

Quantitation Report

File Name	A0516078.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:09
Sample Name	CCB5,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	91.14	18.89	1.397E-05	Pulse	0.30	3
B	11	6	3	3.324	ppb	7.52	64,643.62	4.795E-02	Pulse	0.30	3
Na	23	45	2	16.162	ppb	6.87	51,212.96	6.452E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	66.67	8.375E-04	Pulse	0.30	3
Al	27	45	2	2.473	ppb	0.70	778.94	9.811E-03	Pulse	0.30	3
K	39	45	2	2.614	ppb	41.24	13,373.74	1.685E-01	Pulse	0.30	3
Ca	44	45	3	3.280	ppb	6.58	11,039.62	5.348E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	573.37	7.227E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	513.31	6.465E-03	Pulse	0.30	3
Mn	55	45	2	0.015	ppb	17.26	132.26	1.665E-03	Pulse	0.30	3
Fe	56	45	2	0.413	ppb	3.74	3,225.43	4.062E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	26.61	3.325E-04	Pulse	0.30	3
Ni	60	72	2	0.019	ppb	3.85	183.27	3.369E-03	Pulse	0.30	3
Cu	63	72	2	0.003	ppb	222.62	773.81	1.423E-02	Pulse	0.30	3
Zn	66	72	2	0.050	ppb	63.86	777.53	1.429E-02	Pulse	0.30	3
As	75	72	2	0.006	ppb	57.67	14.67	2.695E-04	Pulse	0.75	3
Se	78	72	1	0.004	ppb	173.21	1.11	1.685E-05	Pulse	0.30	3
Mo	95	103	2	0.022	ppb	51.77	107.78	6.425E-05	Pulse	0.30	3
Ag	107	103	3	0.038	ppb	15.56	1,458.71	4.093E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	67.48	1.717E-05	Pulse	0.30	3
Sb	121	115	3	0.029	ppb	1.60	905.62	2.303E-04	Pulse	0.30	3
Ba	137	159	3	0.026	ppb	3.09	290.22	4.606E-05	Pulse	0.30	3
Tl	205	209	3	0.008	ppb	11.70	1,353.46	3.163E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,432.02	3.346E-04	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.002	ppb	38.81	371.37	8.684E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,348,656.93	1.87	79.2	Analog	0.30	3
2	Sc	45	79,390.72	2.06	87.6	Pulse	0.30	3
3	Sc	45	2,064,528.70	0.86	86.6	Analog	0.30	3
1	Ge	72	66,109.95	1.30	94.5	Pulse	0.30	3
2	Ge	72	54,403.95	1.57	89.7	Pulse	0.30	3
2	Rh	103	1,682,363.57	1.31	92.0	Analog	0.30	3
3	Rh	103	3,564,720.99	0.22	96.2	Analog	0.30	3
3	In	115	3,932,410.92	0.72	98.4	Analog	0.30	3
3	Tb	159	6,301,211.09	0.37	98.6	Analog	0.30	3
3	Bi	209	4,279,347.50	0.48	100.3	Analog	0.30	3

Quantitation Report

File Name	A0516079.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:14
Sample Name	LLCCV2,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.506	ppb	4.24	4,215.16	3.030E-03	Pulse	0.30	3
B	11	6	3	2.514	ppb	4.86	60,279.91	4.334E-02	Pulse	0.30	3
Na	23	45	2	11.718	ppb	2.43	47,288.01	5.805E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	55.56	6.824E-04	Pulse	0.30	3
Al	27	45	2	9.210	ppb	0.56	2,249.13	2.761E-02	Pulse	0.30	3
K	39	45	2	1.131	ppb	73.46	13,220.19	1.623E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	6,739.44	3.199E-03	Pulse	0.30	3
V	51	45	2	1.026	ppb	2.23	5,511.15	6.766E-02	Pulse	0.30	3
Cr	52	45	2	1.011	ppb	2.64	6,756.07	8.295E-02	Pulse	0.30	3
Mn	55	45	2	0.561	ppb	1.83	1,945.80	2.389E-02	Pulse	0.30	3
Fe	56	45	2	10.434	ppb	1.13	57,268.93	7.030E-01	Pulse	0.30	3
Co	59	45	2	0.510	ppb	1.35	5,775.67	7.090E-02	Pulse	0.30	3
Ni	60	72	2	1.062	ppb	3.30	3,368.19	5.917E-02	Pulse	0.30	3
Cu	63	72	2	0.975	ppb	0.20	9,156.79	1.609E-01	Pulse	0.30	3
Zn	66	72	2	10.053	ppb	1.40	13,688.19	2.405E-01	Pulse	0.30	3
As	75	72	2	0.110	ppb	11.33	81.78	1.436E-03	Pulse	0.75	3
Se	78	72	1	0.569	ppb	9.16	185.57	2.705E-03	Pulse	0.30	3
Mo	95	103	2	0.517	ppb	0.92	2,110.24	1.212E-03	Pulse	0.30	3
Ag	107	103	3	0.282	ppb	8.40	9,169.49	2.507E-03	Pulse	0.30	3
Cd	111	115	3	0.545	ppb	6.63	4,254.57	1.053E-03	Pulse	0.30	3
Sb	121	115	3	0.540	ppb	3.35	13,858.88	3.429E-03	Pulse	0.30	3
Ba	137	159	3	1.113	ppb	2.11	10,777.72	1.659E-03	Pulse	0.30	3
Tl	205	209	3	0.448	ppb	1.67	35,799.81	8.134E-03	Pulse	0.30	3
Pb	208	209	3	1.061	ppb	0.21	114,978.74	2.612E-02	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.507	ppb	0.85	61,604.07	1.400E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,390,899.82	0.69	81.7	Analog	0.30	3
2	Sc	45	81,461.80	1.13	89.9	Pulse	0.30	3
3	Sc	45	2,106,520.07	0.11	88.4	Analog	0.30	3
1	Ge	72	68,557.90	1.62	98.0	Pulse	0.30	3
2	Ge	72	56,904.86	1.75	93.8	Pulse	0.30	3
2	Rh	103	1,741,437.18	1.12	95.2	Analog	0.30	3
3	Rh	103	3,656,544.63	0.53	98.7	Analog	0.30	3
3	In	115	4,041,902.24	0.93	101.2	Analog	0.30	3
3	Tb	159	6,497,018.44	0.22	101.6	Analog	0.30	3
3	Bi	209	4,401,182.51	0.59	103.1	Analog	0.30	3

Quantitation Report

File Name	A0516080.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:20
Sample Name	ICSA3,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	96.63	26.67	1.598E-05	Pulse	0.30	3
B	11	6	3	<0.000	ppb	---	37,441.54	2.243E-02	Pulse	0.30	3
Na	23	45	2	93448.397	ppb	1.22	128,856,942.52	1.361E+03	Analog	0.30	3
Mg	26	45	2	95933.767	ppb	1.62	11,804,010.80	1.247E+02	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	272.90	2.871E-03	Pulse	0.30	3
K	39	45	2	103691.403	ppb	0.62	41,087,818.55	4.339E+02	Analog	0.30	3
Ca	44	45	3	93072.453	ppb	0.28	121,911,743.74	4.491E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	537.81	5.686E-03	Pulse	0.30	3
Cr	52	45	2	0.161	ppb	8.13	1,860.76	1.967E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-14,404.64	-1.522E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-4,285.21	-4.532E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-47.64	-4.894E-04	Pulse	0.30	3
Ni	60	72	2	0.135	ppb	12.35	572.23	9.566E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-4,594.36	-7.665E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-305.16	-5.107E-03	Pulse	0.30	3
As	75	72	2	0.004	ppb	29.87	14.37	2.401E-04	Pulse	0.75	3
Se	78	72	1	0.032	ppb	88.75	10.00	1.524E-04	Pulse	0.30	3
Mo	95	103	2	0.028	ppb	12.61	130.01	7.944E-05	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-28,297.77	-7.756E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-26,834.92	-6.581E-03	Pulse	0.30	3
Sb	121	115	3	0.013	ppb	7.54	532.26	1.305E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-90,876.91	-1.419E-02	Pulse	0.30	3
Tl	205	209	3	0.014	ppb	2.19	1,509.04	4.260E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-127,603.48	-3.602E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-7,217.82	-2.038E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,669,190.41	0.89	98.0	Analog	0.30	3
2	Sc	45	94,700.82	4.12	104.5	Pulse	0.30	3
3	Sc	45	2,714,327.57	0.68	113.9	Analog	0.30	3
1	Ge	72	66,609.78	2.80	95.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	59,908.75	2.70	98.8	Pulse	0.30	3
2	Rh	103	1,633,857.22	2.64	89.4	Analog	0.30	3
3	Rh	103	3,648,745.61	0.55	98.4	Analog	0.30	3
3	In	115	4,077,487.80	0.19	102.1	Analog	0.30	3
3	Tb	159	6,406,423.52	0.19	100.2	Analog	0.30	3
3	Bi	209	3,542,352.97	0.51	83.0	Analog	0.30	3

Quantitation Report

File Name	A0516081.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:25
Sample Name	ICSAB3,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	18.875	ppb	1.11	188,880.04	1.128E-01	Pulse	0.30	3
B	11	6	3	187.106	ppb	0.51	1,833,362.30	1.094E+00	Analog	0.30	3
Na	23	45	2	89336.425	ppb	0.40	127,542,246.99	1.301E+03	Analog	0.30	3
Mg	26	45	2	92218.488	ppb	0.46	11,749,949.96	1.199E+02	Analog	0.30	3
Al	27	45	2	23.941	ppb	1.43	6,522.46	6.653E-02	Pulse	0.30	3
K	39	45	2	100005.091	ppb	0.65	41,026,103.28	4.185E+02	Analog	0.30	3
Ca	44	45	3	91396.643	ppb	0.64	122,176,927.07	4.411E+01	Analog	0.30	3
V	51	45	2	20.225	ppb	0.42	110,887.40	1.131E+00	Pulse	0.30	3
Cr	52	45	2	19.155	ppb	0.46	140,562.02	1.434E+00	Pulse	0.30	3
Mn	55	45	2	21.334	ppb	2.58	85,160.62	8.685E-01	Pulse	0.30	3
Fe	56	45	2	17.879	ppb	0.20	117,152.45	1.195E+00	Pulse	0.30	3
Co	59	45	2	18.261	ppb	0.37	247,568.78	2.525E+00	Pulse	0.30	3
Ni	60	72	2	18.683	ppb	1.23	60,842.35	1.002E+00	Pulse	0.30	3
Cu	63	72	2	17.129	ppb	0.85	157,761.48	2.599E+00	Pulse	0.30	3
Zn	66	72	2	16.998	ppb	1.23	24,141.86	3.976E-01	Pulse	0.30	3
As	75	72	2	19.742	ppb	2.19	13,532.34	2.229E-01	Pulse	0.75	3
Se	78	72	1	18.111	ppb	2.00	6,079.18	8.604E-02	Pulse	0.30	3
Mo	95	103	2	22.490	ppb	1.18	86,457.60	5.216E-02	Pulse	0.30	3
Ag	107	103	3	18.205	ppb	1.22	576,558.76	1.565E-01	Pulse	0.30	3
Cd	111	115	3	16.161	ppb	12.03	124,640.98	3.034E-02	Pulse	0.30	3
Sb	121	115	3	20.162	ppb	0.20	518,352.81	1.262E-01	Pulse	0.30	3
Ba	137	159	3	18.198	ppb	9.68	171,021.86	2.702E-02	Pulse	0.30	3
Tl	205	209	3	21.715	ppb	1.25	1,351,464.93	3.857E-01	Mix	0.30	3
Pb	208	209	3	20.292	ppb	1.19	1,730,180.69	4.938E-01	Pulse	0.30	3
U	238	209	3	21.946	ppb	1.23	2,118,118.54	6.045E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,675,118.54	1.37	98.4	Analog	0.30	3
2	Sc	45	98,024.37	2.31	108.2	Pulse	0.30	3
3	Sc	45	2,770,225.24	1.33	116.2	Analog	0.30	3
1	Ge	72	70,641.04	1.46	101.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	60,722.55	3.66	100.1	Pulse	0.30	3
2	Rh	103	1,657,616.07	1.93	90.7	Analog	0.30	3
3	Rh	103	3,684,042.86	0.37	99.4	Analog	0.30	3
3	In	115	4,108,093.28	0.54	102.8	Analog	0.30	3
3	Tb	159	6,330,401.57	0.08	99.0	Analog	0.30	3
3	Bi	209	3,503,796.16	0.38	82.1	Analog	0.30	3

Quantitation Report

File Name	A0516082.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:30
Sample Name	N019610-010B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	7.78	6.211E-06	Pulse	0.30	3
B	11	6	3	64.351	ppb	0.72	495,778.16	3.954E-01	Pulse	0.30	3
Na	23	45	2	13522.249	ppb	0.44	15,634,474.63	1.973E+02	Analog	0.30	3
Mg	26	45	2	2780.663	ppb	0.22	286,508.61	3.615E+00	Pulse	0.30	3
Al	27	45	2	1.705	ppb	41.88	617.12	7.782E-03	Pulse	0.30	3
K	39	45	2	936.801	ppb	0.87	323,043.29	4.076E+00	Pulse	0.30	3
Ca	44	45	3	17199.494	ppb	0.08	17,597,342.93	8.303E+00	Analog	0.30	3
V	51	45	2	0.822	ppb	3.60	4,465.26	5.634E-02	Pulse	0.30	3
Cr	52	45	2	40.816	ppb	0.37	241,442.39	3.047E+00	Pulse	0.30	3
Mn	55	45	2	7.949	ppb	1.39	25,695.11	3.242E-01	Pulse	0.30	3
Fe	56	45	2	2.677	ppb	3.89	15,079.16	1.903E-01	Pulse	0.30	3
Co	59	45	2	0.014	ppb	37.44	187.43	2.363E-03	Pulse	0.30	3
Ni	60	72	2	0.193	ppb	15.39	644.43	1.266E-02	Pulse	0.30	3
Cu	63	72	2	0.053	ppb	7.47	1,109.85	2.179E-02	Pulse	0.30	3
Zn	66	72	2	0.416	ppb	81.10	1,144.28	2.256E-02	Pulse	0.30	3
As	75	72	2	0.285	ppb	16.71	173.37	3.410E-03	Pulse	0.75	3
Se	78	72	1	0.018	ppb	92.09	5.56	8.576E-05	Pulse	0.30	3
Mo	95	103	2	1.697	ppb	9.76	6,016.93	3.949E-03	Pulse	0.30	3
Ag	107	103	3	0.015	ppb	19.39	703.34	2.127E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,958.76	-7.886E-04	Pulse	0.30	3
Sb	121	115	3	0.019	ppb	8.60	628.93	1.676E-04	Pulse	0.30	3
Ba	137	159	3	17.122	ppb	0.51	155,122.61	2.542E-02	Pulse	0.30	3
Tl	205	209	3	0.004	ppb	28.49	1,016.75	2.536E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,733.45	-1.181E-03	Pulse	0.30	3
U	238	209	3	5.050	ppb	0.90	557,890.22	1.392E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,253,747.99	0.41	73.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	79,248.64	0.51	87.5	Pulse	0.30	3
3	Sc	45	2,119,356.81	0.65	88.9	Analog	0.30	3
1	Ge	72	64,736.73	1.06	92.5	Pulse	0.30	3
2	Ge	72	50,945.07	2.10	84.0	Pulse	0.30	3
2	Rh	103	1,523,810.31	0.10	83.3	Analog	0.30	3
3	Rh	103	3,305,438.70	0.23	89.2	Analog	0.30	3
3	In	115	3,752,016.16	0.39	93.9	Analog	0.30	3
3	Tb	159	6,102,628.66	0.72	95.5	Analog	0.30	3
3	Bi	209	4,009,150.29	0.26	93.9	Analog	0.30	3

Quantitation Report

File Name	A0516083.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:35
Sample Name	N019610-011B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	81.89	15.55	1.238E-05	Pulse	0.30	3
B	11	6	3	56.468	ppb	3.07	441,043.75	3.506E-01	Pulse	0.30	3
Na	23	45	2	14346.677	ppb	1.10	15,811,877.68	2.093E+02	Analog	0.30	3
Mg	26	45	2	3240.211	ppb	1.50	318,263.74	4.213E+00	Pulse	0.30	3
Al	27	45	2	5.501	ppb	7.89	1,346.17	1.781E-02	Pulse	0.30	3
K	39	45	2	765.917	ppb	1.12	253,965.11	3.361E+00	Pulse	0.30	3
Ca	44	45	3	18241.330	ppb	0.76	18,296,300.42	8.806E+00	Analog	0.30	3
V	51	45	2	0.886	ppb	6.42	4,523.03	5.989E-02	Pulse	0.30	3
Cr	52	45	2	72.808	ppb	1.07	410,146.25	5.429E+00	Pulse	0.30	3
Mn	55	45	2	34.402	ppb	1.53	105,753.32	1.400E+00	Pulse	0.30	3
Fe	56	45	2	7.611	ppb	0.97	39,019.66	5.164E-01	Pulse	0.30	3
Co	59	45	2	0.011	ppb	34.05	152.53	2.018E-03	Pulse	0.30	3
Ni	60	72	2	0.208	ppb	5.13	693.24	1.346E-02	Pulse	0.30	3
Cu	63	72	2	0.081	ppb	4.22	1,337.77	2.598E-02	Pulse	0.30	3
Zn	66	72	2	0.293	ppb	24.85	1,018.20	1.978E-02	Pulse	0.30	3
As	75	72	2	0.386	ppb	6.86	234.61	4.557E-03	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.813	ppb	2.61	2,940.40	1.900E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	65.04	1.971E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,960.23	-7.850E-04	Pulse	0.30	3
Sb	121	115	3	0.008	ppb	24.08	376.69	9.987E-05	Pulse	0.30	3
Ba	137	159	3	27.230	ppb	0.56	248,758.40	4.042E-02	Pulse	0.30	3
Tl	205	209	3	0.001	ppb	113.92	797.83	1.976E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,683.52	-1.160E-03	Pulse	0.30	3
U	238	209	3	4.770	ppb	0.33	530,693.04	1.314E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,258,363.61	1.00	73.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	75,560.87	1.74	83.4	Pulse	0.30	3
3	Sc	45	2,077,844.97	1.09	87.2	Analog	0.30	3
1	Ge	72	60,881.77	0.61	87.0	Pulse	0.30	3
2	Ge	72	51,493.42	0.88	84.9	Pulse	0.30	3
2	Rh	103	1,547,850.50	1.27	84.7	Analog	0.30	3
3	Rh	103	3,294,163.04	0.38	88.9	Analog	0.30	3
3	In	115	3,770,961.76	0.22	94.4	Analog	0.30	3
3	Tb	159	6,154,359.14	0.35	96.3	Analog	0.30	3
3	Bi	209	4,037,792.44	0.41	94.6	Analog	0.30	3

Quantitation Report

File Name	A0516084.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:41
Sample Name	N019610-012B,SAMP,50
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	3655.23	11.11	8.709E-06	Pulse	0.30	3
B	11	6	3	10.005	ppb	3.43	109,887.18	8.599E-02	Pulse	0.30	3
Na	23	45	2	1503.209	ppb	1.86	1,692,691.61	2.230E+01	Analog	0.30	3
Mg	26	45	2	287.809	ppb	2.29	28,503.91	3.753E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	142.73	1.875E-03	Pulse	0.30	3
K	39	45	2	81.242	ppb	1.66	37,772.50	4.974E-01	Pulse	0.30	3
Ca	44	45	3	1535.005	ppb	0.85	1,502,656.45	7.445E-01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	580.04	7.650E-03	Pulse	0.30	3
Cr	52	45	2	0.031	ppb	46.85	752.94	9.926E-03	Pulse	0.30	3
Mn	55	45	2	118.544	ppb	1.75	366,009.09	4.821E+00	Pulse	0.30	3
Fe	56	45	2	78.609	ppb	2.11	395,511.61	5.210E+00	Pulse	0.30	3
Co	59	45	2	0.012	ppb	17.25	157.11	2.072E-03	Pulse	0.30	3
Ni	60	72	2	0.151	ppb	9.01	546.70	1.042E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	631.26	1.203E-02	Pulse	0.30	3
Zn	66	72	2	0.056	ppb	105.56	757.39	1.444E-02	Pulse	0.30	3
As	75	72	2	1.891	ppb	7.08	1,129.75	2.153E-02	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	1.817	ppb	4.09	6,862.90	4.226E-03	Pulse	0.30	3
Ag	107	103	3	0.001	ppb	65.77	311.70	9.047E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-241.00	-6.188E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	153.34	3.937E-05	Pulse	0.30	3
Ba	137	159	3	9.510	ppb	0.26	88,434.74	1.412E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	737.83	1.728E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	603.26	1.413E-04	Pulse	0.30	3
U	238	209	3	0.192	ppb	2.90	22,764.12	5.332E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,277,857.27	0.58	75.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	75,942.42	2.40	83.8	Pulse	0.30	3
3	Sc	45	2,018,527.73	0.75	84.7	Analog	0.30	3
1	Ge	72	62,998.80	0.37	90.0	Pulse	0.30	3
2	Ge	72	52,476.26	0.38	86.5	Pulse	0.30	3
2	Rh	103	1,623,657.09	0.56	88.8	Analog	0.30	3
3	Rh	103	3,444,777.34	0.53	92.9	Analog	0.30	3
3	In	115	3,894,777.64	0.26	97.5	Analog	0.30	3
3	Tb	159	6,262,486.16	0.39	98.0	Analog	0.30	3
3	Bi	209	4,268,958.96	0.01	100.0	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

Mn only

File Name	A0516085.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:47
Sample Name	N019610-013B,SAMP,50
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	5.218E-06	Pulse	0.30	3
B	11	6	3	8.190	ppb	4.22	97,213.28	7.566E-02	Pulse	0.30	3
Na	23	45	2	1537.670	ppb	0.71	1,728,422.48	2.280E+01	Analog	0.30	3
Mg	26	45	2	295.458	ppb	1.16	29,207.26	3.852E-01	Pulse	0.30	3
Al	27	45	2	0.356	ppb	61.67	319.33	4.218E-03	Pulse	0.30	3
K	39	45	2	83.313	ppb	4.73	38,357.08	5.061E-01	Pulse	0.30	3
Ca	44	45	3	1547.165	ppb	0.48	1,526,518.73	7.503E-01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	591.15	7.801E-03	Pulse	0.30	3
Cr	52	45	2	0.018	ppb	28.90	681.73	8.996E-03	Pulse	0.30	3
Mn	55	45	2	121.885	ppb	1.27	375,790.78	4.957E+00	Pulse	0.30	3
Fe	56	45	2	80.529	ppb	1.13	404,589.45	5.337E+00	Pulse	0.30	3
Co	59	45	2	0.013	ppb	26.12	173.78	2.297E-03	Pulse	0.30	3
Ni	60	72	2	0.172	ppb	9.61	612.17	1.153E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	611.57	1.153E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	610.74	1.150E-02	Pulse	0.30	3
As	75	72	2	1.775	ppb	0.88	1,073.30	2.022E-02	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	1.857	ppb	2.73	7,044.06	4.319E-03	Pulse	0.30	3
Ag	107	103	3	0.000	ppb	5225.38	289.97	8.403E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-253.58	-6.471E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	153.34	3.911E-05	Pulse	0.30	3
Ba	137	159	3	9.539	ppb	0.95	89,175.32	1.416E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	680.05	1.588E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	639.81	1.494E-04	Pulse	0.30	3
U	238	209	3	0.191	ppb	0.57	22,732.78	5.309E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,285,082.13	1.23	75.5	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	75,825.31	2.06	83.7	Pulse	0.30	3
3	Sc	45	2,034,540.94	1.31	85.4	Analog	0.30	3
1	Ge	72	63,377.01	0.83	90.6	Pulse	0.30	3
2	Ge	72	53,083.87	0.88	87.5	Pulse	0.30	3
2	Rh	103	1,630,524.99	1.63	89.2	Analog	0.30	3
3	Rh	103	3,451,082.76	0.24	93.1	Analog	0.30	3
3	In	115	3,916,470.32	0.95	98.0	Analog	0.30	3
3	Tb	159	6,295,914.63	0.43	98.5	Analog	0.30	3
3	Bi	209	4,281,625.14	0.49	100.3	Analog	0.30	3

Quantitation Report

File Name	A0516086.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:53
Sample Name	N019610-013B-MS,MS,50
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.213	ppb	5.09	1,664.60	1.283E-03	Pulse	0.30	3
B	11	6	3	44.548	ppb	0.51	366,649.67	2.827E-01	Pulse	0.30	3
Na	23	45	2	1459.536	ppb	1.47	1,692,204.61	2.166E+01	Analog	0.30	3
Mg	26	45	2	284.127	ppb	1.29	28,949.03	3.705E-01	Pulse	0.30	3
Al	27	45	2	3.185	ppb	11.87	913.84	1.169E-02	Pulse	0.30	3
K	39	45	2	81.225	ppb	2.60	38,856.05	4.974E-01	Pulse	0.30	3
Ca	44	45	3	1499.892	ppb	1.12	1,489,659.89	7.275E-01	Analog	0.30	3
V	51	45	2	0.146	ppb	8.46	1,475.69	1.888E-02	Pulse	0.30	3
Cr	52	45	2	0.223	ppb	9.19	1,898.61	2.428E-02	Pulse	0.30	3
Mn	55	45	2	118.571	ppb	0.79	376,754.09	4.822E+00	Pulse	0.30	3
Fe	56	45	2	79.519	ppb	0.94	411,750.44	5.270E+00	Pulse	0.30	3
Co	59	45	2	0.224	ppb	3.33	2,460.70	3.148E-02	Pulse	0.30	3
Ni	60	72	2	0.343	ppb	12.04	1,131.11	2.066E-02	Pulse	0.30	3
Cu	63	72	2	0.189	ppb	6.82	2,319.97	4.236E-02	Pulse	0.30	3
Zn	66	72	2	1.988	ppb	7.57	3,185.36	5.812E-02	Pulse	0.30	3
As	75	72	2	1.976	ppb	2.66	1,231.54	2.249E-02	Pulse	0.75	3
Se	78	72	1	0.208	ppb	13.81	64.45	9.889E-04	Pulse	0.30	3
Mo	95	103	2	2.031	ppb	1.35	7,797.78	4.724E-03	Pulse	0.30	3
Ag	107	103	3	0.003	ppb	4.68	368.68	1.062E-04	Pulse	0.30	3
Cd	111	115	3	0.173	ppb	1.52	1,397.21	3.544E-04	Pulse	0.30	3
Sb	121	115	3	0.210	ppb	2.30	5,357.82	1.359E-03	Pulse	0.30	3
Ba	137	159	3	11.634	ppb	0.85	109,269.48	1.727E-02	Pulse	0.30	3
Tl	205	209	3	0.186	ppb	2.78	14,931.42	3.489E-03	Pulse	0.30	3
Pb	208	209	3	0.204	ppb	1.35	22,661.04	5.296E-03	Pulse	0.30	3
U	238	209	3	0.399	ppb	1.29	47,167.41	1.102E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,297,040.73	0.09	76.2	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	78,141.24	1.76	86.2	Pulse	0.30	3
3	Sc	45	2,047,765.96	1.17	85.9	Analog	0.30	3
1	Ge	72	65,219.79	0.95	93.2	Pulse	0.30	3
2	Ge	72	54,778.53	1.29	90.3	Pulse	0.30	3
2	Rh	103	1,650,854.92	0.84	90.3	Analog	0.30	3
3	Rh	103	3,473,223.25	0.62	93.7	Analog	0.30	3
3	In	115	3,942,079.69	0.84	98.7	Analog	0.30	3
3	Tb	159	6,326,054.77	0.45	99.0	Analog	0.30	3
3	Bi	209	4,279,038.51	0.67	100.3	Analog	0.30	3

Quantitation Report

File Name	A0516087.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 14:59
Sample Name	N019610-014B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	232.64	13.34	1.039E-05	Pulse	0.30	3
B	11	6	3	38.115	ppb	1.59	315,105.34	2.461E-01	Pulse	0.30	3
Na	23	45	2	16166.409	ppb	1.25	18,565,712.78	2.358E+02	Analog	0.30	3
Mg	26	45	2	2500.484	ppb	1.01	256,016.53	3.251E+00	Pulse	0.30	3
Al	27	45	2	0.087	ppb	115.87	276.71	3.508E-03	Pulse	0.30	3
K	39	45	2	623.294	ppb	1.26	217,725.18	2.765E+00	Pulse	0.30	3
Ca	44	45	3	14439.187	ppb	0.66	14,793,780.75	6.971E+00	Analog	0.30	3
V	51	45	2	1.218	ppb	4.23	6,162.53	7.827E-02	Pulse	0.30	3
Cr	52	45	2	58.422	ppb	1.82	343,086.84	4.358E+00	Pulse	0.30	3
Mn	55	45	2	0.480	ppb	4.67	1,621.68	2.057E-02	Pulse	0.30	3
Fe	56	45	2	1.024	ppb	4.60	6,379.27	8.102E-02	Pulse	0.30	3
Co	59	45	2	0.006	ppb	63.55	101.80	1.299E-03	Pulse	0.30	3
Ni	60	72	2	0.176	ppb	27.26	618.76	1.173E-02	Pulse	0.30	3
Cu	63	72	2	0.030	ppb	3.22	974.27	1.839E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	603.73	1.140E-02	Pulse	0.30	3
As	75	72	2	0.175	ppb	12.24	114.79	2.172E-03	Pulse	0.75	3
Se	78	72	1	0.069	ppb	50.04	20.00	3.265E-04	Pulse	0.30	3
Mo	95	103	2	0.657	ppb	5.98	2,440.30	1.536E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-30.42	-8.961E-06	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-3,460.18	-8.886E-04	Pulse	0.30	3
Sb	121	115	3	0.004	ppb	55.63	285.57	7.337E-05	Pulse	0.30	3
Ba	137	159	3	13.831	ppb	0.36	130,079.65	2.053E-02	Pulse	0.30	3
Tl	205	209	3	0.001	ppb	103.80	797.83	1.930E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-6,012.18	-1.454E-03	Pulse	0.30	3
U	238	209	3	3.283	ppb	0.47	374,034.03	9.046E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,280,710.54	0.73	75.2	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	78,760.98	2.83	86.9	Pulse	0.30	3
3	Sc	45	2,122,247.24	1.37	89.1	Analog	0.30	3
1	Ge	72	61,154.45	1.60	87.4	Pulse	0.30	3
2	Ge	72	52,970.29	2.91	87.4	Pulse	0.30	3
2	Rh	103	1,588,199.02	1.12	86.9	Analog	0.30	3
3	Rh	103	3,392,842.31	0.41	91.5	Analog	0.30	3
3	In	115	3,894,087.69	0.86	97.5	Analog	0.30	3
3	Tb	159	6,334,575.39	0.16	99.1	Analog	0.30	3
3	Bi	209	4,134,596.01	0.47	96.9	Analog	0.30	3

Quantitation Report

File Name	A0516088.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:04
Sample Name	N019610-015B,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	205.93	16.67	1.308E-05	Pulse	0.30	3
B	11	6	3	21.749	ppb	0.71	195,305.21	1.529E-01	Pulse	0.30	3
Na	23	45	2	9274.685	ppb	1.69	10,454,138.25	1.354E+02	Analog	0.30	3
Mg	26	45	2	1805.555	ppb	0.69	181,253.16	2.348E+00	Pulse	0.30	3
Al	27	45	2	8.765	ppb	2.88	2,039.93	2.643E-02	Pulse	0.30	3
K	39	45	2	432.386	ppb	2.00	151,759.62	1.966E+00	Pulse	0.30	3
Ca	44	45	3	10277.538	ppb	0.28	10,352,217.00	4.963E+00	Analog	0.30	3
V	51	45	2	0.476	ppb	4.55	2,871.48	3.720E-02	Pulse	0.30	3
Cr	52	45	2	141.009	ppb	1.29	810,981.47	1.051E+01	Pulse	0.30	3
Mn	55	45	2	1.572	ppb	2.93	5,019.50	6.499E-02	Pulse	0.30	3
Fe	56	45	2	12.029	ppb	0.58	62,421.03	8.084E-01	Pulse	0.30	3
Co	59	45	2	0.007	ppb	32.01	108.98	1.416E-03	Pulse	0.30	3
Ni	60	72	2	0.109	ppb	12.79	438.07	8.155E-03	Pulse	0.30	3
Cu	63	72	2	0.019	ppb	60.73	897.51	1.673E-02	Pulse	0.30	3
Zn	66	72	2	0.114	ppb	51.78	844.59	1.575E-02	Pulse	0.30	3
As	75	72	2	0.101	ppb	23.53	71.46	1.332E-03	Pulse	0.75	3
Se	78	72	1	0.022	ppb	49.34	6.67	1.053E-04	Pulse	0.30	3
Mo	95	103	2	0.315	ppb	2.44	1,200.10	7.440E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	71.84	2.103E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,921.44	-4.926E-04	Pulse	0.30	3
Sb	121	115	3	0.001	ppb	195.93	211.12	5.412E-05	Pulse	0.30	3
Ba	137	159	3	6.943	ppb	1.33	65,254.19	1.031E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	634.48	1.514E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,267.22	-5.410E-04	Pulse	0.30	3
U	238	209	3	3.841	ppb	0.43	443,544.04	1.058E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,277,688.33	0.76	75.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	77,203.79	2.63	85.2	Pulse	0.30	3
3	Sc	45	2,085,859.32	0.22	87.5	Analog	0.30	3
1	Ge	72	63,110.49	0.87	90.2	Pulse	0.30	3
2	Ge	72	53,677.97	1.19	88.5	Pulse	0.30	3
2	Rh	103	1,612,859.99	2.06	88.2	Analog	0.30	3
3	Rh	103	3,415,472.24	0.06	92.2	Analog	0.30	3
3	In	115	3,900,378.78	0.26	97.6	Analog	0.30	3
3	Tb	159	6,328,512.55	0.09	99.0	Analog	0.30	3
3	Bi	209	4,191,035.63	0.66	98.2	Analog	0.30	3

Quantitation Report

File Name	A0516089.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:09
Sample Name	N019611-001B,SAMP,5
Sample Type	Sample -002B
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	795.25	12.22	9.640E-06	Pulse	0.30	3
B	11	6	3	69.380	ppb	0.48	538,881.82	4.241E-01	Pulse	0.30	3
Na	23	45	2	16314.115	ppb	1.15	17,538,123.21	2.379E+02	Analog	0.30	3
Mg	26	45	2	3085.953	ppb	1.38	295,732.77	4.012E+00	Pulse	0.30	3
Al	27	45	2	0.775	ppb	15.49	392.75	5.324E-03	Pulse	0.30	3
K	39	45	2	807.990	ppb	0.62	260,780.77	3.537E+00	Pulse	0.30	3
Ca	44	45	3	17524.217	ppb	0.24	17,768,952.23	8.460E+00	Analog	0.30	3
V	51	45	2	0.951	ppb	3.40	4,681.98	6.349E-02	Pulse	0.30	3
Cr	52	45	2	65.964	ppb	0.66	362,603.08	4.919E+00	Pulse	0.30	3
Mn	55	45	2	0.240	ppb	17.92	798.18	1.082E-02	Pulse	0.30	3
Fe	56	45	2	1.497	ppb	1.39	8,275.77	1.123E-01	Pulse	0.30	3
Co	59	45	2	0.005	ppb	38.99	88.38	1.196E-03	Pulse	0.30	3
Ni	60	72	2	0.250	ppb	13.74	789.98	1.570E-02	Pulse	0.30	3
Cu	63	72	2	0.072	ppb	27.12	1,232.93	2.460E-02	Pulse	0.30	3
Zn	66	72	2	0.155	ppb	20.18	837.15	1.668E-02	Pulse	0.30	3
As	75	72	2	0.143	ppb	9.41	90.67	1.807E-03	Pulse	0.75	3
Se	78	72	1	0.008	ppb	86.60	2.22	3.775E-05	Pulse	0.30	3
Mo	95	103	2	0.391	ppb	5.44	1,405.69	9.205E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-42.31	-1.272E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-3,370.03	-8.852E-04	Pulse	0.30	3
Sb	121	115	3	0.005	ppb	9.04	302.24	7.939E-05	Pulse	0.30	3
Ba	137	159	3	20.531	ppb	0.56	188,639.66	3.048E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	657.82	1.631E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,816.48	-1.443E-03	Pulse	0.30	3
U	238	209	3	5.452	ppb	0.53	605,503.16	1.502E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,270,719.88	0.40	74.6	Analog	0.30	3

for 5/19/2016

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	73,719.23	2.27	81.4	Pulse	0.30	3
3	Sc	45	2,100,407.33	0.89	88.1	Analog	0.30	3
1	Ge	72	58,429.87	1.13	83.5	Pulse	0.30	3
2	Ge	72	50,223.63	2.43	82.8	Pulse	0.30	3
2	Rh	103	1,527,618.99	0.98	83.6	Analog	0.30	3
3	Rh	103	3,330,663.70	1.12	89.9	Analog	0.30	3
3	In	115	3,807,329.57	0.45	95.3	Analog	0.30	3
3	Tb	159	6,189,621.44	0.62	96.8	Analog	0.30	3
3	Bi	209	4,030,996.26	1.00	94.5	Analog	0.30	3

Quantitation Report

File Name A0516090.D
File Path C:\ICPMH\1\DATA\160516A.B
Method File DEFAULT.M
Method Path C:\ICPMH\1\METHODS\
Acq Time 05/16/2016 15:14
Sample Name N019611-002B,SAMP,10
Sample Type Sample -001B
Comment
Prep Dilution 1.000
Auto Dilution N/A
Total Dilution 1.000
Operator Name
Acq Mode Spectrum
Cal Title
Cal Type External Calibration
Last Calib 05/16/2016 08:39
Bkg File
Bkg Mode Count Subtraction except for ISTD
Interference File Acq. Defined
FQ Blank File
VIS Fit Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	3.33	2.623E-06	Pulse	0.30	3
B	11	6	3	15.024	ppb	0.45	145,377.55	1.146E-01	Pulse	0.30	3
Na	23	45	2	6026.461	ppb	1.19	6,533,533.52	8.815E+01	Analog	0.30	3
Mg	26	45	2	1139.180	ppb	1.52	109,830.36	1.482E+00	Pulse	0.30	3
Al	27	45	2	0.225	ppb	40.07	286.84	3.872E-03	Pulse	0.30	3
K	39	45	2	527.613	ppb	2.98	175,243.72	2.365E+00	Pulse	0.30	3
Ca	44	45	3	7154.584	ppb	0.37	7,071,338.50	3.456E+00	Analog	0.30	3
V	51	45	2	0.239	ppb	11.79	1,782.40	2.406E-02	Pulse	0.30	3
Cr	52	45	2	19.776	ppb	1.92	109,693.14	1.480E+00	Pulse	0.30	3
Mn	55	45	2	124.056	ppb	1.46	373,900.27	5.045E+00	Pulse	0.30	3
Fe	56	45	2	4.309	ppb	2.74	22,100.03	2.981E-01	Pulse	0.30	3
Co	59	45	2	0.023	ppb	19.74	268.34	3.624E-03	Pulse	0.30	3
Ni	60	72	2	0.160	ppb	6.55	563.52	1.087E-02	Pulse	0.30	3
Cu	63	72	2	0.005	ppb	173.02	751.76	1.451E-02	Pulse	0.30	3
Zn	66	72	2	0.067	ppb	35.06	762.04	1.469E-02	Pulse	0.30	3
As	75	72	2	3.647	ppb	3.75	2,142.96	4.133E-02	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	2.269	ppb	0.83	8,302.53	5.274E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	40.73	1.212E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,149.78	-2.986E-04	Pulse	0.30	3
Sb	121	115	3	0.002	ppb	109.37	230.01	5.972E-05	Pulse	0.30	3
Ba	137	159	3	14.056	ppb	0.58	129,346.74	2.087E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	540.04	1.291E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,144.31	-2.736E-04	Pulse	0.30	3
U	238	209	3	0.689	ppb	0.23	79,488.04	1.901E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,268,871.90	0.81	74.5	Analog	0.30	3

for 5/19/2016

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	74,130.92	2.29	81.8	Pulse	0.30	3
3	Sc	45	2,046,030.47	0.20	85.9	Analog	0.30	3
1	Ge	72	62,226.16	0.72	88.9	Pulse	0.30	3
2	Ge	72	51,873.53	2.19	85.6	Pulse	0.30	3
2	Rh	103	1,574,348.74	0.83	86.1	Analog	0.30	3
3	Rh	103	3,361,149.98	0.09	90.7	Analog	0.30	3
3	In	115	3,850,881.78	0.25	96.4	Analog	0.30	3
3	Tb	159	6,198,250.74	0.33	97.0	Analog	0.30	3
3	Bi	209	4,181,816.78	0.36	98.0	Analog	0.30	3

Quantitation Report

File Name	A0516091.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:20
Sample Name	N019611-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	4.44	3.504E-06	Pulse	0.30	3
B	11	6	3	67.086	ppb	1.01	522,434.84	4.110E-01	Pulse	0.30	3
Na	23	45	2	15910.448	ppb	1.08	17,911,117.37	2.321E+02	Analog	0.30	3
Mg	26	45	2	3013.395	ppb	1.49	302,406.73	3.918E+00	Pulse	0.30	3
Al	27	45	2	0.206	ppb	127.73	295.41	3.822E-03	Pulse	0.30	3
K	39	45	2	809.365	ppb	0.95	273,489.56	3.543E+00	Pulse	0.30	3
Ca	44	45	3	17548.639	ppb	0.71	17,688,801.68	8.472E+00	Analog	0.30	3
V	51	45	2	0.953	ppb	1.45	4,908.71	6.358E-02	Pulse	0.30	3
Cr	52	45	2	65.054	ppb	0.46	374,465.87	4.851E+00	Pulse	0.30	3
Mn	55	45	2	0.322	ppb	9.72	1,091.47	1.414E-02	Pulse	0.30	3
Fe	56	45	2	0.965	ppb	4.91	5,953.07	7.710E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	77.29	51.42	6.647E-04	Pulse	0.30	3
Ni	60	72	2	0.219	ppb	14.02	735.40	1.406E-02	Pulse	0.30	3
Cu	63	72	2	0.048	ppb	36.36	1,101.30	2.107E-02	Pulse	0.30	3
Zn	66	72	2	0.014	ppb	295.80	704.72	1.348E-02	Pulse	0.30	3
As	75	72	2	0.144	ppb	7.39	95.10	1.818E-03	Pulse	0.75	3
Se	78	72	1	0.015	ppb	86.60	4.45	7.217E-05	Pulse	0.30	3
Mo	95	103	2	0.405	ppb	4.67	1,496.81	9.536E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-136.11	-4.089E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-3,331.69	-8.666E-04	Pulse	0.30	3
Sb	121	115	3	0.003	ppb	44.00	252.24	6.558E-05	Pulse	0.30	3
Ba	137	159	3	20.407	ppb	0.40	188,424.83	3.029E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	454.47	1.117E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,877.93	-1.443E-03	Pulse	0.30	3
U	238	209	3	5.379	ppb	0.50	603,534.78	1.482E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,271,145.09	0.86	74.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	77,191.63	1.58	85.2	Pulse	0.30	3
3	Sc	45	2,088,109.83	1.20	87.6	Analog	0.30	3
1	Ge	72	61,196.40	1.19	87.5	Pulse	0.30	3
2	Ge	72	52,298.08	0.54	86.3	Pulse	0.30	3
2	Rh	103	1,568,976.80	1.38	85.8	Analog	0.30	3
3	Rh	103	3,332,668.70	0.45	89.9	Analog	0.30	3
3	In	115	3,844,542.71	0.83	96.2	Analog	0.30	3
3	Tb	159	6,219,985.25	0.45	97.3	Analog	0.30	3
3	Bi	209	4,072,263.34	0.96	95.4	Analog	0.30	3

Quantitation Report

File Name	A0516092.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:26
Sample Name	CCV6,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.777	ppb	1.11	167,529.40	1.182E-01	Pulse	0.30	3
B	11	6	3	199.388	ppb	0.35	1,651,022.27	1.164E+00	Analog	0.30	3
Na	23	45	2	219.882	ppb	1.37	305,506.86	3.611E+00	Pulse	0.30	3
Mg	26	45	2	196.983	ppb	2.44	21,773.76	2.573E-01	Pulse	0.30	3
Al	27	45	2	25.639	ppb	5.64	6,003.59	7.101E-02	Pulse	0.30	3
K	39	45	2	207.917	ppb	1.55	86,908.65	1.027E+00	Pulse	0.30	3
Ca	44	45	3	217.038	ppb	0.58	237,709.43	1.085E-01	Pulse	0.30	3
V	51	45	2	20.198	ppb	1.59	95,565.75	1.130E+00	Pulse	0.30	3
Cr	52	45	2	20.079	ppb	1.90	127,109.78	1.503E+00	Pulse	0.30	3
Mn	55	45	2	20.622	ppb	1.64	71,015.34	8.395E-01	Pulse	0.30	3
Fe	56	45	2	20.533	ppb	2.09	115,933.71	1.371E+00	Pulse	0.30	3
Co	59	45	2	20.471	ppb	1.63	239,484.03	2.831E+00	Pulse	0.30	3
Ni	60	72	2	19.656	ppb	1.48	61,132.60	1.054E+00	Pulse	0.30	3
Cu	63	72	2	19.425	ppb	0.74	170,778.25	2.945E+00	Pulse	0.30	3
Zn	66	72	2	19.572	ppb	0.63	26,435.15	4.558E-01	Pulse	0.30	3
As	75	72	2	20.581	ppb	0.12	13,475.89	2.324E-01	Pulse	0.75	3
Se	78	72	1	21.078	ppb	0.55	7,001.85	1.001E-01	Pulse	0.30	3
Mo	95	103	2	19.364	ppb	2.09	80,713.09	4.491E-02	Pulse	0.30	3
Ag	107	103	3	19.669	ppb	0.54	640,694.42	1.691E-01	Pulse	0.30	3
Cd	111	115	3	20.007	ppb	0.23	160,575.07	3.755E-02	Pulse	0.30	3
Sb	121	115	3	20.048	ppb	0.37	536,529.49	1.255E-01	Pulse	0.30	3
Ba	137	159	3	20.877	ppb	0.28	213,354.20	3.099E-02	Pulse	0.30	3
Tl	205	209	3	20.083	ppb	1.11	1,674,339.43	3.567E-01	Analog	0.30	3
Pb	208	209	3	20.211	ppb	0.36	2,308,344.99	4.918E-01	Pulse	0.30	3
U	238	209	3	19.849	ppb	0.57	2,566,366.26	5.468E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,417,980.81	0.64	83.3	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	84,614.80	2.34	93.4	Pulse	0.30	3
3	Sc	45	2,191,050.09	0.79	91.9	Analog	0.30	3
1	Ge	72	69,921.45	1.23	99.9	Pulse	0.30	3
2	Ge	72	57,992.80	1.40	95.6	Pulse	0.30	3
2	Rh	103	1,797,127.72	0.24	98.3	Analog	0.30	3
3	Rh	103	3,789,246.99	0.27	102.2	Analog	0.30	3
3	In	115	4,276,261.91	0.35	107.0	Analog	0.30	3
3	Tb	159	6,884,244.83	0.63	107.7	Analog	0.30	3
3	Bi	209	4,693,504.55	0.27	110.0	Analog	0.30	3

Quantitation Report

File Name	A0516093.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:31
Sample Name	CCB6,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	256.59	16.67	1.231E-05	Pulse	0.30	3
B	11	6	3	4.584	ppb	5.91	74,320.13	5.512E-02	Pulse	0.30	3
Na	23	45	2	7.006	ppb	17.91	40,341.38	5.119E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	71.12	9.011E-04	Pulse	0.30	3
Al	27	45	2	2.943	ppb	10.67	871.17	1.105E-02	Pulse	0.30	3
K	39	45	2	3.751	ppb	43.10	13,653.90	1.733E-01	Pulse	0.30	3
Ca	44	45	3	2.783	ppb	7.89	10,683.91	5.108E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	578.93	7.344E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	543.33	6.900E-03	Pulse	0.30	3
Mn	55	45	2	0.017	ppb	24.35	138.87	1.764E-03	Pulse	0.30	3
Fe	56	45	2	0.463	ppb	1.57	3,460.81	4.389E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	29.95	3.785E-04	Pulse	0.30	3
Ni	60	72	2	0.006	ppb	197.16	145.50	2.633E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	717.37	1.302E-02	Pulse	0.30	3
Zn	66	72	2	0.006	ppb	937.50	733.11	1.331E-02	Pulse	0.30	3
As	75	72	2	0.005	ppb	109.37	14.22	2.589E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	99.84	3.33	5.078E-05	Pulse	0.30	3
Mo	95	103	2	0.029	ppb	24.96	137.79	8.080E-05	Pulse	0.30	3
Ag	107	103	3	0.038	ppb	12.62	1,486.16	4.143E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	55.08	1.383E-05	Pulse	0.30	3
Sb	121	115	3	0.031	ppb	3.16	956.74	2.402E-04	Pulse	0.30	3
Ba	137	159	3	0.017	ppb	1.09	203.12	3.160E-05	Pulse	0.30	3
Tl	205	209	3	0.008	ppb	21.26	1,424.58	3.259E-04	Pulse	0.30	3
Pb	208	209	3	0.002	ppb	102.85	1,646.17	3.768E-04	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.002	ppb	14.64	421.28	9.634E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,348,402.94	1.00	79.2	Analog	0.30	3
2	Sc	45	78,846.95	2.31	87.0	Pulse	0.30	3
3	Sc	45	2,091,630.37	0.46	87.8	Analog	0.30	3
1	Ge	72	65,389.37	0.59	93.4	Pulse	0.30	3
2	Ge	72	55,145.18	2.71	90.9	Pulse	0.30	3
2	Rh	103	1,704,052.89	0.67	93.2	Analog	0.30	3
3	Rh	103	3,586,344.08	0.46	96.8	Analog	0.30	3
3	In	115	3,983,379.48	0.27	99.7	Analog	0.30	3
3	Tb	159	6,428,599.00	0.53	100.6	Analog	0.30	3
3	Bi	209	4,370,437.50	0.92	102.4	Analog	0.30	3

Quantitation Report

File Name	A0516094.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:37
Sample Name	N019611-005B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	151.09	14.44	1.105E-05	Pulse	0.30	3
B	11	6	3	42.271	ppb	0.99	352,532.85	2.697E-01	Pulse	0.30	3
Na	23	45	2	20431.144	ppb	1.30	23,596,669.09	2.979E+02	Analog	0.30	3
Mg	26	45	2	3801.333	ppb	1.26	391,499.75	4.942E+00	Pulse	0.30	3
Al	27	45	2	24.374	ppb	3.40	5,363.21	6.767E-02	Pulse	0.30	3
K	39	45	2	832.034	ppb	0.64	288,229.35	3.638E+00	Pulse	0.30	3
Ca	44	45	3	21699.490	ppb	0.59	22,481,997.16	1.047E+01	Analog	0.30	3
V	51	45	2	0.974	ppb	1.84	5,129.91	6.476E-02	Pulse	0.30	3
Cr	52	45	2	79.838	ppb	0.93	471,557.90	5.952E+00	Pulse	0.30	3
Mn	55	45	2	0.919	ppb	5.57	3,043.47	3.841E-02	Pulse	0.30	3
Fe	56	45	2	34.477	ppb	1.04	181,605.87	2.292E+00	Pulse	0.30	3
Co	59	45	2	0.019	ppb	35.61	238.24	3.021E-03	Pulse	0.30	3
Ni	60	72	2	0.068	ppb	3.21	320.32	5.943E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	578.34	1.071E-02	Pulse	0.30	3
Zn	66	72	2	0.034	ppb	146.05	751.47	1.394E-02	Pulse	0.30	3
As	75	72	2	0.288	ppb	4.72	185.50	3.442E-03	Pulse	0.75	3
Se	78	72	1	0.045	ppb	98.87	13.33	2.118E-04	Pulse	0.30	3
Mo	95	103	2	0.372	ppb	2.38	1,404.57	8.754E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-91.86	-2.698E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-4,450.67	-1.131E-03	Pulse	0.30	3
Sb	121	115	3	0.028	ppb	8.91	875.62	2.225E-04	Pulse	0.30	3
Ba	137	159	3	13.610	ppb	0.70	128,925.69	2.021E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	45.47	916.74	2.214E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-7,066.92	-1.706E-03	Pulse	0.30	3
U	238	209	3	7.535	ppb	0.13	859,652.63	2.076E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,307,053.41	0.14	76.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	79,233.45	2.31	87.4	Pulse	0.30	3
3	Sc	45	2,146,402.95	0.75	90.1	Analog	0.30	3
1	Ge	72	62,841.48	1.84	89.8	Pulse	0.30	3
2	Ge	72	53,911.10	2.67	88.9	Pulse	0.30	3
2	Rh	103	1,604,903.59	2.03	87.8	Analog	0.30	3
3	Rh	103	3,402,949.32	0.30	91.8	Analog	0.30	3
3	In	115	3,934,869.70	0.62	98.5	Analog	0.30	3
3	Tb	159	6,380,428.66	0.82	99.8	Analog	0.30	3
3	Bi	209	4,141,308.66	0.25	97.0	Analog	0.30	3

Quantitation Report

File Name	A0516095.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:42
Sample Name	N019611-007B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	3.33	2.652E-06	Pulse	0.30	3
B	11	6	3	22.303	ppb	1.24	196,597.83	1.560E-01	Pulse	0.30	3
Na	23	45	2	10454.932	ppb	0.69	11,796,295.10	1.526E+02	Analog	0.30	3
Mg	26	45	2	1611.372	ppb	0.89	161,969.12	2.096E+00	Pulse	0.30	3
Al	27	45	2	0.401	ppb	28.75	334.98	4.337E-03	Pulse	0.30	3
K	39	45	2	833.499	ppb	0.72	281,658.91	3.644E+00	Pulse	0.30	3
Ca	44	45	3	10489.192	ppb	0.75	10,740,514.14	5.065E+00	Analog	0.30	3
V	51	45	2	0.906	ppb	2.58	4,716.44	6.100E-02	Pulse	0.30	3
Cr	52	45	2	50.774	ppb	1.43	292,761.96	3.788E+00	Pulse	0.30	3
Mn	55	45	2	1.972	ppb	3.27	6,280.02	8.123E-02	Pulse	0.30	3
Fe	56	45	2	0.776	ppb	4.74	4,993.83	6.463E-02	Pulse	0.30	3
Co	59	45	2	0.085	ppb	9.87	937.38	1.214E-02	Pulse	0.30	3
Ni	60	72	2	0.720	ppb	5.32	2,172.29	4.086E-02	Pulse	0.30	3
Cu	63	72	2	0.104	ppb	10.45	1,568.68	2.951E-02	Pulse	0.30	3
Zn	66	72	2	0.221	ppb	30.44	965.27	1.816E-02	Pulse	0.30	3
As	75	72	2	0.703	ppb	8.13	432.42	8.134E-03	Pulse	0.75	3
Se	78	72	1	0.310	ppb	33.85	92.23	1.472E-03	Pulse	0.30	3
Mo	95	103	2	1.176	ppb	5.41	4,384.11	2.740E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-60.77	-1.796E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,191.94	-5.652E-04	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	10.28	1,309.01	3.374E-04	Pulse	0.30	3
Ba	137	159	3	20.713	ppb	0.65	194,041.77	3.075E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	714.50	1.716E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-3,405.49	-8.182E-04	Pulse	0.30	3
U	238	209	3	6.117	ppb	0.28	701,538.87	1.685E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,260,154.48	0.50	74.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	77,295.14	1.77	85.3	Pulse	0.30	3
3	Sc	45	2,120,466.22	0.45	89.0	Analog	0.30	3
1	Ge	72	62,618.51	1.08	89.5	Pulse	0.30	3
2	Ge	72	53,165.25	0.30	87.7	Pulse	0.30	3
2	Rh	103	1,600,541.69	0.42	87.5	Analog	0.30	3
3	Rh	103	3,378,126.06	0.62	91.1	Analog	0.30	3
3	In	115	3,878,366.25	0.49	97.1	Analog	0.30	3
3	Tb	159	6,310,820.04	0.99	98.7	Analog	0.30	3
3	Bi	209	4,162,492.13	0.24	97.5	Analog	0.30	3

Quantitation Report

File Name	A0516096.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:48
Sample Name	N019611-012B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	6.917E-06	Pulse	0.30	3
B	11	6	3	9.603	ppb	1.32	107,298.46	8.371E-02	Pulse	0.30	3
Na	23	45	2	3636.727	ppb	1.26	4,134,850.56	5.336E+01	Analog	0.30	3
Mg	26	45	2	752.818	ppb	1.48	75,918.47	9.797E-01	Pulse	0.30	3
Al	27	45	2	7.771	ppb	5.96	1,844.85	2.381E-02	Pulse	0.30	3
K	39	45	2	141.163	ppb	4.57	57,964.58	7.481E-01	Pulse	0.30	3
Ca	44	45	3	4224.128	ppb	0.23	4,170,953.90	2.042E+00	Analog	0.30	3
V	51	45	2	0.056	ppb	25.08	1,077.87	1.392E-02	Pulse	0.30	3
Cr	52	45	2	0.038	ppb	17.42	812.57	1.048E-02	Pulse	0.30	3
Mn	55	45	2	68.147	ppb	1.92	214,773.47	2.772E+00	Pulse	0.30	3
Fe	56	45	2	53.053	ppb	1.08	272,804.76	3.520E+00	Pulse	0.30	3
Co	59	45	2	0.051	ppb	11.58	584.84	7.544E-03	Pulse	0.30	3
Ni	60	72	2	0.138	ppb	9.75	531.36	9.705E-03	Pulse	0.30	3
Cu	63	72	2	1.969	ppb	3.74	17,021.84	3.109E-01	Pulse	0.30	3
Zn	66	72	2	0.059	ppb	181.06	792.62	1.450E-02	Pulse	0.30	3
As	75	72	2	0.437	ppb	13.05	281.56	5.133E-03	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.098	ppb	14.73	400.02	2.422E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	181.21	5.270E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-727.87	-1.863E-04	Pulse	0.30	3
Sb	121	115	3	0.001	ppb	176.82	210.01	5.374E-05	Pulse	0.30	3
Ba	137	159	3	4.724	ppb	1.16	44,106.94	7.018E-03	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	544.48	1.298E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	5.85	1.336E-06	Pulse	0.30	3
U	238	209	3	0.857	ppb	1.37	99,231.77	2.363E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,281,891.97	0.52	75.3	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	77,506.16	2.05	85.5	Pulse	0.30	3
3	Sc	45	2,042,515.40	0.10	85.7	Analog	0.30	3
1	Ge	72	65,814.26	1.55	94.1	Pulse	0.30	3
2	Ge	72	54,776.29	1.75	90.3	Pulse	0.30	3
2	Rh	103	1,650,784.51	0.37	90.3	Analog	0.30	3
3	Rh	103	3,435,996.48	0.32	92.7	Analog	0.30	3
3	In	115	3,907,565.45	0.34	97.8	Analog	0.30	3
3	Tb	159	6,285,450.74	0.47	98.3	Analog	0.30	3
3	Bi	209	4,198,876.85	1.01	98.4	Analog	0.30	3

Quantitation Report

File Name	A0516097.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:54
Sample Name	N019654-006B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.011	ppb	34.99	92.23	7.297E-05	Pulse	0.30	3
B	11	6	3	65.185	ppb	1.46	505,785.50	4.002E-01	Pulse	0.30	3
Na	23	45	2	20104.679	ppb	1.34	22,647,275.50	2.931E+02	Analog	0.30	3
Mg	26	45	2	3647.983	ppb	1.60	366,411.76	4.743E+00	Pulse	0.30	3
Al	27	45	2	299.249	ppb	2.05	61,340.59	7.939E-01	Pulse	0.30	3
K	39	45	2	1358.359	ppb	1.39	451,196.46	5.840E+00	Pulse	0.30	3
Ca	44	45	3	20611.482	ppb	0.36	21,178,227.19	9.950E+00	Analog	0.30	3
V	51	45	2	1.664	ppb	5.77	7,951.20	1.030E-01	Pulse	0.30	3
Cr	52	45	2	74.944	ppb	1.19	431,739.82	5.588E+00	Pulse	0.30	3
Mn	55	45	2	7.262	ppb	2.46	22,894.59	2.963E-01	Pulse	0.30	3
Fe	56	45	2	298.596	ppb	4.08	1,525,611.89	1.975E+01	Analog	0.30	3
Co	59	45	2	0.128	ppb	6.71	1,402.38	1.814E-02	Pulse	0.30	3
Ni	60	72	2	1.123	ppb	6.74	3,319.29	6.245E-02	Pulse	0.30	3
Cu	63	72	2	0.296	ppb	2.00	3,107.19	5.844E-02	Pulse	0.30	3
Zn	66	72	2	1.530	ppb	8.58	2,537.87	4.777E-02	Pulse	0.30	3
As	75	72	2	0.854	ppb	2.68	522.92	9.835E-03	Pulse	0.75	3
Se	78	72	1	0.204	ppb	23.87	61.11	9.709E-04	Pulse	0.30	3
Mo	95	103	2	0.757	ppb	4.07	2,774.81	1.769E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-264.64	-7.960E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-4,230.16	-1.098E-03	Pulse	0.30	3
Sb	121	115	3	0.028	ppb	13.18	853.39	2.216E-04	Pulse	0.30	3
Ba	137	159	3	8.123	ppb	0.94	75,483.82	1.206E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	46.52	867.85	2.128E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	825.22	2.022E-04	Pulse	0.30	3
U	238	209	3	6.384	ppb	0.79	717,357.23	1.759E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,263,965.08	1.15	74.2	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	77,281.56	2.70	85.3	Pulse	0.30	3
3	Sc	45	2,128,591.51	0.90	89.3	Analog	0.30	3
1	Ge	72	62,866.24	0.94	89.8	Pulse	0.30	3
2	Ge	72	53,169.43	1.79	87.7	Pulse	0.30	3
2	Rh	103	1,569,364.66	1.74	85.8	Analog	0.30	3
3	Rh	103	3,324,411.44	0.19	89.7	Analog	0.30	3
3	In	115	3,852,439.82	0.28	96.4	Analog	0.30	3
3	Tb	159	6,257,962.34	0.49	97.9	Analog	0.30	3
3	Bi	209	4,078,518.76	0.33	95.6	Analog	0.30	3

Quantitation Report

File Name	A0516098.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 15:59
Sample Name	N019628-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	1.11	8.517E-07	Pulse	0.30	3
B	11	6	3	329.989	ppb	1.95	2,448,948.03	1.908E+00	Analog	0.30	3
Na	23	45	2	551100.396	ppb	0.63	668,948,323.36	8.024E+03	Analog	0.30	3
Mg	26	45	2	8136.211	ppb	0.29	881,673.93	1.058E+01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	263.20	3.151E-03	Pulse	0.30	3
K	39	45	2	5436.265	ppb	2.32	1,909,418.98	2.290E+01	Analog	0.30	3
Ca	44	45	3	67093.677	ppb	0.64	79,358,917.15	3.238E+01	Analog	0.30	3
V	51	45	2	1.028	ppb	5.23	5,652.32	6.774E-02	Pulse	0.30	3
Cr	52	45	2	23.099	ppb	0.87	143,994.62	1.728E+00	Pulse	0.30	3
Mn	55	45	2	2.409	ppb	1.19	8,256.14	9.902E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-47,271.79	-5.670E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-21.82	-2.579E-04	Pulse	0.30	3
Ni	60	72	2	0.005	ppb	491.47	135.41	2.593E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-13,185.39	-2.551E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-813.56	-1.576E-02	Pulse	0.30	3
As	75	72	2	0.854	ppb	7.94	508.93	9.836E-03	Pulse	0.75	3
Se	78	72	1	0.376	ppb	24.92	105.56	1.785E-03	Pulse	0.30	3
Mo	95	103	2	9.749	ppb	4.21	31,477.46	2.262E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,464.51	-4.740E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-89.97	-2.521E-05	Pulse	0.30	3
Sb	121	115	3	0.443	ppb	1.66	9,996.95	2.820E-03	Pulse	0.30	3
Ba	137	159	3	10.051	ppb	0.11	81,840.70	1.492E-02	Pulse	0.30	3
Tl	205	209	3	0.004	ppb	44.16	787.83	2.597E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,481.69	-1.808E-03	Pulse	0.30	3
U	238	209	3	0.087	ppb	2.22	7,341.23	2.423E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,283,282.84	1.44	75.3	Analog	0.30	3
2	Sc	45	83,361.01	3.26	92.0	Pulse	0.30	3
3	Sc	45	2,450,759.08	2.06	102.8	Analog	0.30	3
1	Ge	72	58,967.32	2.36	84.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	51,690.64	3.23	85.2	Pulse	0.30	3
2	Rh	103	1,393,728.16	6.02	76.2	Analog	0.30	3
3	Rh	103	3,091,312.14	2.59	83.4	Analog	0.30	3
3	In	115	3,546,236.32	2.33	88.8	Analog	0.30	3
3	Tb	159	5,483,768.95	2.92	85.8	Analog	0.30	3
3	Bi	209	3,030,441.21	2.79	71.0	Analog	0.30	3

Quantitation Report

File Name	A0516099.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:05
Sample Name	N019628-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	7.78	6.204E-06	Pulse	0.30	3
B	11	6	3	329.730	ppb	3.03	2,340,009.92	1.907E+00	Analog	0.30	3
Na	23	45	2	555303.104	ppb	0.56	713,694,087.14	8.085E+03	Analog	0.30	3
Mg	26	45	2	8756.254	ppb	0.42	1,004,734.29	1.138E+01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	193.14	2.191E-03	Pulse	0.30	3
K	39	45	2	5191.925	ppb	1.05	1,931,068.08	2.188E+01	Analog	0.30	3
Ca	44	45	3	68921.918	ppb	0.79	77,499,874.96	3.326E+01	Analog	0.30	3
V	51	45	2	1.049	ppb	6.28	6,088.05	6.895E-02	Pulse	0.30	3
Cr	52	45	2	24.167	ppb	0.75	159,511.00	1.807E+00	Pulse	0.30	3
Mn	55	45	2	0.230	ppb	14.58	918.52	1.041E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-57,332.32	-6.495E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-739.99	-8.384E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-576.90	-1.070E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-14,314.24	-2.656E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,588.77	-2.948E-02	Pulse	0.30	3
As	75	72	2	0.907	ppb	0.86	562.34	1.043E-02	Pulse	0.75	3
Se	78	72	1	0.326	ppb	27.23	93.34	1.548E-03	Pulse	0.30	3
Mo	95	103	2	9.717	ppb	1.29	32,252.30	2.254E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,450.61	-5.007E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-141.37	-4.310E-05	Pulse	0.30	3
Sb	121	115	3	0.007	ppb	46.36	295.57	8.953E-05	Pulse	0.30	3
Ba	137	159	3	10.636	ppb	0.88	80,139.83	1.579E-02	Pulse	0.30	3
Tl	205	209	3	0.005	ppb	27.11	757.83	2.691E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,308.50	-1.881E-03	Pulse	0.30	3
U	238	209	3	0.098	ppb	1.81	7,703.76	2.731E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,225,983.09	5.98	72.0	Analog	0.30	3
2	Sc	45	88,275.23	0.93	97.4	Pulse	0.30	3
3	Sc	45	2,331,006.51	7.98	97.8	Analog	0.30	3
1	Ge	72	60,160.61	1.61	86.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	53,907.86	1.38	88.9	Pulse	0.30	3
2	Rh	103	1,430,671.42	0.59	78.2	Analog	0.30	3
3	Rh	103	2,900,425.48	6.71	78.3	Analog	0.30	3
3	In	115	3,288,939.40	6.71	82.3	Analog	0.30	3
3	Tb	159	5,072,612.25	6.58	79.3	Analog	0.30	3
3	Bi	209	2,819,484.40	7.04	66.1	Analog	0.30	3

Quantitation Report

File Name	A0516100.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:10
Sample Name	N019628-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	218.82	17.78	1.425E-05	Pulse	0.30	3
B	11	6	3	432.381	ppb	0.53	3,101,668.17	2.491E+00	Analog	0.30	3
Na	23	45	2	855536.757	ppb	0.91	1,113,435,485.63	1.246E+04	Analog	0.30	3
Mg	26	45	2	1161.483	ppb	0.49	135,054.60	1.511E+00	Pulse	0.30	3
Al	27	45	2	1.738	ppb	11.63	703.25	7.869E-03	Pulse	0.30	3
K	39	45	2	9110.467	ppb	0.05	3,420,873.94	3.827E+01	Analog	0.30	3
Ca	44	45	3	72120.549	ppb	0.81	87,821,812.02	3.480E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	492.25	5.503E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	-6.65	-7.997E-05	Pulse	0.30	3
Mn	55	45	2	59.229	ppb	1.84	215,335.33	2.409E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-64,292.19	-7.192E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,198.81	-1.341E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-997.13	-1.852E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-26,374.45	-4.899E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-3,159.42	-5.869E-02	Pulse	0.30	3
As	75	72	2	0.154	ppb	11.53	104.04	1.932E-03	Pulse	0.75	3
Se	78	72	1	0.015	ppb	173.21	4.44	7.319E-05	Pulse	0.30	3
Mo	95	103	2	7.089	ppb	0.41	22,851.54	1.645E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,498.43	-8.237E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-200.12	-5.791E-05	Pulse	0.30	3
Sb	121	115	3	0.004	ppb	27.84	254.46	7.364E-05	Pulse	0.30	3
Ba	137	159	3	14.791	ppb	1.27	115,188.26	2.196E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	322.24	1.143E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-8,925.75	-3.170E-03	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-361.85	-1.285E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,245,143.36	0.38	73.1	Analog	0.30	3
2	Sc	45	89,393.46	1.05	98.7	Pulse	0.30	3
3	Sc	45	2,523,329.89	0.65	105.9	Analog	0.30	3
1	Ge	72	60,467.17	1.53	86.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	53,837.65	0.17	88.8	Pulse	0.30	3
2	Rh	103	1,389,070.90	1.35	76.0	Analog	0.30	3
3	Rh	103	3,032,869.16	0.69	81.8	Analog	0.30	3
3	In	115	3,454,986.30	0.43	86.5	Analog	0.30	3
3	Tb	159	5,246,096.10	1.36	82.1	Analog	0.30	3
3	Bi	209	2,815,663.50	0.63	66.0	Analog	0.30	3

Quantitation Report

File Name	A0516101.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:16
Sample Name	N019628-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	206.75	14.45	1.114E-05	Pulse	0.30	3
B	11	6	3	392.218	ppb	1.17	2,952,550.88	2.262E+00	Analog	0.30	3
Na	23	45	2	592680.034	ppb	0.52	775,862,859.55	8.629E+03	Analog	0.30	3
Mg	26	45	2	4340.342	ppb	0.50	507,318.58	5.642E+00	Pulse	0.30	3
Al	27	45	2	0.439	ppb	19.79	399.43	4.438E-03	Pulse	0.30	3
K	39	45	2	7998.514	ppb	1.83	3,023,876.31	3.362E+01	Analog	0.30	3
Ca	44	45	3	95065.858	ppb	0.68	119,464,262.66	4.588E+01	Analog	0.30	3
V	51	45	2	0.127	ppb	11.36	1,604.59	1.783E-02	Pulse	0.30	3
Cr	52	45	2	405.188	ppb	1.14	2,713,830.50	3.018E+01	Analog	0.30	3
Mn	55	45	2	7.711	ppb	0.53	28,287.30	3.146E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-57,166.38	-6.358E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-664.29	-7.385E-03	Pulse	0.30	3
Ni	60	72	2	0.061	ppb	59.91	300.83	5.601E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-11,702.46	-2.168E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,325.16	-2.454E-02	Pulse	0.30	3
As	75	72	2	0.319	ppb	3.75	204.70	3.793E-03	Pulse	0.75	3
Se	78	72	1	1.026	ppb	17.05	293.35	4.876E-03	Pulse	0.30	3
Mo	95	103	2	4.552	ppb	0.63	15,732.77	1.057E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,039.09	-6.281E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-285.31	-7.655E-05	Pulse	0.30	3
Sb	121	115	3	0.001	ppb	9.31	208.90	5.608E-05	Pulse	0.30	3
Ba	137	159	3	9.785	ppb	0.17	84,718.52	1.453E-02	Pulse	0.30	3
Tl	205	209	3	0.107	ppb	2.54	6,636.23	2.081E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-9,292.67	-2.914E-03	Pulse	0.30	3
U	238	209	3	1.073	ppb	0.72	94,381.50	2.960E-02	Pulse	0.30	3

OLR

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,305,270.10	1.98	76.6	Analog	0.30	3
2	Sc	45	89,909.41	4.14	99.2	Pulse	0.30	3
3	Sc	45	2,604,267.88	1.99	109.3	Analog	0.30	3
1	Ge	72	60,172.73	1.80	86.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	53,948.00	3.81	89.0	Pulse	0.30	3
2	Rh	103	1,488,461.49	5.22	81.4	Analog	0.30	3
3	Rh	103	3,247,850.75	1.41	87.6	Analog	0.30	3
3	In	115	3,724,150.94	2.22	93.2	Analog	0.30	3
3	Tb	159	5,830,879.01	1.66	91.2	Analog	0.30	3
3	Bi	209	3,188,805.06	1.02	74.7	Analog	0.30	3

Quantitation Report

File Name	A0516102.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:22
Sample Name	N019628-004B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	6.976E-06	Pulse	0.30	3
B	11	6	3	76.440	ppb	0.92	592,648.49	4.643E-01	Pulse	0.30	3
Na	23	45	2	121995.818	ppb	0.27	140,811,412.34	1.777E+03	Analog	0.30	3
Mg	26	45	2	906.554	ppb	1.18	93,504.28	1.180E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	119.57	1.502E-03	Pulse	0.30	3
K	39	45	2	1624.989	ppb	0.70	551,303.36	6.955E+00	Pulse	0.30	3
Ca	44	45	3	19652.360	ppb	0.02	20,555,657.75	9.487E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	648.93	8.187E-03	Pulse	0.30	3
Cr	52	45	2	83.704	ppb	0.37	494,570.17	6.240E+00	Pulse	0.30	3
Mn	55	45	2	1.631	ppb	0.83	5,339.00	6.738E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-8,447.04	-1.066E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-73.18	-9.125E-04	Pulse	0.30	3
Ni	60	72	2	0.058	ppb	27.31	283.54	5.411E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,211.09	-2.311E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	202.04	3.862E-03	Pulse	0.30	3
As	75	72	2	0.084	ppb	20.84	60.17	1.150E-03	Pulse	0.75	3
Se	78	72	1	0.198	ppb	38.05	62.22	9.404E-04	Pulse	0.30	3
Mo	95	103	2	0.870	ppb	3.43	3,013.75	2.030E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-83.16	-2.579E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-9,117.09	-2.475E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	151.12	4.115E-05	Pulse	0.30	3
Ba	137	159	3	0.807	ppb	252.55	7,003.90	1.204E-03	Pulse	0.30	3
Tl	205	209	3	0.020	ppb	7.89	1,891.32	5.303E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-18,110.56	-5.092E-03	Pulse	0.30	3
U	238	209	3	0.207	ppb	0.40	20,474.86	5.739E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,276,555.90	1.03	75.0	Analog	0.30	3
2	Sc	45	79,257.84	4.32	87.5	Pulse	0.30	3
3	Sc	45	2,166,769.01	1.16	90.9	Analog	0.30	3
1	Ge	72	66,060.91	1.02	94.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	52,276.89	3.97	86.2	Pulse	0.30	3
2	Rh	103	1,484,830.31	3.88	81.2	Analog	0.30	3
3	Rh	103	3,213,441.72	1.69	86.7	Analog	0.30	3
3	In	115	3,673,507.20	0.49	92.0	Analog	0.30	3
3	Tb	159	5,860,666.93	1.80	91.7	Analog	0.30	3
3	Bi	209	3,567,542.83	1.08	83.6	Analog	0.30	3

Quantitation Report

File Name	A0516103.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:27
Sample Name	N019628-005B,SAMP,100
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
B	11	6	3	7.885	ppb	3.19	92,317.10	7.392E-02	Pulse	0.30	3
Na	23	45	2	4823.135	ppb	0.69	5,372,932.63	7.063E+01	Analog	0.30	3
Mg	26	45	2	260.330	ppb	0.44	25,833.96	3.396E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	76.31	1.002E-03	Pulse	0.30	3
K	39	45	2	127.124	ppb	2.24	52,435.28	6.894E-01	Pulse	0.30	3
Ca	44	45	3	2300.121	ppb	0.24	2,213,169.17	1.114E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	701.16	9.228E-03	Pulse	0.30	3
Cr	52	45	2	105.449	ppb	0.16	597,887.86	7.859E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	40.06	5.298E-04	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	937.71	1.233E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	26.78	3.533E-04	Pulse	0.30	3
Ni	60	72	2	0.049	ppb	28.24	264.37	4.925E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	645.21	1.205E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	591.20	1.105E-02	Pulse	0.30	3
As	75	72	2	0.022	ppb	56.38	23.92	4.483E-04	Pulse	0.75	3
Se	78	72	1	0.084	ppb	24.43	25.56	3.990E-04	Pulse	0.30	3
Mo	95	103	2	0.356	ppb	4.30	1,336.78	8.396E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	220.08	6.557E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-952.97	-2.521E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	108.89	2.882E-05	Pulse	0.30	3
Ba	137	159	3	0.137	ppb	7.81	1,266.24	2.102E-04	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	512.26	1.263E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,115.13	-2.750E-04	Pulse	0.30	3
U	238	209	3	0.037	ppb	5.70	4,304.80	1.062E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,249,093.57	1.79	73.3	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	76,076.20	1.42	84.0	Pulse	0.30	3
3	Sc	45	1,987,324.86	1.01	83.4	Analog	0.30	3
1	Ge	72	63,782.17	4.38	91.2	Pulse	0.30	3
2	Ge	72	53,571.96	2.13	88.4	Pulse	0.30	3
2	Rh	103	1,592,124.63	1.45	87.1	Analog	0.30	3
3	Rh	103	3,357,325.54	0.58	90.6	Analog	0.30	3
3	In	115	3,779,708.43	0.27	94.6	Analog	0.30	3
3	Tb	159	6,024,465.67	0.35	94.2	Analog	0.30	3
3	Bi	209	4,054,014.77	0.60	95.0	Analog	0.30	3

Quantitation Report

File Name	A0516104.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:33
Sample Name	CCV7,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.861	ppb	0.24	152,969.70	1.187E-01	Pulse	0.30	3
B	11	6	3	196.295	ppb	0.75	1,478,343.77	1.147E+00	Analog	0.30	3
Na	23	45	2	252.958	ppb	1.72	320,849.41	4.093E+00	Pulse	0.30	3
Mg	26	45	2	194.012	ppb	2.38	19,863.52	2.534E-01	Pulse	0.30	3
Al	27	45	2	25.340	ppb	2.77	5,504.71	7.022E-02	Pulse	0.30	3
K	39	45	2	210.167	ppb	1.88	81,276.13	1.037E+00	Pulse	0.30	3
Ca	44	45	3	216.640	ppb	0.82	218,020.70	1.083E-01	Pulse	0.30	3
V	51	45	2	20.119	ppb	1.22	88,224.14	1.125E+00	Pulse	0.30	3
Cr	52	45	2	19.856	ppb	1.29	116,506.51	1.486E+00	Pulse	0.30	3
Mn	55	45	2	20.841	ppb	1.78	66,511.59	8.484E-01	Pulse	0.30	3
Fe	56	45	2	20.338	ppb	1.57	106,437.22	1.358E+00	Pulse	0.30	3
Co	59	45	2	20.203	ppb	0.94	219,047.89	2.794E+00	Pulse	0.30	3
Ni	60	72	2	19.209	ppb	1.05	56,506.91	1.030E+00	Pulse	0.30	3
Cu	63	72	2	18.923	ppb	2.02	157,335.70	2.869E+00	Pulse	0.30	3
Zn	66	72	2	19.243	ppb	2.59	24,584.82	4.484E-01	Pulse	0.30	3
As	75	72	2	20.391	ppb	1.66	12,628.54	2.302E-01	Pulse	0.75	3
Se	78	72	1	19.729	ppb	1.22	6,267.06	9.373E-02	Pulse	0.30	3
Mo	95	103	2	19.645	ppb	1.61	76,392.01	4.556E-02	Pulse	0.30	3
Ag	107	103	3	19.549	ppb	0.88	589,167.57	1.680E-01	Pulse	0.30	3
Cd	111	115	3	20.090	ppb	0.30	148,948.60	3.771E-02	Pulse	0.30	3
Sb	121	115	3	20.228	ppb	0.32	500,031.31	1.266E-01	Pulse	0.30	3
Ba	137	159	3	20.896	ppb	0.22	198,350.49	3.102E-02	Pulse	0.30	3
Tl	205	209	3	20.174	ppb	0.11	1,551,478.64	3.584E-01	Analog	0.30	3
Pb	208	209	3	20.205	ppb	0.29	2,128,660.12	4.917E-01	Pulse	0.30	3
U	238	209	3	19.950	ppb	0.83	2,379,312.18	5.496E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,289,184.18	0.41	75.7	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	78,409.25	1.82	86.5	Pulse	0.30	3
3	Sc	45	2,013,098.04	0.17	84.5	Analog	0.30	3
1	Ge	72	66,864.18	0.26	95.6	Pulse	0.30	3
2	Ge	72	54,845.27	1.73	90.5	Pulse	0.30	3
2	Rh	103	1,676,596.92	0.42	91.7	Analog	0.30	3
3	Rh	103	3,506,058.70	0.64	94.6	Analog	0.30	3
3	In	115	3,950,127.12	0.29	98.9	Analog	0.30	3
3	Tb	159	6,394,245.18	0.41	100.0	Analog	0.30	3
3	Bi	209	4,329,482.37	0.20	101.5	Analog	0.30	3

Quantitation Report

File Name	A0516105.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:38
Sample Name	CCB7,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	1021.12	11.11	8.871E-06	Pulse	0.30	3
B	11	6	3	4.863	ppb	0.46	70,914.42	5.671E-02	Pulse	0.30	3
Na	23	45	2	38.254	ppb	3.41	72,126.39	9.669E-01	Pulse	0.30	3
Mg	26	45	2	0.010	ppb	588.65	93.34	1.251E-03	Pulse	0.30	3
Al	27	45	2	2.736	ppb	20.93	784.49	1.051E-02	Pulse	0.30	3
K	39	45	2	4.964	ppb	41.17	13,299.17	1.783E-01	Pulse	0.30	3
Ca	44	45	3	2.738	ppb	4.33	9,952.30	5.086E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	416.69	5.590E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	551.07	7.399E-03	Pulse	0.30	3
Mn	55	45	2	0.071	ppb	172.37	298.89	3.942E-03	Pulse	0.30	3
Fe	56	45	2	0.502	ppb	19.90	3,468.17	4.649E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	228.29	46.59	6.195E-04	Pulse	0.30	3
Ni	60	72	2	0.049	ppb	18.23	257.70	4.952E-03	Pulse	0.30	3
Cu	63	72	2	0.009	ppb	76.44	788.88	1.518E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	651.91	1.254E-02	Pulse	0.30	3
As	75	72	2	0.016	ppb	54.23	19.55	3.758E-04	Pulse	0.75	3
Se	78	72	1	0.007	ppb	86.60	2.22	3.519E-05	Pulse	0.30	3
Mo	95	103	2	0.027	ppb	6.71	123.34	7.670E-05	Pulse	0.30	3
Ag	107	103	3	0.036	ppb	3.20	1,338.97	3.916E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	47.10	1.233E-05	Pulse	0.30	3
Sb	121	115	3	0.031	ppb	5.02	922.29	2.417E-04	Pulse	0.30	3
Ba	137	159	3	0.021	ppb	17.08	228.70	3.739E-05	Pulse	0.30	3
Tl	205	209	3	0.008	ppb	4.96	1,380.12	3.319E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,380.14	3.319E-04	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.002	ppb	29.44	432.56	1.040E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,250,364.83	0.68	73.4	Analog	0.30	3
2	Sc	45	74,619.76	2.14	82.4	Pulse	0.30	3
3	Sc	45	1,956,777.68	0.19	82.1	Analog	0.30	3
1	Ge	72	62,801.50	0.80	89.8	Pulse	0.30	3
2	Ge	72	52,013.85	1.57	85.8	Pulse	0.30	3
2	Rh	103	1,607,167.41	1.62	87.9	Analog	0.30	3
3	Rh	103	3,419,226.58	0.48	92.3	Analog	0.30	3
3	In	115	3,814,933.48	0.38	95.5	Analog	0.30	3
3	Tb	159	6,116,455.18	0.17	95.7	Analog	0.30	3
3	Bi	209	4,158,475.01	0.33	97.4	Analog	0.30	3

Quantitation Report

File Name	A0516106.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:44
Sample Name	LLCCV3,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.531	ppb	3.83	4,059.57	3.178E-03	Pulse	0.30	3
B	11	6	3	3.616	ppb	5.49	63,372.38	4.962E-02	Pulse	0.30	3
Na	23	45	2	29.973	ppb	2.82	64,547.12	8.463E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	47.78	6.243E-04	Pulse	0.30	3
Al	27	45	2	9.709	ppb	2.53	2,206.91	2.893E-02	Pulse	0.30	3
K	39	45	2	3.044	ppb	17.83	12,992.30	1.703E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	6,423.74	3.207E-03	Pulse	0.30	3
V	51	45	2	0.945	ppb	2.26	4,819.80	6.318E-02	Pulse	0.30	3
Cr	52	45	2	1.016	ppb	2.03	6,355.87	8.332E-02	Pulse	0.30	3
Mn	55	45	2	0.564	ppb	8.62	1,830.31	2.401E-02	Pulse	0.30	3
Fe	56	45	2	10.548	ppb	1.45	54,208.38	7.106E-01	Pulse	0.30	3
Co	59	45	2	0.506	ppb	4.26	5,368.82	7.036E-02	Pulse	0.30	3
Ni	60	72	2	1.070	ppb	4.70	3,194.82	5.958E-02	Pulse	0.30	3
Cu	63	72	2	0.978	ppb	2.32	8,656.09	1.614E-01	Pulse	0.30	3
Zn	66	72	2	9.913	ppb	1.76	12,731.74	2.374E-01	Pulse	0.30	3
As	75	72	2	0.104	ppb	14.02	73.34	1.367E-03	Pulse	0.75	3
Se	78	72	1	0.559	ppb	9.06	170.01	2.657E-03	Pulse	0.30	3
Mo	95	103	2	0.506	ppb	5.72	1,949.10	1.186E-03	Pulse	0.30	3
Ag	107	103	3	0.291	ppb	11.45	8,996.47	2.581E-03	Pulse	0.30	3
Cd	111	115	3	0.504	ppb	1.93	3,792.45	9.758E-04	Pulse	0.30	3
Sb	121	115	3	0.546	ppb	1.89	13,454.01	3.462E-03	Pulse	0.30	3
Ba	137	159	3	1.135	ppb	0.56	10,573.49	1.692E-03	Pulse	0.30	3
Tl	205	209	3	0.444	ppb	1.65	33,995.56	8.062E-03	Pulse	0.30	3
Pb	208	209	3	1.062	ppb	0.61	110,321.60	2.616E-02	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.502	ppb	1.35	58,489.21	1.387E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,277,307.93	0.19	75.0	Analog	0.30	3
2	Sc	45	76,279.54	1.25	84.2	Pulse	0.30	3
3	Sc	45	2,002,937.02	0.19	84.0	Analog	0.30	3
1	Ge	72	63,929.41	1.28	91.4	Pulse	0.30	3
2	Ge	72	53,633.30	1.12	88.5	Pulse	0.30	3
2	Rh	103	1,643,274.60	2.18	89.9	Analog	0.30	3
3	Rh	103	3,485,219.18	0.18	94.0	Analog	0.30	3
3	In	115	3,886,558.06	0.50	97.3	Analog	0.30	3
3	Tb	159	6,250,283.59	0.44	97.8	Analog	0.30	3
3	Bi	209	4,217,087.99	0.67	98.8	Analog	0.30	3

Quantitation Report

File Name	A0516107.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:50
Sample Name	ICSA4,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	94.24	21.11	1.297E-05	Pulse	0.30	3
B	11	6	3	<0.000	ppb	---	42,545.43	2.617E-02	Pulse	0.30	3
Na	23	45	2	92633.292	ppb	0.66	130,405,311.39	1.349E+03	Analog	0.30	3
Mg	26	45	2	94934.670	ppb	0.36	11,928,032.74	1.234E+02	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	162.72	1.657E-03	Pulse	0.30	3
K	39	45	2	103751.698	ppb	0.76	41,972,145.21	4.342E+02	Analog	0.30	3
Ca	44	45	3	93023.687	ppb	0.48	125,972,913.68	4.489E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	568.93	5.878E-03	Pulse	0.30	3
Cr	52	45	2	0.140	ppb	10.15	1,750.09	1.809E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-14,662.80	-1.517E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-4,227.83	-4.365E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-12.77	-1.272E-04	Pulse	0.30	3
Ni	60	72	2	0.150	ppb	23.96	624.70	1.035E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-4,624.80	-7.632E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-389.01	-6.433E-03	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	6.89	1.183E-04	Pulse	0.75	3
Se	78	72	1	0.017	ppb	173.21	5.56	8.208E-05	Pulse	0.30	3
Mo	95	103	2	0.029	ppb	20.12	135.56	8.156E-05	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-29,092.78	-7.587E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-9,173.95	-2.152E-03	Pulse	0.30	3
Sb	121	115	3	0.014	ppb	9.01	594.48	1.385E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-72,640.50	-1.076E-02	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	12.54	1,471.26	3.920E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-96,220.62	-2.563E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-7,440.81	-1.983E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,625,662.12	1.54	95.4	Analog	0.30	3
2	Sc	45	96,671.95	2.81	106.7	Pulse	0.30	3
3	Sc	45	2,806,250.31	1.62	117.8	Analog	0.30	3
1	Ge	72	68,081.52	1.40	97.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	60,578.80	3.79	99.9	Pulse	0.30	3
2	Rh	103	1,663,547.88	1.48	91.0	Analog	0.30	3
3	Rh	103	3,834,644.53	0.99	103.5	Analog	0.30	3
3	In	115	4,294,341.27	0.79	107.5	Analog	0.30	3
3	Tb	159	6,754,487.68	0.25	105.7	Analog	0.30	3
3	Bi	209	3,752,498.42	0.38	87.9	Analog	0.30	3

Quantitation Report

File Name	A0516108.D
File Path	C:\ICPMH\1\DATA\160516A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/16/2016 16:55
Sample Name	ICSAB4,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/16/2016 08:39
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.598	ppb	0.27	194,739.04	1.171E-01	Pulse	0.30	3
B	11	6	3	193.310	ppb	0.32	1,878,931.32	1.130E+00	Analog	0.30	3
Na	23	45	2	89063.427	ppb	0.74	130,661,828.05	1.297E+03	Analog	0.30	3
Mg	26	45	2	91999.861	ppb	0.64	12,045,289.40	1.196E+02	Analog	0.30	3
Al	27	45	2	24.256	ppb	1.19	6,784.26	6.736E-02	Pulse	0.30	3
K	39	45	2	101188.535	ppb	1.32	42,656,637.14	4.234E+02	Analog	0.30	3
Ca	44	45	3	91177.980	ppb	0.39	127,083,099.22	4.400E+01	Analog	0.30	3
V	51	45	2	20.273	ppb	0.97	114,216.09	1.134E+00	Pulse	0.30	3
Cr	52	45	2	19.158	ppb	0.97	144,462.85	1.434E+00	Pulse	0.30	3
Mn	55	45	2	21.466	ppb	1.76	88,028.43	8.738E-01	Pulse	0.30	3
Fe	56	45	2	18.161	ppb	1.74	122,277.81	1.214E+00	Pulse	0.30	3
Co	59	45	2	18.265	ppb	1.06	254,458.47	2.526E+00	Pulse	0.30	3
Ni	60	72	2	19.011	ppb	2.35	62,916.26	1.020E+00	Pulse	0.30	3
Cu	63	72	2	17.287	ppb	0.88	161,846.17	2.622E+00	Pulse	0.30	3
Zn	66	72	2	17.425	ppb	2.81	25,124.17	4.073E-01	Pulse	0.30	3
As	75	72	2	20.472	ppb	1.06	14,264.55	2.311E-01	Pulse	0.75	3
Se	78	72	1	17.664	ppb	1.68	5,958.01	8.392E-02	Pulse	0.30	3
Mo	95	103	2	22.617	ppb	1.80	89,231.38	5.245E-02	Pulse	0.30	3
Ag	107	103	3	18.324	ppb	1.71	610,158.67	1.575E-01	Pulse	0.30	3
Cd	111	115	3	17.540	ppb	11.48	143,128.87	3.292E-02	Pulse	0.30	3
Sb	121	115	3	20.259	ppb	0.23	550,834.35	1.268E-01	Pulse	0.30	3
Ba	137	159	3	19.293	ppb	8.74	192,757.08	2.864E-02	Pulse	0.30	3
Tl	205	209	3	21.483	ppb	0.73	1,415,080.90	3.816E-01	Analog	0.30	3
Pb	208	209	3	20.581	ppb	0.78	1,857,439.74	5.008E-01	Pulse	0.30	3
U	238	209	3	21.955	ppb	0.76	2,242,790.30	6.048E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,663,201.20	1.62	97.7	Analog	0.30	3
2	Sc	45	100,728.83	1.18	111.2	Pulse	0.30	3
3	Sc	45	2,888,284.92	1.67	121.2	Analog	0.30	3
1	Ge	72	71,011.56	1.90	101.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	61,726.62	3.21	101.8	Pulse	0.30	3
2	Rh	103	1,701,213.83	1.74	93.0	Analog	0.30	3
3	Rh	103	3,873,099.67	1.55	104.5	Analog	0.30	3
3	In	115	4,344,711.75	1.14	108.8	Analog	0.30	3
3	Tb	159	6,726,680.66	1.43	105.2	Analog	0.30	3
3	Bi	209	3,708,536.71	1.68	86.9	Analog	0.30	3



RAW DATA

INJECTION LOG: 160518A2

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0518001.D	RINSE	RINSE	1	05/18/16 4:34 PM
A0518002.D	Cal Blank	IBLK	1	05/18/16 4:40 PM
A0518003.D	Std1-0.1/1 ppb	ICAL	1	05/18/16 4:45 PM
A0518004.D	Std2-0.5/5 ppb	ICAL	1	05/18/16 4:51 PM
A0518005.D	Std3-5/50 ppb	ICAL	1	05/18/16 4:56 PM
A0518006.D	Std4-10/100 ppb	ICAL	1	05/18/16 5:02 PM
A0518007.D	Std5-20/200 ppb	ICAL	1	05/18/16 5:07 PM
A0518008.D	Std6-40/400 ppb	ICAL	1	05/18/16 5:13 PM
A0518009.D	Std7-100/1000 ppb	ICAL	1	05/18/16 5:18 PM
A0518010.D	Std8-200/2000 ppb	ICAL	1	05/18/16 5:24 PM
A0518011.D	ICV	ICV	1	05/18/16 5:29 PM
A0518012.D	ICB	ICB	1	05/18/16 5:35 PM
A0518013.D	LLICV	CCV1	1	05/18/16 5:40 PM
A0518014.D	ICSA1	ICSA	1	05/18/16 5:46 PM
A0518015.D	ICSAB1	ICSAB	1	05/18/16 5:51 PM
A0518016.D	N019628-007B	SAMP	1	05/18/16 5:55 PM
A0518017.D	MB-58428	MBLK	1	05/18/16 6:00 PM
A0518018.D	LCS-58428	LCS	1	05/18/16 6:08 PM
A0518019.D	N019730-001B	SAMP	1	05/18/16 6:14 PM
A0518020.D	N019730-001B	SAMP	5	05/18/16 6:19 PM
A0518021.D	N019730-001B-PS	PS	1	05/18/16 6:25 PM
A0518022.D	N019730-001B-MS	MS	1	05/18/16 6:30 PM
A0518023.D	N019730-001B-MSD	MSD	1	05/18/16 6:36 PM
A0518024.D	N019730-002B	SAMP	1	05/18/16 6:41 PM
A0518025.D	N019730-003B	SAMP	1	05/18/16 6:47 PM
A0518026.D	CCV1	CCV	1	05/18/16 6:52 PM
A0518027.D	CCB1	CCB	1	05/18/16 6:58 PM
A0518028.D	N019741-001B	SAMP	1	05/18/16 7:03 PM
A0518029.D	N019741-002B	SAMP	1	05/18/16 7:09 PM
A0518030.D	N019730-001B	SAMP	25	05/18/16 7:14 PM
A0518031.D	N019730-001B-PS	PS	5	05/18/16 7:20 PM
A0518032.D	N019730-001B-MS	MS	5	05/18/16 7:25 PM
A0518033.D	N019730-001B-MSD	MSD	5	05/18/16 7:31 PM
A0518034.D	N019730-002B	SAMP	5	05/18/16 7:36 PM
A0518035.D	N019741-001B	SAMP	25	05/18/16 7:42 PM
A0518036.D	N019741-002B	SAMP	25	05/18/16 7:48 PM
A0518037.D	N019607-010B	SAMP	1	05/18/16 7:53 PM
A0518038.D	CCV2	CCV	1	05/18/16 7:59 PM
A0518039.D	CCB2	CCB	1	05/18/16 8:04 PM
A0518040.D	N019607-010A	SAMP	1	05/18/16 8:10 PM
A0518041.D	N019611-012B	SAMP	1	05/18/16 8:15 PM
A0518042.D	N019611-012A	SAMP	1	05/18/16 8:21 PM

5/20/2016

INJECTION LOG: 160518A2

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0518043.D	N019639-015B	SAMP	1	05/18/16 8:26 PM
A0518044.D	N019639-015A	SAMP	1	05/18/16 8:32 PM
A0518045.D	CCV3	CCV	1	05/18/16 8:37 PM
A0518046.D	CCB3	CCB	1	05/18/16 8:43 PM
A0518047.D	LLCCV1	CCV2	1	05/18/16 8:48 PM
A0518048.D	ICSA2	ICSA	1	05/18/16 8:54 PM
A0518049.D	ICSAB2	ICSAB	1	05/18/16 8:59 PM

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	A0518001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	A0518002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	A0518003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 160401C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	A0518004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 160401C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	A0518005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 160401C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	A0518006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 160401C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1106	A0518007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 160401C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	A0518008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 160401C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	A0518009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 160401C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	A0518010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 160401C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	A0518011	ICV,ICV,1	10/100 ug/L,200mL of 2MWST- 160201C	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	A0518012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0518013	LLICV,CCV1,1	2MWST- 160201D	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0518014	ICSA1,ICSA,1	2MWST- 160401D	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0518015	ICSAB1,ICSAB,1	2MWST- 160401E	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2501	A0518016	N019628-007B,SAMP,1	reinjection	1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2101	A0518017	MB-58428,MBLK,1		1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2102	A0518018	LCS-58428,LCS,1		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2103	A0518019	N019730-001B,SAMP,1		1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2104	A0518020	N019730-001B,SAMP,5		1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2105	A0518021	N019730-001B-PS,PS,1		1.000				
22	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2106	A0518022	N019730-001B-MS,MS,1		1.000				
23	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2107	A0518023	N019730-001B-MSD,MSD,1		1.000				
24	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2108	A0518024	N019730-002B,SAMP,1		1.000				
25	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2109	A0518025	N019730-003B,SAMP,1		1.000				
26	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0518026	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
27	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0518027	CCB1,CCB,1		1.000				
28	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2110	A0518028	N019741-001B,SAMP,1		1.000				
29	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2111	A0518029	N019741-002B,SAMP,1		1.000				
30	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2112	A0518030	N019730-001B,SAMP,25		1.000				
31	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2201	A0518031	N019730-001B-PS,PS,5		1.000				
32	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2202	A0518032	N019730-001B-MS,MS,5		1.000				
33	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2203	A0518033	N019730-001B-MSD,MSD,5		1.000				
34	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2204	A0518034	N019730-002B,SAMP,5		1.000				
35	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2205	A0518035	N019741-001B,SAMP,25		1.000				
36	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2206	A0518036	N019741-002B,SAMP,25		1.000				
37	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2502	A0518037	N019607-010B,SAMP,1		1.000				
38	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0518038	CCV2,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
39	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0518039	CCB2,CCB,1		1.000				
40	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2503	A0518040	N019607-010A,SAMP,1		1.000				
41	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2504	A0518041	N019611-012B,SAMP,1		1.000				
42	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2505	A0518042	N019611-012A,SAMP,1		1.000				
43	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2506	A0518043	N019639-015B,SAMP,1		1.000				
44	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2507	A0518044	N019639-015A,SAMP,1		1.000				
45	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0518045	CCV3,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
46	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0518046	CCB3,CCB,1		1.000				
47	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0518047	LLCCV1,CCV2,1	2MWST- 160201D	1.000				
48	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0518048	ICSA2,ICSA,1	2MWST- 160401D	1.000				
49	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0518049	ICSAB2,ICSAB,1	2MWST- 160401E	1.000				

Quantitation Report

File Name	A0518002.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 16:40
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	---	28.89	1.146E-05	Pulse	0.30	3
B	11	6	3	0.000	ppb	---	295,749.63	1.173E-01	Pulse	0.30	3
Na	23	45	2	0.000	ppb	---	279,015.29	1.979E+00	Pulse	0.30	3
Mg	26	45	2	0.000	ppb	---	132.23	9.393E-04	Pulse	0.30	3
Al	27	45	2	0.000	ppb	---	1,111.23	7.883E-03	Pulse	0.30	3
K	39	45	2	0.000	ppb	---	26,617.69	1.888E-01	Pulse	0.30	3
Ca	44	45	3	0.000	ppb	---	18,992.75	4.807E-03	Pulse	0.30	3
V	51	45	2	0.000	ppb	---	1,176.77	8.341E-03	Pulse	0.30	3
Cr	52	45	2	0.000	ppb	---	1,399.84	9.923E-03	Pulse	0.30	3
Mn	55	45	2	0.000	ppb	---	384.09	2.724E-03	Pulse	0.30	3
Fe	56	45	2	0.000	ppb	---	6,932.61	4.914E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	---	65.27	4.644E-04	Pulse	0.30	3
Ni	60	72	2	0.000	ppb	---	319.71	3.501E-03	Pulse	0.30	3
Cu	63	72	2	0.000	ppb	---	3,192.81	3.495E-02	Pulse	0.30	3
Zn	66	72	2	0.000	ppb	---	616.77	6.750E-03	Pulse	0.30	3
As	75	72	2	0.000	ppb	---	28.45	3.118E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	1.11	1.104E-05	Pulse	0.30	3
Mo	95	103	2	0.000	ppb	---	111.11	4.096E-05	Pulse	0.30	3
Ag	107	103	3	0.000	ppb	---	3,303.85	5.839E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	---	25.51	4.249E-06	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	---	565.59	9.423E-05	Pulse	0.30	3
Ba	137	159	3	0.000	ppb	---	354.61	3.995E-05	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	---	1,764.63	3.166E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	---	2,655.53	4.765E-04	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.000	ppb	---	272.88	4.896E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,521,843.56	0.64	100.0	Analog	0.30	3
2	Sc	45	141,065.07	2.21	100.0	Pulse	0.30	3
3	Sc	45	3,951,000.60	0.31	100.0	Analog	0.30	3
1	Ge	72	101,825.34	1.15	100.0	Pulse	0.30	3
2	Ge	72	91,308.55	1.30	100.0	Pulse	0.30	3
2	Rh	103	2,712,548.53	1.86	100.0	Analog	0.30	3
3	Rh	103	5,658,379.43	0.56	100.0	Analog	0.30	3
3	In	115	6,002,112.23	0.19	100.0	Analog	0.30	3
3	Tb	159	8,876,461.26	0.16	100.0	Analog	0.30	3
3	Bi	209	5,572,900.20	0.22	100.0	Analog	0.30	3

Quantitation Report

File Name	A0518003.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 16:45
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

As only

5/20/2016

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.093	ppb	7.47	1,431.24	5.654E-04	Pulse	0.30	3
B	11	6	3	<0.000	ppb	---	225,730.08	8.916E-02	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	257,059.82	1.830E+00	Pulse	0.30	3
Mg	26	45	2	1.193	ppb	16.89	344.46	2.450E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	305.54	2.176E-03	Pulse	0.30	3
K	39	45	2	0.991	ppb	214.49	27,089.40	1.929E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,928.18	4.304E-03	Pulse	0.30	3
V	51	45	2	0.094	ppb	6.40	1,926.86	1.370E-02	Pulse	0.30	3
Cr	52	45	2	0.073	ppb	15.23	2,196.64	1.562E-02	Pulse	0.30	3
Mn	55	45	2	0.125	ppb	4.41	1,102.41	7.847E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	5,080.37	3.618E-02	Pulse	0.30	3
Co	59	45	2	0.093	ppb	5.86	1,969.93	1.401E-02	Pulse	0.30	3
Ni	60	72	2	0.103	ppb	15.57	824.19	9.126E-03	Pulse	0.30	3
Cu	63	72	2	0.083	ppb	10.03	4,343.56	4.802E-02	Pulse	0.30	3
Zn	66	72	2	0.120	ppb	17.08	851.28	9.416E-03	Pulse	0.30	3
As	75	72	2	0.111	ppb	15.74	144.01	1.591E-03	Pulse	0.75	3
Se	78	72	1	0.081	ppb	30.33	41.11	4.048E-04	Pulse	0.30	3
Mo	95	103	2	0.095	ppb	2.31	688.93	2.526E-04	Pulse	0.30	3
Ag	107	103	3	0.009	ppb	28.99	3,728.78	6.596E-04	Pulse	0.30	3
Cd	111	115	3	0.097	ppb	8.00	1,135.65	1.886E-04	Pulse	0.30	3
Sb	121	115	3	0.093	ppb	7.15	4,138.51	6.871E-04	Pulse	0.30	3
Ba	137	159	3	0.093	ppb	7.56	1,620.15	1.818E-04	Pulse	0.30	3
Tl	205	209	3	0.089	ppb	2.69	10,804.39	1.923E-03	Pulse	0.30	3
Pb	208	209	3	0.098	ppb	3.04	16,206.81	2.885E-03	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.092	ppb	1.20	14,479.71	2.577E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,531,658.10	0.31	100.4	Analog	0.30	3
2	Sc	45	140,562.62	2.88	99.6	Pulse	0.30	3
3	Sc	45	3,933,095.43	0.15	99.5	Analog	0.30	3
1	Ge	72	101,779.53	1.16	100.0	Pulse	0.30	3
2	Ge	72	90,454.83	2.51	99.1	Pulse	0.30	3
2	Rh	103	2,726,693.64	2.18	100.5	Analog	0.30	3
3	Rh	103	5,652,273.60	0.49	99.9	Analog	0.30	3
3	In	115	6,022,950.78	0.04	100.3	Analog	0.30	3
3	Tb	159	8,909,299.18	0.31	100.4	Analog	0.30	3
3	Bi	209	5,617,909.36	0.30	100.8	Analog	0.30	3

Quantitation Report

File Name	A0518004.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 16:51
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.477	ppb	2.97	6,949.47	2.842E-03	Pulse	0.30	3
B	11	6	3	<0.000	ppb	---	237,453.25	9.709E-02	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	246,581.22	1.817E+00	Pulse	0.30	3
Mg	26	45	2	5.700	ppb	7.01	1,106.75	8.155E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	438.81	3.230E-03	Pulse	0.30	3
K	39	45	2	5.651	ppb	45.42	28,792.33	2.121E-01	Pulse	0.30	3
Ca	44	45	3	3.587	ppb	6.98	24,824.90	6.559E-03	Pulse	0.30	3
V	51	45	2	0.503	ppb	7.16	5,037.67	3.712E-02	Pulse	0.30	3
Cr	52	45	2	0.456	ppb	1.56	6,173.32	4.543E-02	Pulse	0.30	3
Mn	55	45	2	0.486	ppb	2.89	3,080.77	2.267E-02	Pulse	0.30	3
Fe	56	45	2	0.163	ppb	8.34	8,174.47	6.016E-02	Pulse	0.30	3
Co	59	45	2	0.485	ppb	1.61	9,658.51	7.111E-02	Pulse	0.30	3
Ni	60	72	2	0.492	ppb	2.79	2,709.94	3.048E-02	Pulse	0.30	3
Cu	63	72	2	0.496	ppb	2.91	10,002.86	1.125E-01	Pulse	0.30	3
Zn	66	72	2	0.583	ppb	3.24	1,755.74	1.975E-02	Pulse	0.30	3
As	75	72	2	0.522	ppb	12.46	564.91	6.347E-03	Pulse	0.75	3
Se	78	72	1	0.418	ppb	9.28	197.79	2.054E-03	Pulse	0.30	3
Mo	95	103	2	0.493	ppb	3.06	3,022.64	1.139E-03	Pulse	0.30	3
Ag	107	103	3	0.257	ppb	11.82	15,612.54	2.821E-03	Pulse	0.30	3
Cd	111	115	3	0.501	ppb	2.98	5,677.21	9.558E-04	Pulse	0.30	3
Sb	121	115	3	0.480	ppb	1.28	18,632.78	3.138E-03	Pulse	0.30	3
Ba	137	159	3	0.517	ppb	1.94	7,260.39	8.253E-04	Pulse	0.30	3
Tl	205	209	3	0.477	ppb	0.49	49,644.00	8.943E-03	Pulse	0.30	3
Pb	208	209	3	0.495	ppb	0.58	70,341.40	1.267E-02	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.475	ppb	0.54	72,672.36	1.309E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,445,776.39	0.75	97.0	Analog	0.30	3
2	Sc	45	135,853.40	2.61	96.3	Pulse	0.30	3
3	Sc	45	3,785,054.14	0.49	95.8	Analog	0.30	3
1	Ge	72	96,307.25	0.60	94.6	Pulse	0.30	3
2	Ge	72	88,908.35	1.58	97.4	Pulse	0.30	3
2	Rh	103	2,652,170.52	1.22	97.8	Analog	0.30	3
3	Rh	103	5,532,578.67	0.41	97.8	Analog	0.30	3
3	In	115	5,938,875.33	1.05	98.9	Analog	0.30	3
3	Tb	159	8,797,045.42	0.74	99.1	Analog	0.30	3
3	Bi	209	5,551,526.24	0.99	99.6	Analog	0.30	3

Quantitation Report

File Name	A0518005.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 16:56
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	4.803	ppb	1.05	67,882.79	2.850E-02	Pulse	0.30	3
B	11	6	3	37.217	ppb	0.44	775,648.51	3.257E-01	Pulse	0.30	3
Na	23	45	2	29.225	ppb	15.88	312,562.35	2.382E+00	Pulse	0.30	3
Mg	26	45	2	52.127	ppb	3.61	8,782.65	6.693E-02	Pulse	0.30	3
Al	27	45	2	2.554	ppb	14.63	1,877.09	1.431E-02	Pulse	0.30	3
K	39	45	2	50.958	ppb	1.25	52,362.98	3.991E-01	Pulse	0.30	3
Ca	44	45	3	48.832	ppb	0.86	104,994.82	2.865E-02	Pulse	0.30	3
V	51	45	2	4.965	ppb	1.53	38,397.86	2.926E-01	Pulse	0.30	3
Cr	52	45	2	4.846	ppb	1.68	50,873.53	3.877E-01	Pulse	0.30	3
Mn	55	45	2	4.987	ppb	1.90	27,205.37	2.073E-01	Pulse	0.30	3
Fe	56	45	2	4.686	ppb	2.47	47,982.11	3.657E-01	Pulse	0.30	3
Co	59	45	2	4.879	ppb	0.67	93,263.88	7.108E-01	Pulse	0.30	3
Ni	60	72	2	5.071	ppb	1.59	24,463.02	2.817E-01	Pulse	0.30	3
Cu	63	72	2	4.891	ppb	0.97	69,505.92	8.003E-01	Pulse	0.30	3
Zn	66	72	2	5.084	ppb	3.89	10,427.90	1.201E-01	Pulse	0.30	3
As	75	72	2	4.975	ppb	1.19	5,019.05	5.780E-02	Pulse	0.75	3
Se	78	72	1	5.047	ppb	4.01	2,336.93	2.469E-02	Pulse	0.30	3
Mo	95	103	2	4.925	ppb	2.23	28,998.19	1.102E-02	Pulse	0.30	3
Ag	107	103	3	4.451	ppb	2.12	213,168.37	3.939E-02	Pulse	0.30	3
Cd	111	115	3	4.985	ppb	0.48	55,653.07	9.476E-03	Pulse	0.30	3
Sb	121	115	3	4.840	ppb	1.09	180,931.59	3.081E-02	Pulse	0.30	3
Ba	137	159	3	5.134	ppb	1.09	68,929.54	7.844E-03	Pulse	0.30	3
Tl	205	209	3	4.958	ppb	0.72	500,055.15	8.992E-02	Pulse	0.30	3
Pb	208	209	3	4.992	ppb	0.52	685,901.25	1.233E-01	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	4.787	ppb	0.07	731,136.53	1.315E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,381,503.28	0.30	94.4	Analog	0.30	3
2	Sc	45	131,223.62	1.26	93.0	Pulse	0.30	3
3	Sc	45	3,664,266.13	0.36	92.7	Analog	0.30	3
1	Ge	72	94,621.64	0.78	92.9	Pulse	0.30	3
2	Ge	72	86,846.68	1.23	95.1	Pulse	0.30	3
2	Rh	103	2,630,427.58	1.08	97.0	Analog	0.30	3
3	Rh	103	5,412,611.37	0.55	95.7	Analog	0.30	3
3	In	115	5,872,893.61	0.91	97.8	Analog	0.30	3
3	Tb	159	8,788,153.69	0.54	99.0	Analog	0.30	3
3	Bi	209	5,560,978.74	0.67	99.8	Analog	0.30	3

Quantitation Report

File Name	A0518006.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:02
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.745	ppb	0.33	130,950.87	5.782E-02	Pulse	0.30	3
B	11	6	3	91.945	ppb	3.32	1,431,552.78	6.322E-01	Analog	0.30	3
Na	23	45	2	78.931	ppb	6.95	386,982.24	3.068E+00	Pulse	0.30	3
Mg	26	45	2	103.672	ppb	1.43	16,674.41	1.322E-01	Pulse	0.30	3
Al	27	45	2	8.194	ppb	3.80	3,597.78	2.851E-02	Pulse	0.30	3
K	39	45	2	101.940	ppb	2.66	76,873.32	6.094E-01	Pulse	0.30	3
Ca	44	45	3	99.973	ppb	0.37	186,224.44	5.363E-02	Pulse	0.30	3
V	51	45	2	10.017	ppb	1.59	73,407.30	5.819E-01	Pulse	0.30	3
Cr	52	45	2	9.812	ppb	0.99	97,742.53	7.748E-01	Pulse	0.30	3
Mn	55	45	2	10.022	ppb	3.10	52,197.86	4.139E-01	Pulse	0.30	3
Fe	56	45	2	9.665	ppb	2.06	88,559.71	7.021E-01	Pulse	0.30	3
Co	59	45	2	9.807	ppb	1.25	180,181.59	1.428E+00	Pulse	0.30	3
Ni	60	72	2	10.222	ppb	1.17	46,867.02	5.643E-01	Pulse	0.30	3
Cu	63	72	2	9.987	ppb	0.53	132,672.26	1.598E+00	Pulse	0.30	3
Zn	66	72	2	10.388	ppb	1.72	19,789.63	2.383E-01	Pulse	0.30	3
As	75	72	2	9.962	ppb	1.80	9,582.91	1.154E-01	Pulse	0.75	3
Se	78	72	1	9.852	ppb	3.25	4,419.68	4.819E-02	Pulse	0.30	3
Mo	95	103	2	9.828	ppb	1.09	56,699.10	2.196E-02	Pulse	0.30	3
Ag	107	103	3	9.448	ppb	0.91	439,068.55	8.295E-02	Pulse	0.30	3
Cd	111	115	3	9.992	ppb	0.86	109,171.47	1.899E-02	Pulse	0.30	3
Sb	121	115	3	9.805	ppb	0.68	358,266.40	6.231E-02	Pulse	0.30	3
Ba	137	159	3	10.295	ppb	0.61	136,120.61	1.569E-02	Pulse	0.30	3
Tl	205	209	3	9.946	ppb	0.77	1,006,427.05	1.801E-01	Pulse	0.30	3
Pb	208	209	3	9.986	ppb	1.06	1,376,465.52	2.463E-01	Pulse	0.30	3
U	238	209	3	9.801	ppb	1.35	1,504,248.66	2.691E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,264,997.11	1.14	89.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	126,171.74	2.02	89.4	Pulse	0.30	3
3	Sc	45	3,472,590.12	0.52	87.9	Analog	0.30	3
1	Ge	72	91,680.63	2.80	90.0	Pulse	0.30	3
2	Ge	72	83,040.30	1.43	90.9	Pulse	0.30	3
2	Rh	103	2,582,243.38	1.26	95.2	Analog	0.30	3
3	Rh	103	5,292,993.53	0.37	93.5	Analog	0.30	3
3	In	115	5,749,474.23	0.41	95.8	Analog	0.30	3
3	Tb	159	8,676,951.54	0.06	97.8	Analog	0.30	3
3	Bi	209	5,589,289.64	0.73	100.3	Analog	0.30	3

Quantitation Report

File Name	A0518007.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:07
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.400	ppb	1.12	242,799.34	1.151E-01	Pulse	0.30	3
B	11	6	3	191.709	ppb	0.54	2,512,377.96	1.191E+00	Analog	0.30	3
Na	23	45	2	171.856	ppb	3.28	516,349.34	4.350E+00	Pulse	0.30	3
Mg	26	45	2	207.263	ppb	0.82	31,257.63	2.633E-01	Pulse	0.30	3
Al	27	45	2	18.423	ppb	2.18	6,441.71	5.425E-02	Pulse	0.30	3
K	39	45	2	203.377	ppb	1.11	122,028.12	1.028E+00	Pulse	0.30	3
Ca	44	45	3	195.195	ppb	0.48	324,720.02	1.001E-01	Pulse	0.30	3
V	51	45	2	19.914	ppb	1.48	136,350.71	1.149E+00	Pulse	0.30	3
Cr	52	45	2	19.553	ppb	1.24	182,109.58	1.534E+00	Pulse	0.30	3
Mn	55	45	2	20.198	ppb	1.58	98,674.78	8.313E-01	Pulse	0.30	3
Fe	56	45	2	19.908	ppb	2.44	165,509.58	1.394E+00	Pulse	0.30	3
Co	59	45	2	19.853	ppb	1.09	343,180.22	2.891E+00	Pulse	0.30	3
Ni	60	72	2	20.260	ppb	1.77	88,228.49	1.115E+00	Pulse	0.30	3
Cu	63	72	2	19.756	ppb	0.39	247,388.13	3.126E+00	Pulse	0.30	3
Zn	66	72	2	20.180	ppb	0.92	36,129.42	4.566E-01	Pulse	0.30	3
As	75	72	2	20.065	ppb	0.58	18,369.10	2.322E-01	Pulse	0.75	3
Se	78	72	1	19.662	ppb	1.13	8,389.20	9.617E-02	Pulse	0.30	3
Mo	95	103	2	19.583	ppb	1.66	107,306.31	4.371E-02	Pulse	0.30	3
Ag	107	103	3	19.222	ppb	0.77	844,215.48	1.682E-01	Pulse	0.30	3
Cd	111	115	3	19.958	ppb	0.76	207,210.15	3.792E-02	Pulse	0.30	3
Sb	121	115	3	19.681	ppb	0.71	682,885.81	1.250E-01	Pulse	0.30	3
Ba	137	159	3	20.369	ppb	0.38	261,240.86	3.100E-02	Pulse	0.30	3
Tl	205	209	3	19.803	ppb	0.90	1,973,333.32	3.582E-01	Analog	0.30	3
Pb	208	209	3	19.806	ppb	0.39	2,688,348.01	4.880E-01	Analog	0.30	3
U	238	209	3	19.375	ppb	0.45	2,930,799.53	5.320E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,109,824.28	0.84	83.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	118,719.25	1.55	84.2	Pulse	0.30	3
3	Sc	45	3,243,132.17	0.41	82.1	Analog	0.30	3
1	Ge	72	87,243.01	0.91	85.7	Pulse	0.30	3
2	Ge	72	79,128.76	1.18	86.7	Pulse	0.30	3
2	Rh	103	2,454,787.41	1.16	90.5	Analog	0.30	3
3	Rh	103	5,019,967.63	0.42	88.7	Analog	0.30	3
3	In	115	5,463,829.08	0.23	91.0	Analog	0.30	3
3	Tb	159	8,427,042.51	0.55	94.9	Analog	0.30	3
3	Bi	209	5,509,090.19	0.35	98.9	Analog	0.30	3

Quantitation Report

File Name	A0518008.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:13
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	38.728	ppb	0.78	449,701.12	2.297E-01	Pulse	0.30	3
B	11	6	3	389.735	ppb	0.73	4,501,568.07	2.300E+00	Analog	0.30	3
Na	23	45	2	381.932	ppb	1.97	797,953.83	7.248E+00	Pulse	0.30	3
Mg	26	45	2	411.392	ppb	0.96	57,447.36	5.217E-01	Pulse	0.30	3
Al	27	45	2	40.550	ppb	1.82	12,104.82	1.099E-01	Pulse	0.30	3
K	39	45	2	406.284	ppb	0.60	205,363.38	1.865E+00	Pulse	0.30	3
Ca	44	45	3	392.246	ppb	0.40	589,273.84	1.964E-01	Pulse	0.30	3
V	51	45	2	40.057	ppb	0.92	253,442.43	2.302E+00	Pulse	0.30	3
Cr	52	45	2	39.623	ppb	0.83	341,149.40	3.099E+00	Pulse	0.30	3
Mn	55	45	2	40.690	ppb	0.67	184,083.06	1.672E+00	Pulse	0.30	3
Fe	56	45	2	39.863	ppb	0.63	301,929.48	2.742E+00	Pulse	0.30	3
Co	59	45	2	39.981	ppb	0.83	640,922.55	5.821E+00	Pulse	0.30	3
Ni	60	72	2	40.128	ppb	0.25	164,758.71	2.205E+00	Pulse	0.30	3
Cu	63	72	2	39.342	ppb	0.49	462,553.04	6.191E+00	Pulse	0.30	3
Zn	66	72	2	40.152	ppb	0.32	67,375.68	9.018E-01	Pulse	0.30	3
As	75	72	2	39.792	ppb	0.81	34,372.11	4.601E-01	Pulse	0.75	3
Se	78	72	1	39.506	ppb	0.87	15,731.58	1.932E-01	Pulse	0.30	3
Mo	95	103	2	39.134	ppb	0.85	204,303.02	8.731E-02	Pulse	0.30	3
Ag	107	103	3	39.580	ppb	0.93	1,671,160.50	3.457E-01	Analog	0.30	3
Cd	111	115	3	39.550	ppb	0.64	396,039.84	7.515E-02	Pulse	0.30	3
Sb	121	115	3	39.538	ppb	1.11	1,322,761.74	2.510E-01	Mix	0.30	3
Ba	137	159	3	40.230	ppb	0.52	504,834.30	6.119E-02	Pulse	0.30	3
Tl	205	209	3	39.383	ppb	0.62	3,872,718.69	7.121E-01	Analog	0.30	3
Pb	208	209	3	39.618	ppb	0.75	5,306,191.96	9.757E-01	Analog	0.30	3
U	238	209	3	38.891	ppb	0.59	5,807,596.28	1.068E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,957,508.38	1.08	77.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	110,108.47	1.93	78.1	Pulse	0.30	3
3	Sc	45	3,001,115.89	0.23	76.0	Analog	0.30	3
1	Ge	72	81,421.00	0.14	80.0	Pulse	0.30	3
2	Ge	72	74,712.41	1.55	81.8	Pulse	0.30	3
2	Rh	103	2,340,078.91	2.59	86.3	Analog	0.30	3
3	Rh	103	4,834,688.19	0.12	85.4	Analog	0.30	3
3	In	115	5,270,374.85	0.93	87.8	Analog	0.30	3
3	Tb	159	8,250,347.66	0.11	92.9	Analog	0.30	3
3	Bi	209	5,438,761.38	0.77	97.6	Analog	0.30	3

Quantitation Report

File Name	A0518009.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:18
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	101.022	ppb	1.12	1,120,449.47	5.993E-01	Analog	0.30	3
B	11	6	3	1004.495	ppb	0.40	10,736,721.78	5.742E+00	Analog	0.30	3
Na	23	45	2	1008.881	ppb	0.35	1,686,140.04	1.590E+01	Analog	0.30	3
Mg	26	45	2	1022.030	ppb	0.97	137,320.75	1.295E+00	Pulse	0.30	3
Al	27	45	2	101.108	ppb	1.24	27,829.03	2.624E-01	Pulse	0.30	3
K	39	45	2	1011.712	ppb	0.91	462,777.61	4.363E+00	Pulse	0.30	3
Ca	44	45	3	1013.511	ppb	1.29	1,454,189.14	4.997E-01	Analog	0.30	3
V	51	45	2	100.501	ppb	0.84	611,248.57	5.763E+00	Pulse	0.30	3
Cr	52	45	2	98.660	ppb	1.04	816,760.45	7.701E+00	Pulse	0.30	3
Mn	55	45	2	100.919	ppb	1.41	439,380.28	4.143E+00	Pulse	0.30	3
Fe	56	45	2	99.445	ppb	1.02	717,787.01	6.768E+00	Pulse	0.30	3
Co	59	45	2	101.671	ppb	1.17	1,570,041.81	1.480E+01	Analog	0.30	3
Ni	60	72	2	100.399	ppb	1.09	394,424.64	5.512E+00	Pulse	0.30	3
Cu	63	72	2	98.471	ppb	0.74	1,105,150.25	1.544E+01	Pulse	0.30	3
Zn	66	72	2	100.768	ppb	0.93	161,226.93	2.253E+00	Pulse	0.30	3
As	75	72	2	100.265	ppb	0.11	82,926.12	1.159E+00	Pulse	0.75	3
Se	78	72	1	100.790	ppb	1.48	39,655.12	4.929E-01	Pulse	0.30	3
Mo	95	103	2	99.377	ppb	0.78	501,045.60	2.217E-01	Pulse	0.30	3
Ag	107	103	3	100.408	ppb	0.96	4,087,223.20	8.760E-01	Analog	0.30	3
Cd	111	115	3	99.139	ppb	0.24	967,057.97	1.884E-01	Pulse	0.30	3
Sb	121	115	3	100.351	ppb	0.28	3,269,762.11	6.369E-01	Analog	0.30	3
Ba	137	159	3	99.559	ppb	0.35	1,238,300.99	1.514E-01	Pulse	0.30	3
Tl	205	209	3	98.775	ppb	0.23	9,557,682.01	1.785E+00	Analog	0.30	3
Pb	208	209	3	99.198	ppb	0.28	13,073,240.10	2.442E+00	Analog	0.30	3
U	238	209	3	98.724	ppb	0.59	14,510,273.10	2.711E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,869,734.91	0.28	74.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	106,063.69	0.30	75.2	Pulse	0.30	3
3	Sc	45	2,909,988.25	0.23	73.7	Analog	0.30	3
1	Ge	72	80,448.21	0.51	79.0	Pulse	0.30	3
2	Ge	72	71,559.46	0.82	78.4	Pulse	0.30	3
2	Rh	103	2,260,400.73	0.51	83.3	Analog	0.30	3
3	Rh	103	4,665,990.62	0.47	82.5	Analog	0.30	3
3	In	115	5,133,943.62	0.19	85.5	Analog	0.30	3
3	Tb	159	8,180,644.81	0.14	92.2	Analog	0.30	3
3	Bi	209	5,353,093.12	0.10	96.1	Analog	0.30	3

Quantitation Report

File Name	A0518010.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:24
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	199.821	ppb	0.54	2,170,298.00	1.185E+00	Analog	0.30	3
B	11	6	3	2001.357	ppb	0.37	20,735,209.76	1.132E+01	Analog	0.30	3
Na	23	45	2	2003.560	ppb	0.71	3,130,877.49	2.962E+01	Analog	0.30	3
Mg	26	45	2	1985.743	ppb	0.91	265,795.76	2.515E+00	Pulse	0.30	3
Al	27	45	2	199.645	ppb	0.69	53,949.42	5.104E-01	Pulse	0.30	3
K	39	45	2	1992.429	ppb	0.21	888,941.39	8.410E+00	Pulse	0.30	3
Ca	44	45	3	1995.306	ppb	0.60	2,796,324.61	9.792E-01	Analog	0.30	3
V	51	45	2	199.747	ppb	0.44	1,209,902.46	1.145E+01	Mix	0.30	3
Cr	52	45	2	200.803	ppb	0.75	1,655,583.58	1.566E+01	Analog	0.30	3
Mn	55	45	2	199.382	ppb	0.28	864,848.13	8.182E+00	Pulse	0.30	3
Fe	56	45	2	200.339	ppb	0.47	1,435,927.81	1.358E+01	Analog	0.30	3
Co	59	45	2	199.196	ppb	0.62	3,065,612.16	2.900E+01	Analog	0.30	3
Ni	60	72	2	199.736	ppb	1.16	772,215.43	1.096E+01	Pulse	0.30	3
Cu	63	72	2	200.924	ppb	1.02	2,217,318.48	3.148E+01	Analog	0.30	3
Zn	66	72	2	199.546	ppb	1.06	313,832.41	4.455E+00	Pulse	0.30	3
As	75	72	2	199.905	ppb	0.92	162,736.94	2.310E+00	Pulse	0.75	3
Se	78	72	1	199.744	ppb	2.13	75,745.89	9.768E-01	Pulse	0.30	3
Mo	95	103	2	200.537	ppb	0.67	991,760.37	4.473E-01	Pulse	0.30	3
Ag	107	103	3	192.924	ppb	1.64	7,781,863.51	1.683E+00	Analog	0.30	3
Cd	111	115	3	200.525	ppb	0.75	1,947,764.02	3.810E-01	Analog	0.30	3
Sb	121	115	3	199.963	ppb	0.52	6,487,507.75	1.269E+00	Analog	0.30	3
Ba	137	159	3	200.119	ppb	1.17	2,488,306.85	3.042E-01	Analog	0.30	3
Tl	205	209	3	200.760	ppb	0.91	19,137,282.35	3.629E+00	Analog	0.30	3
Pb	208	209	3	200.498	ppb	0.36	26,031,275.94	4.936E+00	Analog	0.30	3
U	238	209	3	200.937	ppb	1.64	29,095,628.87	5.517E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,831,001.01	0.54	72.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	105,703.44	0.94	74.9	Pulse	0.30	3
3	Sc	45	2,855,861.87	0.68	72.3	Analog	0.30	3
1	Ge	72	77,553.48	1.21	76.2	Pulse	0.30	3
2	Ge	72	70,451.39	1.73	77.2	Pulse	0.30	3
2	Rh	103	2,217,366.01	0.90	81.7	Analog	0.30	3
3	Rh	103	4,625,036.04	0.31	81.7	Analog	0.30	3
3	In	115	5,112,362.77	0.39	85.2	Analog	0.30	3
3	Tb	159	8,179,447.72	0.37	92.1	Analog	0.30	3
3	Bi	209	5,274,246.38	0.74	94.6	Analog	0.30	3

Quantitation Report

File Name	A0518011.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:29
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	10/100 ug/L,200mL of 2MWST- 160201C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.284	ppb	1.17	120,181.41	6.102E-02	Pulse	0.30	3
B	11	6	3	2000.763	ppb	1.83	22,298,721.19	1.132E+01	Analog	0.30	3
Na	23	45	2	218.196	ppb	0.91	560,033.20	4.989E+00	Pulse	0.30	3
Mg	26	45	2	105.904	ppb	0.96	15,154.08	1.350E-01	Pulse	0.30	3
Al	27	45	2	198.417	ppb	1.01	56,941.84	5.073E-01	Pulse	0.30	3
K	39	45	2	95.076	ppb	1.01	65,224.55	5.811E-01	Pulse	0.30	3
Ca	44	45	3	132.189	ppb	0.79	212,095.01	6.936E-02	Pulse	0.30	3
V	51	45	2	10.341	ppb	1.56	67,404.16	6.005E-01	Pulse	0.30	3
Cr	52	45	2	10.196	ppb	0.64	90,330.72	8.047E-01	Pulse	0.30	3
Mn	55	45	2	102.948	ppb	0.71	474,353.13	4.226E+00	Pulse	0.30	3
Fe	56	45	2	104.285	ppb	0.77	796,354.90	7.095E+00	Pulse	0.30	3
Co	59	45	2	9.898	ppb	1.25	161,803.52	1.442E+00	Pulse	0.30	3
Ni	60	72	2	10.635	ppb	1.59	45,065.81	5.870E-01	Pulse	0.30	3
Cu	63	72	2	10.138	ppb	0.76	124,486.04	1.621E+00	Pulse	0.30	3
Zn	66	72	2	104.677	ppb	1.08	179,700.85	2.340E+00	Pulse	0.30	3
As	75	72	2	10.408	ppb	0.76	9,258.26	1.206E-01	Pulse	0.75	3
Se	78	72	1	10.585	ppb	9.91	4,165.19	5.178E-02	Pulse	0.30	3
Mo	95	103	2	10.938	ppb	2.31	58,803.08	2.443E-02	Pulse	0.30	3
Ag	107	103	3	10.717	ppb	1.22	469,780.37	9.402E-02	Pulse	0.30	3
Cd	111	115	3	10.457	ppb	0.99	108,647.61	1.987E-02	Pulse	0.30	3
Sb	121	115	3	10.688	ppb	0.96	371,309.67	6.792E-02	Pulse	0.30	3
Ba	137	159	3	107.085	ppb	0.95	1,412,366.24	1.628E-01	Analog	0.30	3
Tl	205	209	3	10.605	ppb	1.06	1,100,323.82	1.920E-01	Pulse	0.30	3
Pb	208	209	3	10.420	ppb	0.17	1,472,698.73	2.570E-01	Pulse	0.30	3
U	238	209	3	10.025	ppb	0.17	1,577,841.94	2.753E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,969,818.34	1.05	78.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	112,246.90	0.64	79.6	Pulse	0.30	3
3	Sc	45	3,058,036.27	0.58	77.4	Analog	0.30	3
1	Ge	72	80,477.29	0.65	79.0	Pulse	0.30	3
2	Ge	72	76,782.03	1.18	84.1	Pulse	0.30	3
2	Rh	103	2,406,565.80	0.93	88.7	Analog	0.30	3
3	Rh	103	4,996,820.06	0.38	88.3	Analog	0.30	3
3	In	115	5,467,339.53	0.54	91.1	Analog	0.30	3
3	Tb	159	8,674,946.47	0.56	97.7	Analog	0.30	3
3	Bi	209	5,731,204.15	0.13	102.8	Analog	0.30	3

Quantitation Report

File Name	A0518012.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:35
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	46.88	75.56	3.847E-05	Pulse	0.30	3
B	11	6	3	27.111	ppb	4.17	528,958.15	2.691E-01	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	119,315.12	1.071E+00	Pulse	0.30	3
Mg	26	45	2	0.053	ppb	367.06	112.23	1.006E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	324.45	2.913E-03	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	17,626.62	1.582E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	12,150.46	4.010E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	708.94	6.362E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	776.59	6.966E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	274.64	2.464E-03	Pulse	0.30	3
Fe	56	45	2	0.297	ppb	3.73	7,708.02	6.917E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	1239.71	53.21	4.768E-04	Pulse	0.30	3
Ni	60	72	2	0.001	ppb	306.48	275.43	3.576E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,047.76	2.662E-02	Pulse	0.30	3
Zn	66	72	2	0.120	ppb	35.84	726.19	9.418E-03	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	24.00	3.107E-04	Pulse	0.75	3
Se	78	72	1	0.014	ppb	116.31	6.67	8.029E-05	Pulse	0.30	3
Mo	95	103	2	0.149	ppb	6.46	903.40	3.734E-04	Pulse	0.30	3
Ag	107	103	3	0.142	ppb	4.79	9,155.46	1.819E-03	Pulse	0.30	3
Cd	111	115	3	0.004	ppb	30.95	67.57	1.236E-05	Pulse	0.30	3
Sb	121	115	3	0.075	ppb	5.44	3,112.67	5.693E-04	Pulse	0.30	3
Ba	137	159	3	0.008	ppb	34.09	458.00	5.284E-05	Pulse	0.30	3
Tl	205	209	3	0.163	ppb	5.16	18,544.62	3.266E-03	Pulse	0.30	3
Pb	208	209	3	0.007	ppb	6.61	3,747.76	6.600E-04	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.004	ppb	8.87	943.43	1.662E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,965,745.99	0.75	77.9	Analog	0.30	3
2	Sc	45	111,431.28	0.78	79.0	Pulse	0.30	3
3	Sc	45	3,030,240.23	0.19	76.7	Analog	0.30	3
1	Ge	72	84,047.09	1.87	82.5	Pulse	0.30	3
2	Ge	72	76,998.74	2.18	84.3	Pulse	0.30	3
2	Rh	103	2,419,765.07	1.11	89.2	Analog	0.30	3
3	Rh	103	5,032,294.65	0.53	88.9	Analog	0.30	3
3	In	115	5,468,030.67	0.26	91.1	Analog	0.30	3
3	Tb	159	8,667,442.93	0.38	97.6	Analog	0.30	3
3	Bi	209	5,678,412.48	0.29	101.9	Analog	0.30	3

Quantitation Report

File Name	A0518013.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:40
Sample Name	LLICV,CCV1,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.509	ppb	2.25	5,987.94	3.033E-03	Pulse	0.30	3
B	11	6	3	7.827	ppb	5.18	318,134.53	1.611E-01	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	113,968.65	1.040E+00	Pulse	0.30	3
Mg	26	45	2	0.145	ppb	118.53	123.34	1.123E-03	Pulse	0.30	3
Al	27	45	2	7.583	ppb	1.92	2,958.16	2.697E-02	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	17,115.03	1.561E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	10,641.61	3.546E-03	Pulse	0.30	3
V	51	45	2	1.017	ppb	3.12	7,301.93	6.657E-02	Pulse	0.30	3
Cr	52	45	2	0.999	ppb	4.73	9,630.88	8.783E-02	Pulse	0.30	3
Mn	55	45	2	0.498	ppb	7.16	2,541.53	2.316E-02	Pulse	0.30	3
Fe	56	45	2	10.121	ppb	0.30	80,373.36	7.329E-01	Pulse	0.30	3
Co	59	45	2	0.503	ppb	1.97	8,075.52	7.363E-02	Pulse	0.30	3
Ni	60	72	2	1.053	ppb	6.01	4,680.72	6.125E-02	Pulse	0.30	3
Cu	63	72	2	0.945	ppb	1.48	13,970.82	1.828E-01	Pulse	0.30	3
Zn	66	72	2	10.327	ppb	2.21	18,113.49	2.370E-01	Pulse	0.30	3
As	75	72	2	0.091	ppb	15.64	104.45	1.366E-03	Pulse	0.75	3
Se	78	72	1	0.579	ppb	11.41	234.46	2.842E-03	Pulse	0.30	3
Mo	95	103	2	0.569	ppb	7.18	3,169.35	1.310E-03	Pulse	0.30	3
Ag	107	103	3	0.350	ppb	6.88	18,179.55	3.632E-03	Pulse	0.30	3
Cd	111	115	3	0.527	ppb	1.65	5,476.61	1.005E-03	Pulse	0.30	3
Sb	121	115	3	0.569	ppb	1.98	20,202.61	3.707E-03	Pulse	0.30	3
Ba	137	159	3	1.040	ppb	1.22	14,035.85	1.621E-03	Pulse	0.30	3
Tl	205	209	3	0.498	ppb	2.09	53,166.41	9.313E-03	Pulse	0.30	3
Pb	208	209	3	1.038	ppb	0.37	148,575.15	2.603E-02	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.493	ppb	0.81	77,551.16	1.358E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,974,732.97	1.01	78.3	Analog	0.30	3
2	Sc	45	109,668.26	1.78	77.7	Pulse	0.30	3
3	Sc	45	3,001,233.77	0.34	76.0	Analog	0.30	3
1	Ge	72	82,467.05	0.69	81.0	Pulse	0.30	3
2	Ge	72	76,432.28	0.83	83.7	Pulse	0.30	3
2	Rh	103	2,418,655.76	1.49	89.2	Analog	0.30	3
3	Rh	103	5,005,754.79	0.09	88.5	Analog	0.30	3
3	In	115	5,449,234.66	0.35	90.8	Analog	0.30	3
3	Tb	159	8,659,908.62	0.19	97.6	Analog	0.30	3
3	Bi	209	5,708,835.75	0.66	102.4	Analog	0.30	3

Quantitation Report

File Name	A0518014.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:46
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	76.06	55.56	2.456E-05	Pulse	0.30	3
B	11	6	3	<0.000	ppb	---	240,207.17	1.061E-01	Pulse	0.30	3
Na	23	45	2	100009.068	ppb	1.62	175,960,290.71	1.382E+03	Analog	0.30	3
Mg	26	45	2	98749.343	ppb	1.62	15,919,643.79	1.250E+02	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	253.59	1.983E-03	Pulse	0.30	3
K	39	45	2	101851.281	ppb	1.39	53,546,393.65	4.204E+02	Analog	0.30	3
Ca	44	45	3	91962.960	ppb	0.56	168,448,024.16	4.491E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	683.38	5.367E-03	Pulse	0.30	3
Cr	52	45	2	0.103	ppb	5.20	2,283.70	1.793E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-19,923.31	-1.565E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-3,102.88	-2.442E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-9.01	-6.179E-05	Pulse	0.30	3
Ni	60	72	2	0.140	ppb	9.45	883.31	1.119E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-5,755.55	-7.280E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-420.39	-5.341E-03	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-0.64	-8.118E-06	Pulse	0.75	3
Se	78	72	1	0.037	ppb	45.46	15.55	1.911E-04	Pulse	0.30	3
Mo	95	103	2	0.059	ppb	19.10	387.80	1.716E-04	Pulse	0.30	3
Ag	107	103	3	0.004	ppb	157.55	3,040.65	6.186E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-335.54	-6.230E-05	Pulse	0.30	3
Sb	121	115	3	0.036	ppb	4.13	1,740.18	3.231E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-26,650.51	-3.154E-03	Pulse	0.30	3
Tl	205	209	3	0.041	ppb	7.07	4,901.02	1.058E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,177.78	-2.547E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	17.15	572.05	1.236E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,264,989.90	0.97	89.8	Analog	0.30	3
2	Sc	45	127,354.66	3.15	90.3	Pulse	0.30	3
3	Sc	45	3,750,618.69	0.83	94.9	Analog	0.30	3
1	Ge	72	81,080.43	2.05	79.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	79,030.33	2.24	86.6	Pulse	0.30	3
2	Rh	103	2,257,126.46	1.80	83.2	Analog	0.30	3
3	Rh	103	4,915,171.14	0.18	86.9	Analog	0.30	3
3	In	115	5,387,006.63	0.39	89.8	Analog	0.30	3
3	Tb	159	8,450,251.96	0.29	95.2	Analog	0.30	3
3	Bi	209	4,629,707.50	0.67	83.1	Analog	0.30	3

Quantitation Report

File Name	A0518015.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:51
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	18.953	ppb	0.12	267,062.18	1.124E-01	Pulse	0.30	3
B	11	6	3	189.243	ppb	1.71	2,795,797.51	1.177E+00	Analog	0.30	3
Na	23	45	2	96520.456	ppb	0.69	182,191,103.95	1.334E+03	Analog	0.30	3
Mg	26	45	2	95785.539	ppb	0.34	16,565,326.00	1.213E+02	Analog	0.30	3
Al	27	45	2	22.568	ppb	1.47	8,836.04	6.469E-02	Pulse	0.30	3
K	39	45	2	99221.264	ppb	0.77	55,960,372.50	4.096E+02	Analog	0.30	3
Ca	44	45	3	89419.692	ppb	0.74	173,136,055.19	4.367E+01	Analog	0.30	3
V	51	45	2	20.161	ppb	0.65	158,858.39	1.163E+00	Pulse	0.30	3
Cr	52	45	2	18.920	ppb	0.93	202,846.69	1.485E+00	Pulse	0.30	3
Mn	55	45	2	20.485	ppb	1.33	115,193.96	8.431E-01	Pulse	0.30	3
Fe	56	45	2	18.288	ppb	0.72	175,517.15	1.285E+00	Pulse	0.30	3
Co	59	45	2	18.011	ppb	0.33	358,311.71	2.623E+00	Pulse	0.30	3
Ni	60	72	2	19.517	ppb	0.76	89,025.02	1.074E+00	Pulse	0.30	3
Cu	63	72	2	17.527	ppb	0.39	230,203.18	2.778E+00	Pulse	0.30	3
Zn	66	72	2	17.954	ppb	1.67	33,719.51	4.070E-01	Pulse	0.30	3
As	75	72	2	19.545	ppb	1.93	18,743.12	2.262E-01	Pulse	0.75	3
Se	78	72	1	17.714	ppb	2.31	7,573.23	8.664E-02	Pulse	0.30	3
Mo	95	103	2	22.692	ppb	0.82	119,485.63	5.065E-02	Pulse	0.30	3
Ag	107	103	3	18.525	ppb	0.41	822,837.57	1.621E-01	Pulse	0.30	3
Cd	111	115	3	18.346	ppb	1.71	193,757.81	3.486E-02	Pulse	0.30	3
Sb	121	115	3	19.749	ppb	0.92	697,091.33	1.254E-01	Pulse	0.30	3
Ba	137	159	3	22.824	ppb	0.48	296,775.11	3.473E-02	Pulse	0.30	3
Tl	205	209	3	21.530	ppb	0.35	1,790,539.33	3.894E-01	Analog	0.30	3
Pb	208	209	3	21.150	ppb	0.17	2,395,863.05	5.211E-01	Pulse	0.30	3
U	238	209	3	22.254	ppb	0.55	2,809,692.72	6.111E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,375,204.56	0.82	94.2	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	136,612.22	1.86	96.8	Pulse	0.30	3
3	Sc	45	3,964,619.11	0.38	100.3	Analog	0.30	3
1	Ge	72	87,393.03	1.22	85.8	Pulse	0.30	3
2	Ge	72	82,872.53	2.23	90.8	Pulse	0.30	3
2	Rh	103	2,358,985.66	1.83	87.0	Analog	0.30	3
3	Rh	103	5,076,385.06	0.73	89.7	Analog	0.30	3
3	In	115	5,558,503.62	0.72	92.6	Analog	0.30	3
3	Tb	159	8,544,638.97	0.13	96.3	Analog	0.30	3
3	Bi	209	4,598,045.87	0.27	82.5	Analog	0.30	3

Quantitation Report

File Name	A0518016.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 17:55
Sample Name	N019628-007B,SAMP,1
Sample Type	Sample
Comment	reinjection
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Cr only

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.022	ppb	32.15	26.66	1.403E-04	Pulse	0.30	3
B	11	6	3	5994.630	ppb	9.18	6,463,375.03	3.369E+01	Analog	0.30	3
Na	23	45	2	OR	ppb	---	OR	-9.907E-05	Error	0.30	3
Mg	26	45	2	34334.987	ppb	0.93	4,389,542.75	4.347E+01	Analog	0.30	3
Al	27	45	2	2.130	ppb	14.14	1,339.05	1.325E-02	Pulse	0.30	3
K	39	45	2	40834.627	ppb	0.42	17,038,365.16	1.687E+02	Analog	0.30	3
Ca	44	45	3	304035.235	ppb	0.11	474,063,730.71	1.485E+02	Analog	0.30	3
V	51	45	2	3.469	ppb	2.55	20,894.99	2.070E-01	Pulse	0.30	3
Cr	52	45	2	1.058	ppb	3.81	9,323.39	9.237E-02	Pulse	0.30	3
Mn	55	45	2	9.826	ppb	0.83	40,988.61	4.058E-01	Pulse	0.30	3
Fe	56	45	2	1.270	ppb	8.36	13,617.24	1.350E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-210.53	-2.093E-03	Pulse	0.30	3
Ni	60	72	2	1.124	ppb	2.75	3,316.80	6.518E-02	Pulse	0.30	3
Cu	63	72	2	3.196	ppb	2.17	27,236.19	5.350E-01	Pulse	0.30	3
Zn	66	72	2	5.708	ppb	5.64	6,814.64	1.340E-01	Pulse	0.30	3
As	75	72	2	1.449	ppb	5.81	867.76	1.705E-02	Pulse	0.75	3
Se	78	72	1	0.265	ppb	37.68	61.11	1.309E-03	Pulse	0.30	3
Mo	95	103	2	10.933	ppb	2.64	32,312.33	2.442E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-13,551.71	-4.556E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-910.43	-2.659E-04	Pulse	0.30	3
Sb	121	115	3	0.135	ppb	4.71	3,249.36	9.486E-04	Pulse	0.30	3
Ba	137	159	3	74.024	ppb	0.96	581,346.67	1.126E-01	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	7.61	1,136.76	4.734E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-50,870.84	-2.119E-02	Pulse	0.30	3
U	238	209	3	0.509	ppb	0.82	33,646.51	1.401E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	192,939.52	9.13	7.7	Analog	0.30	3
2	Sc	45	101,005.18	3.18	71.6	Pulse	0.30	3
3	Sc	45	3,192,910.65	0.88	80.8	Analog	0.30	3
1	Ge	72	46,825.97	2.58	46.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	50,906.02	3.93	55.8	Pulse	0.30	3
2	Rh	103	1,322,753.29	2.28	48.8	Mix	0.30	3
3	Rh	103	2,974,554.64	0.96	52.6	Analog	0.30	3
3	In	115	3,425,118.48	0.31	57.1	Analog	0.30	3
3	Tb	159	5,165,136.62	0.69	58.2	Analog	0.30	3
3	Bi	209	2,401,267.79	0.20	43.1	Analog	0.30	3

Quantitation Report

File Name	A0518017.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:00
Sample Name	MB-58428,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	21.11	7.311E-06	Pulse	0.30	3
B	11	6	3	<0.000	ppb	---	211,166.31	7.306E-02	Pulse	0.30	3
Na	23	45	2	757.969	ppb	6.80	1,764,716.33	1.244E+01	Analog	0.30	3
Mg	26	45	2	8.603	ppb	11.00	1,677.94	1.183E-02	Pulse	0.30	3
Al	27	45	2	7.488	ppb	6.20	3,797.11	2.673E-02	Pulse	0.30	3
K	39	45	2	14.991	ppb	12.77	35,579.95	2.507E-01	Pulse	0.30	3
Ca	44	45	3	36.625	ppb	4.54	98,941.63	2.269E-02	Pulse	0.30	3
V	51	45	2	0.001	ppb	1002.70	1,195.66	8.412E-03	Pulse	0.30	3
Cr	52	45	2	0.069	ppb	18.18	2,168.36	1.528E-02	Pulse	0.30	3
Mn	55	45	2	0.019	ppb	41.83	498.07	3.511E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	6,093.10	4.288E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	343.99	68.07	4.798E-04	Pulse	0.30	3
Ni	60	72	2	0.055	ppb	28.85	604.60	6.499E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,579.68	2.771E-02	Pulse	0.30	3
Zn	66	72	2	0.877	ppb	12.69	2,446.48	2.630E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	20.44	2.197E-04	Pulse	0.75	3
Se	78	72	1	68.158	ppb	173.21	2.22	3.333E-01	Pulse	0.30	3
Mo	95	103	2	0.066	ppb	32.34	517.81	1.877E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	834.42	1.378E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-214.83	-3.283E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	303.35	4.638E-05	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	30.02	3.241E-06	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	806.72	1.413E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	2,664.62	4.666E-04	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	227.55	3.989E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,890,261.97	0.25	114.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	142,007.18	1.90	100.7	Pulse	0.30	3
3	Sc	45	4,359,948.23	0.19	110.4	Analog	0.30	3
1	Ge	72	34,776.19	164.32	34.2	Pulse	0.30	3
2	Ge	72	93,074.67	1.23	101.9	Pulse	0.30	3
2	Rh	103	2,761,618.92	0.88	101.8	Analog	0.30	3
3	Rh	103	6,052,746.93	1.11	107.0	Analog	0.30	3
3	In	115	6,539,094.56	0.84	108.9	Analog	0.30	3
3	Tb	159	9,279,698.75	0.51	104.5	Analog	0.30	3
3	Bi	209	5,709,593.11	0.60	102.5	Analog	0.30	3

Quantitation Report

File Name	A0518018.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:08
Sample Name	LCS-58428,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.515	ppb	1.08	127,615.31	5.645E-02	Pulse	0.30	3
B	11	6	3	1848.082	ppb	0.82	23,659,712.94	1.047E+01	Analog	0.30	3
Na	23	45	2	639.143	ppb	2.51	1,366,093.57	1.080E+01	Analog	0.30	3
Mg	26	45	2	106.283	ppb	1.46	17,147.18	1.355E-01	Pulse	0.30	3
Al	27	45	2	201.835	ppb	1.40	65,282.90	5.159E-01	Pulse	0.30	3
K	39	45	2	130.430	ppb	0.98	91,996.40	7.270E-01	Pulse	0.30	3
Ca	44	45	3	151.747	ppb	0.35	280,621.43	7.891E-02	Pulse	0.30	3
V	51	45	2	9.609	ppb	0.82	70,689.98	5.586E-01	Pulse	0.30	3
Cr	52	45	2	9.333	ppb	1.15	93,337.91	7.375E-01	Pulse	0.30	3
Mn	55	45	2	96.322	ppb	0.30	500,414.09	3.954E+00	Pulse	0.30	3
Fe	56	45	2	102.595	ppb	0.68	883,426.83	6.981E+00	Pulse	0.30	3
Co	59	45	2	8.909	ppb	0.54	164,227.98	1.298E+00	Pulse	0.30	3
Ni	60	72	2	10.282	ppb	1.41	46,076.27	5.677E-01	Pulse	0.30	3
Cu	63	72	2	9.645	ppb	0.94	125,358.71	1.544E+00	Pulse	0.30	3
Zn	66	72	2	96.790	ppb	0.89	175,691.28	2.164E+00	Pulse	0.30	3
As	75	72	2	9.581	ppb	2.04	9,012.80	1.110E-01	Pulse	0.75	3
Se	78	72	1	8.734	ppb	3.70	4,034.02	4.272E-02	Pulse	0.30	3
Mo	95	103	2	10.104	ppb	2.46	53,763.12	2.257E-02	Pulse	0.30	3
Ag	107	103	3	1.707	ppb	12.70	78,264.93	1.546E-02	Pulse	0.30	3
Cd	111	115	3	9.500	ppb	0.22	96,729.48	1.805E-02	Pulse	0.30	3
Sb	121	115	3	9.656	ppb	0.65	328,795.88	6.137E-02	Pulse	0.30	3
Ba	137	159	3	108.412	ppb	0.29	1,282,867.37	1.648E-01	Pulse	0.30	3
Tl	205	209	3	9.717	ppb	1.05	838,968.45	1.759E-01	Pulse	0.30	3
Pb	208	209	3	10.202	ppb	1.18	1,199,811.26	2.516E-01	Pulse	0.30	3
U	238	209	3	9.870	ppb	0.90	1,292,526.06	2.710E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,260,605.70	0.55	89.6	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	126,557.72	1.66	89.7	Pulse	0.30	3
3	Sc	45	3,556,293.17	0.70	90.0	Analog	0.30	3
1	Ge	72	94,424.26	0.38	92.7	Pulse	0.30	3
2	Ge	72	81,177.40	1.34	88.9	Pulse	0.30	3
2	Rh	103	2,381,527.60	0.70	87.8	Analog	0.30	3
3	Rh	103	5,063,407.15	0.54	89.5	Analog	0.30	3
3	In	115	5,357,666.27	0.59	89.3	Analog	0.30	3
3	Tb	159	7,783,095.02	0.67	87.7	Analog	0.30	3
3	Bi	209	4,769,084.75	0.65	85.6	Analog	0.30	3

Quantitation Report

File Name	A0518019.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:14
Sample Name	N019730-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

SAMPLE REFEReNCE

5/20/2016

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	70.74	32.22	1.731E-05	Pulse	0.30	3
B	11	6	3	243.350	ppb	0.69	2,754,787.85	1.480E+00	Analog	0.30	3
Na	23	45	2	251523.273	ppb	0.64	390,071,336.41	3.472E+03	Analog	0.30	3
Mg	26	45	2	24822.994	ppb	1.07	3,530,482.79	3.142E+01	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	569.07	5.060E-03	Pulse	0.30	3
K	39	45	2	5868.655	ppb	0.35	2,741,879.37	2.440E+01	Analog	0.30	3
Ca	44	45	3	87040.875	ppb	0.75	142,584,428.99	4.251E+01	Analog	0.30	3
V	51	45	2	2.369	ppb	5.31	16,180.80	1.440E-01	Pulse	0.30	3
Cr	52	45	2	0.229	ppb	6.55	3,122.52	2.778E-02	Pulse	0.30	3
Mn	55	45	2	291.686	ppb	1.33	1,344,579.05	1.197E+01	Analog	0.30	3
Fe	56	45	2	40.979	ppb	0.72	316,554.91	2.818E+00	Pulse	0.30	3
Co	59	45	2	0.406	ppb	3.65	6,689.71	5.954E-02	Pulse	0.30	3
Ni	60	72	2	2.001	ppb	3.70	7,764.25	1.133E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,828.79	-2.669E-02	Pulse	0.30	3
Zn	66	72	2	0.250	ppb	9.31	844.45	1.232E-02	Pulse	0.30	3
As	75	72	2	3.213	ppb	4.07	2,567.88	3.744E-02	Pulse	0.75	3
Se	78	72	1	0.012	ppb	41.03	5.56	7.119E-05	Pulse	0.30	3
Mo	95	103	2	8.307	ppb	2.10	35,027.10	1.857E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,042.58	-2.611E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-341.27	-7.621E-05	Pulse	0.30	3
Sb	121	115	3	0.049	ppb	6.14	1,816.86	4.056E-04	Pulse	0.30	3
Ba	137	159	3	29.011	ppb	0.62	304,307.66	4.414E-02	Pulse	0.30	3
Tl	205	209	3	0.129	ppb	3.03	10,052.72	2.642E-03	Pulse	0.30	3
Pb	208	209	3	0.118	ppb	2.52	12,844.28	3.375E-03	Pulse	0.30	3
U	238	209	3	1.645	ppb	0.84	172,080.63	4.522E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,861,344.30	0.41	73.8	Analog	0.30	3
2	Sc	45	112,354.22	1.70	79.6	Pulse	0.30	3
3	Sc	45	3,354,299.60	0.90	84.9	Analog	0.30	3
1	Ge	72	78,048.92	0.48	76.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	68,557.00	1.74	75.1	Pulse	0.30	3
2	Rh	103	1,886,388.30	0.59	69.5	Analog	0.30	3
3	Rh	103	3,992,381.61	0.90	70.6	Analog	0.30	3
3	In	115	4,480,668.09	1.08	74.7	Analog	0.30	3
3	Tb	159	6,894,618.30	0.46	77.7	Analog	0.30	3
3	Bi	209	3,805,299.70	0.14	68.3	Analog	0.30	3

Quantitation Report

File Name	A0518020.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:19
Sample Name	N019730-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

DILUTION TEST

5/20/2016

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	15.55	7.277E-06	Pulse	0.30	3
B	11	6	3	45.328	ppb	2.18	793,683.92	3.711E-01	Pulse	0.30	3
Na	23	45	2	54022.246	ppb	0.77	88,084,100.91	7.473E+02	Analog	0.30	3
Mg	26	45	2	5177.623	ppb	0.72	772,714.17	6.555E+00	Pulse	0.30	3
Al	27	45	2	0.077	ppb	480.13	953.02	8.077E-03	Pulse	0.30	3
K	39	45	2	1229.321	ppb	0.64	620,237.42	5.261E+00	Pulse	0.30	3
Ca	44	45	3	19093.262	ppb	1.34	31,060,247.04	9.329E+00	Analog	0.30	3
V	51	45	2	0.530	ppb	2.01	4,560.84	3.869E-02	Pulse	0.30	3
Cr	52	45	2	0.027	ppb	29.50	1,414.50	1.200E-02	Pulse	0.30	3
Mn	55	45	2	60.370	ppb	0.20	292,262.20	2.479E+00	Pulse	0.30	3
Fe	56	45	2	8.465	ppb	1.44	73,209.56	6.211E-01	Pulse	0.30	3
Co	59	45	2	0.087	ppb	6.48	1,545.50	1.310E-02	Pulse	0.30	3
Ni	60	72	2	0.483	ppb	2.10	2,244.59	2.998E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,387.78	1.854E-02	Pulse	0.30	3
Zn	66	72	2	0.259	ppb	21.70	937.63	1.252E-02	Pulse	0.30	3
As	75	72	2	0.670	ppb	5.03	602.60	8.048E-03	Pulse	0.75	3
Se	78	72	1	0.006	ppb	139.08	3.33	3.853E-05	Pulse	0.30	3
Mo	95	103	2	1.630	ppb	3.86	7,846.71	3.677E-03	Pulse	0.30	3
Ag	107	103	3	0.005	ppb	110.26	2,783.47	6.268E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-17,933.22	-3.655E-03	Pulse	0.30	3
Sb	121	115	3	0.012	ppb	24.87	824.50	1.680E-04	Pulse	0.30	3
Ba	137	159	3	4.132	ppb	0.41	46,761.10	6.321E-03	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	10.11	3,253.83	7.440E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-29,775.12	-6.806E-03	Pulse	0.30	3
U	238	209	3	0.315	ppb	2.20	38,090.93	8.707E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,138,888.52	1.18	84.8	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	117,883.82	1.25	83.6	Pulse	0.30	3
3	Sc	45	3,329,771.30	0.68	84.3	Analog	0.30	3
1	Ge	72	85,425.74	1.95	83.9	Pulse	0.30	3
2	Ge	72	74,869.13	0.26	82.0	Pulse	0.30	3
2	Rh	103	2,133,595.85	0.79	78.7	Analog	0.30	3
3	Rh	103	4,440,255.87	0.32	78.5	Analog	0.30	3
3	In	115	4,906,713.97	0.56	81.7	Analog	0.30	3
3	Tb	159	7,397,690.10	0.26	83.3	Analog	0.30	3
3	Bi	209	4,375,148.48	0.91	78.5	Analog	0.30	3

Quantitation Report

File Name	A0518021.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:25
Sample Name	N019730-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.760	ppb	0.99	106,088.82	5.791E-02	Pulse	0.30	3
B	11	6	3	2068.438	ppb	1.20	21,435,554.42	1.170E+01	Analog	0.30	3
Na	23	45	2	245368.537	ppb	0.99	369,202,030.05	3.387E+03	Analog	0.30	3
Mg	26	45	2	24232.186	ppb	0.70	3,343,478.32	3.068E+01	Analog	0.30	3
Al	27	45	2	186.328	ppb	0.29	51,979.65	4.769E-01	Pulse	0.30	3
K	39	45	2	5781.337	ppb	1.48	2,620,464.84	2.404E+01	Analog	0.30	3
Ca	44	45	3	84398.121	ppb	0.28	135,638,006.87	4.122E+01	Analog	0.30	3
V	51	45	2	11.872	ppb	0.69	75,003.41	6.882E-01	Pulse	0.30	3
Cr	52	45	2	9.240	ppb	0.95	79,585.40	7.302E-01	Pulse	0.30	3
Mn	55	45	2	373.354	ppb	0.68	1,669,764.10	1.532E+01	Analog	0.30	3
Fe	56	45	2	131.322	ppb	0.47	972,388.37	8.921E+00	Pulse	0.30	3
Co	59	45	2	8.577	ppb	0.44	136,165.09	1.249E+00	Pulse	0.30	3
Ni	60	72	2	11.210	ppb	1.23	41,359.29	6.186E-01	Pulse	0.30	3
Cu	63	72	2	8.381	ppb	1.41	90,032.60	1.346E+00	Pulse	0.30	3
Zn	66	72	2	81.906	ppb	0.44	122,551.19	1.833E+00	Pulse	0.30	3
As	75	72	2	12.722	ppb	4.11	9,850.87	1.473E-01	Pulse	0.75	3
Se	78	72	1	8.420	ppb	4.09	2,997.07	4.119E-02	Pulse	0.30	3
Mo	95	103	2	19.685	ppb	1.71	81,466.56	4.394E-02	Pulse	0.30	3
Ag	107	103	3	4.839	ppb	8.98	168,746.17	4.277E-02	Pulse	0.30	3
Cd	111	115	3	8.745	ppb	0.91	73,708.43	1.662E-02	Pulse	0.30	3
Sb	121	115	3	9.730	ppb	0.31	274,268.34	6.184E-02	Pulse	0.30	3
Ba	137	159	3	131.405	ppb	0.76	1,376,662.58	1.998E-01	Analog	0.30	3
Tl	205	209	3	9.285	ppb	0.16	642,563.95	1.681E-01	Pulse	0.30	3
Pb	208	209	3	10.370	ppb	0.45	977,356.99	2.557E-01	Pulse	0.30	3
U	238	209	3	12.586	ppb	0.46	1,320,911.99	3.456E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,832,135.49	1.23	72.7	Analog	0.30	3
2	Sc	45	108,999.29	1.47	77.3	Pulse	0.30	3
3	Sc	45	3,290,690.64	0.16	83.3	Analog	0.30	3
1	Ge	72	72,783.96	1.33	71.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	66,872.20	2.03	73.2	Pulse	0.30	3
2	Rh	103	1,853,899.54	1.04	68.3	Analog	0.30	3
3	Rh	103	3,946,075.50	0.70	69.7	Analog	0.30	3
3	In	115	4,435,270.38	0.46	73.9	Analog	0.30	3
3	Tb	159	6,891,077.95	0.17	77.6	Analog	0.30	3
3	Bi	209	3,822,028.07	0.25	68.6	Analog	0.30	3

Quantitation Report

File Name	A0518022.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:30
Sample Name	N019730-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.792	ppb	0.29	109,273.11	5.810E-02	Pulse	0.30	3
B	11	6	3	2089.292	ppb	2.08	22,225,167.40	1.182E+01	Analog	0.30	3
Na	23	45	2	239469.918	ppb	1.99	372,368,398.90	3.306E+03	Analog	0.30	3
Mg	26	45	2	23532.531	ppb	2.13	3,355,759.26	2.979E+01	Analog	0.30	3
Al	27	45	2	189.497	ppb	1.87	54,618.96	4.849E-01	Pulse	0.30	3
K	39	45	2	5565.090	ppb	0.90	2,608,854.32	2.315E+01	Analog	0.30	3
Ca	44	45	3	81686.067	ppb	0.71	134,433,261.33	3.989E+01	Analog	0.30	3
V	51	45	2	11.934	ppb	1.68	77,922.39	6.917E-01	Pulse	0.30	3
Cr	52	45	2	9.175	ppb	1.75	81,690.36	7.252E-01	Pulse	0.30	3
Mn	55	45	2	362.914	ppb	0.73	1,677,887.56	1.489E+01	Analog	0.30	3
Fe	56	45	2	127.938	ppb	1.68	979,269.29	8.693E+00	Pulse	0.30	3
Co	59	45	2	8.539	ppb	1.58	140,105.55	1.244E+00	Pulse	0.30	3
Ni	60	72	2	11.232	ppb	1.05	42,769.33	6.198E-01	Pulse	0.30	3
Cu	63	72	2	8.879	ppb	1.28	98,292.14	1.424E+00	Pulse	0.30	3
Zn	66	72	2	81.841	ppb	1.07	126,361.40	1.831E+00	Pulse	0.30	3
As	75	72	2	12.544	ppb	2.11	10,021.61	1.453E-01	Pulse	0.75	3
Se	78	72	1	8.613	ppb	3.04	3,179.34	4.213E-02	Pulse	0.30	3
Mo	95	103	2	19.356	ppb	1.06	82,216.42	4.321E-02	Pulse	0.30	3
Ag	107	103	3	5.154	ppb	8.49	184,407.48	4.552E-02	Pulse	0.30	3
Cd	111	115	3	8.701	ppb	1.49	75,184.04	1.654E-02	Pulse	0.30	3
Sb	121	115	3	9.735	ppb	0.54	281,331.35	6.187E-02	Pulse	0.30	3
Ba	137	159	3	130.186	ppb	1.17	1,400,433.71	1.979E-01	Analog	0.30	3
Tl	205	209	3	9.378	ppb	0.93	661,451.57	1.698E-01	Pulse	0.30	3
Pb	208	209	3	10.258	ppb	0.92	985,433.34	2.530E-01	Pulse	0.30	3
U	238	209	3	12.416	ppb	1.04	1,328,137.18	3.410E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,880,929.08	0.66	74.6	Analog	0.30	3
2	Sc	45	112,699.67	3.70	79.9	Pulse	0.30	3
3	Sc	45	3,369,749.74	0.19	85.3	Analog	0.30	3
1	Ge	72	75,451.31	1.13	74.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	69,019.94	2.89	75.6	Pulse	0.30	3
2	Rh	103	1,902,848.45	1.93	70.1	Analog	0.30	3
3	Rh	103	4,049,907.13	0.45	71.6	Analog	0.30	3
3	In	115	4,547,364.33	1.01	75.8	Analog	0.30	3
3	Tb	159	7,075,887.12	0.57	79.7	Analog	0.30	3
3	Bi	209	3,895,566.89	0.93	69.9	Analog	0.30	3

Quantitation Report

File Name	A0518023.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:36
Sample Name	N019730-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.707	ppb	0.70	109,616.08	5.759E-02	Pulse	0.30	3
B	11	6	3	2086.765	ppb	1.10	22,463,298.01	1.180E+01	Analog	0.30	3
Na	23	45	2	234917.973	ppb	1.03	374,105,758.87	3.243E+03	Analog	0.30	3
Mg	26	45	2	23003.705	ppb	1.13	3,359,510.92	2.912E+01	Analog	0.30	3
Al	27	45	2	185.036	ppb	0.88	54,644.50	4.736E-01	Pulse	0.30	3
K	39	45	2	5516.385	ppb	0.28	2,647,871.80	2.295E+01	Analog	0.30	3
Ca	44	45	3	81250.873	ppb	0.37	136,951,633.51	3.968E+01	Analog	0.30	3
V	51	45	2	11.707	ppb	1.74	78,287.21	6.787E-01	Pulse	0.30	3
Cr	52	45	2	9.045	ppb	1.60	82,482.01	7.150E-01	Pulse	0.30	3
Mn	55	45	2	360.689	ppb	0.74	1,707,412.22	1.480E+01	Analog	0.30	3
Fe	56	45	2	124.944	ppb	1.04	979,447.43	8.490E+00	Pulse	0.30	3
Co	59	45	2	8.385	ppb	1.76	140,859.26	1.221E+00	Pulse	0.30	3
Ni	60	72	2	11.142	ppb	0.14	43,106.92	6.148E-01	Pulse	0.30	3
Cu	63	72	2	8.423	ppb	0.83	94,870.46	1.353E+00	Pulse	0.30	3
Zn	66	72	2	81.007	ppb	0.68	127,090.88	1.813E+00	Pulse	0.30	3
As	75	72	2	12.563	ppb	1.76	10,199.94	1.455E-01	Pulse	0.75	3
Se	78	72	1	8.426	ppb	3.48	3,167.12	4.122E-02	Pulse	0.30	3
Mo	95	103	2	19.263	ppb	1.05	82,237.94	4.300E-02	Pulse	0.30	3
Ag	107	103	3	5.209	ppb	8.13	187,639.33	4.600E-02	Pulse	0.30	3
Cd	111	115	3	8.721	ppb	0.52	76,162.56	1.657E-02	Pulse	0.30	3
Sb	121	115	3	9.677	ppb	0.77	282,603.25	6.150E-02	Pulse	0.30	3
Ba	137	159	3	130.694	ppb	1.13	1,411,860.39	1.987E-01	Analog	0.30	3
Tl	205	209	3	9.399	ppb	1.04	668,606.17	1.702E-01	Pulse	0.30	3
Pb	208	209	3	10.284	ppb	0.50	996,420.66	2.536E-01	Pulse	0.30	3
U	238	209	3	12.401	ppb	0.66	1,337,911.51	3.405E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,903,333.24	1.00	75.5	Analog	0.30	3
2	Sc	45	115,380.03	2.72	81.8	Pulse	0.30	3
3	Sc	45	3,451,259.36	0.28	87.4	Analog	0.30	3
1	Ge	72	76,817.56	1.33	75.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	70,114.54	0.47	76.8	Pulse	0.30	3
2	Rh	103	1,912,444.35	2.26	70.5	Analog	0.30	3
3	Rh	103	4,079,121.40	0.18	72.1	Analog	0.30	3
3	In	115	4,595,296.69	0.48	76.6	Analog	0.30	3
3	Tb	159	7,105,925.17	0.49	80.1	Analog	0.30	3
3	Bi	209	3,928,887.03	0.59	70.5	Analog	0.30	3

Quantitation Report

File Name	A0518024.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:41
Sample Name	N019730-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.008	ppb	19.27	90.00	6.038E-05	Pulse	0.30	3
B	11	6	3	1066.480	ppb	0.77	9,071,236.59	6.089E+00	Analog	0.30	3
Na	23	45	2	1354138.937	ppb	1.08	1,987,762,423.71	1.868E+04	Analog	0.30	3
Mg	26	45	2	30407.525	ppb	1.04	4,096,282.30	3.849E+01	Analog	0.30	3
Al	27	45	2	3.144	ppb	11.17	1,678.36	1.580E-02	Pulse	0.30	3
K	39	45	2	14116.775	ppb	0.58	6,218,094.56	5.844E+01	Analog	0.30	3
Ca	44	45	3	179223.073	ppb	0.30	293,769,344.51	8.752E+01	Analog	0.30	3
V	51	45	2	8.365	ppb	0.83	51,858.87	4.873E-01	Pulse	0.30	3
Cr	52	45	2	569.561	ppb	1.06	4,725,104.45	4.441E+01	Analog	0.30	3
Mn	55	45	2	12.300	ppb	1.70	53,966.27	5.073E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-142,239.37	-1.337E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,686.49	-1.585E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-1,606.43	-2.647E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-39,452.18	-6.497E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-4,858.01	-7.997E-02	Pulse	0.30	3
As	75	72	2	2.988	ppb	2.87	2,115.45	3.483E-02	Pulse	0.75	3
Se	78	72	1	3.702	ppb	7.02	1,134.54	1.812E-02	Pulse	0.30	3
Mo	95	103	2	24.360	ppb	2.69	85,512.59	5.437E-02	Pulse	0.30	3
Ag	107	103	3	0.003	ppb	647.85	2,112.99	6.126E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-699.83	-1.801E-04	Pulse	0.30	3
Sb	121	115	3	0.034	ppb	13.33	1,204.55	3.100E-04	Pulse	0.30	3
Ba	137	159	3	30.551	ppb	0.38	272,896.92	4.648E-02	Pulse	0.30	3
Tl	205	209	3	0.222	ppb	2.37	12,943.96	4.328E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-18,849.48	-6.302E-03	Pulse	0.30	3
U	238	209	3	4.513	ppb	1.38	370,703.83	1.240E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,489,612.16	0.92	59.1	Analog	0.30	3
2	Sc	45	106,418.53	4.33	75.4	Pulse	0.30	3
3	Sc	45	3,356,503.18	1.19	85.0	Analog	0.30	3
1	Ge	72	62,596.22	1.12	61.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	60,715.94	2.87	66.5	Pulse	0.30	3
2	Rh	103	1,572,206.02	2.57	58.0	Analog	0.30	3
3	Rh	103	3,459,435.68	1.47	61.1	Analog	0.30	3
3	In	115	3,885,451.35	0.94	64.7	Analog	0.30	3
3	Tb	159	5,871,547.69	0.28	66.1	Analog	0.30	3
3	Bi	209	2,990,943.98	1.05	53.7	Analog	0.30	3

Quantitation Report

File Name	A0518025.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:47
Sample Name	N019730-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	42.25	68.89	4.257E-05	Pulse	0.30	3
B	11	6	3	808.549	ppb	1.13	7,517,747.71	4.645E+00	Analog	0.30	3
Na	23	45	2	1311218.814	ppb	0.79	1,943,400,557.71	1.809E+04	Analog	0.30	3
Mg	26	45	2	32583.810	ppb	1.34	4,430,694.87	4.125E+01	Analog	0.30	3
Al	27	45	2	4.939	ppb	3.19	2,182.89	2.031E-02	Pulse	0.30	3
K	39	45	2	12189.065	ppb	1.01	5,423,001.17	5.048E+01	Analog	0.30	3
Ca	44	45	3	162494.812	ppb	1.11	272,681,831.49	7.936E+01	Analog	0.30	3
V	51	45	2	6.599	ppb	0.99	41,481.82	3.862E-01	Pulse	0.30	3
Cr	52	45	2	46.843	ppb	1.01	393,348.43	3.661E+00	Pulse	0.30	3
Mn	55	45	2	56.112	ppb	0.75	247,580.15	2.305E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-45,027.24	-4.190E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,156.68	-1.077E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-216.78	-3.513E-03	Pulse	0.30	3
Cu	63	72	2	4.380	ppb	3.55	44,290.51	7.204E-01	Pulse	0.30	3
Zn	66	72	2	0.368	ppb	18.36	921.35	1.496E-02	Pulse	0.30	3
As	75	72	2	2.608	ppb	5.23	1,870.85	3.044E-02	Pulse	0.75	3
Se	78	72	1	0.452	ppb	8.68	144.45	2.222E-03	Pulse	0.30	3
Mo	95	103	2	16.531	ppb	1.52	58,268.89	3.691E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-3,271.01	-9.266E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-650.84	-1.658E-04	Pulse	0.30	3
Sb	121	115	3	0.031	ppb	3.42	1,147.87	2.927E-04	Pulse	0.30	3
Ba	137	159	3	32.649	ppb	0.69	292,648.43	4.967E-02	Pulse	0.30	3
Tl	205	209	3	0.173	ppb	1.17	10,237.30	3.450E-03	Pulse	0.30	3
Pb	208	209	3	0.074	ppb	6.92	6,791.52	2.288E-03	Pulse	0.30	3
U	238	209	3	5.782	ppb	0.96	471,224.90	1.588E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,618,324.21	1.73	64.2	Analog	0.30	3
2	Sc	45	107,425.82	2.53	76.2	Pulse	0.30	3
3	Sc	45	3,435,960.40	1.04	87.0	Analog	0.30	3
1	Ge	72	65,033.59	0.67	63.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	61,514.45	2.69	67.4	Pulse	0.30	3
2	Rh	103	1,578,662.69	1.97	58.2	Analog	0.30	3
3	Rh	103	3,530,789.25	1.78	62.4	Analog	0.30	3
3	In	115	3,923,204.28	1.61	65.4	Analog	0.30	3
3	Tb	159	5,891,905.68	1.26	66.4	Analog	0.30	3
3	Bi	209	2,967,095.75	1.61	53.2	Analog	0.30	3

Quantitation Report

File Name	A0518026.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:52
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.257	ppb	0.53	306,000.75	1.142E-01	Pulse	0.30	3
B	11	6	3	209.816	ppb	1.32	3,461,252.72	1.292E+00	Analog	0.30	3
Na	23	45	2	541.013	ppb	7.11	1,328,209.19	9.443E+00	Analog	0.30	3
Mg	26	45	2	206.339	ppb	1.37	36,901.25	2.621E-01	Pulse	0.30	3
Al	27	45	2	18.780	ppb	3.40	7,760.68	5.515E-02	Pulse	0.30	3
K	39	45	2	232.222	ppb	1.35	161,427.87	1.147E+00	Pulse	0.30	3
Ca	44	45	3	199.153	ppb	0.21	417,196.92	1.021E-01	Pulse	0.30	3
V	51	45	2	19.784	ppb	0.27	160,636.20	1.141E+00	Pulse	0.30	3
Cr	52	45	2	19.085	ppb	0.43	210,797.87	1.498E+00	Pulse	0.30	3
Mn	55	45	2	19.743	ppb	1.27	114,373.90	8.126E-01	Pulse	0.30	3
Fe	56	45	2	18.845	ppb	1.22	186,107.77	1.322E+00	Pulse	0.30	3
Co	59	45	2	18.996	ppb	0.82	389,342.16	2.766E+00	Pulse	0.30	3
Ni	60	72	2	20.114	ppb	1.09	100,675.64	1.107E+00	Pulse	0.30	3
Cu	63	72	2	19.541	ppb	0.74	281,223.78	3.093E+00	Pulse	0.30	3
Zn	66	72	2	19.748	ppb	1.16	40,647.77	4.470E-01	Pulse	0.30	3
As	75	72	2	19.936	ppb	0.79	20,974.01	2.307E-01	Pulse	0.75	3
Se	78	72	1	19.042	ppb	3.51	9,503.22	9.314E-02	Pulse	0.30	3
Mo	95	103	2	20.146	ppb	0.82	118,056.14	4.497E-02	Pulse	0.30	3
Ag	107	103	3	19.041	ppb	1.16	933,056.32	1.666E-01	Pulse	0.30	3
Cd	111	115	3	19.604	ppb	0.89	222,964.40	3.725E-02	Pulse	0.30	3
Sb	121	115	3	19.207	ppb	0.93	730,097.25	1.220E-01	Pulse	0.30	3
Ba	137	159	3	21.617	ppb	0.57	280,237.58	3.290E-02	Pulse	0.30	3
Tl	205	209	3	20.251	ppb	0.80	1,932,112.25	3.663E-01	Analog	0.30	3
Pb	208	209	3	19.825	ppb	0.85	2,576,333.72	4.885E-01	Mix	0.30	3
U	238	209	3	18.907	ppb	0.35	2,738,372.66	5.192E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,678,618.57	0.52	106.2	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	140,763.03	2.02	99.8	Pulse	0.30	3
3	Sc	45	4,087,796.08	0.29	103.5	Analog	0.30	3
1	Ge	72	102,013.61	1.19	100.2	Pulse	0.30	3
2	Ge	72	90,937.54	2.02	99.6	Pulse	0.30	3
2	Rh	103	2,625,035.08	1.92	96.8	Analog	0.30	3
3	Rh	103	5,601,138.32	0.91	99.0	Analog	0.30	3
3	In	115	5,985,706.35	0.45	99.7	Analog	0.30	3
3	Tb	159	8,518,485.15	0.16	96.0	Analog	0.30	3
3	Bi	209	5,274,580.86	0.72	94.6	Analog	0.30	3

Quantitation Report

File Name	A0518027.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 18:58
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	300.30	37.78	1.432E-05	Pulse	0.30	3
B	11	6	3	7.623	ppb	4.64	421,760.26	1.600E-01	Pulse	0.30	3
Na	23	45	2	160.238	ppb	9.45	588,011.24	4.190E+00	Pulse	0.30	3
Mg	26	45	2	0.215	ppb	35.30	170.01	1.212E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	691.14	4.925E-03	Pulse	0.30	3
K	39	45	2	14.412	ppb	14.59	34,845.14	2.483E-01	Pulse	0.30	3
Ca	44	45	3	0.308	ppb	55.15	19,882.69	4.957E-03	Pulse	0.30	3
V	51	45	2	0.014	ppb	80.00	1,285.66	9.156E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,112.83	7.923E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	251.83	1.792E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	4,364.31	3.108E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	58.29	4.164E-04	Pulse	0.30	3
Ni	60	72	2	0.230	ppb	13.01	1,469.52	1.613E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,961.90	3.250E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	615.85	6.738E-03	Pulse	0.30	3
As	75	72	2	0.003	ppb	302.15	31.55	3.458E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	1.078E-05	Pulse	0.30	3
Mo	95	103	2	0.080	ppb	18.18	587.81	2.202E-04	Pulse	0.30	3
Ag	107	103	3	0.115	ppb	15.62	8,939.26	1.586E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-21.62	-3.639E-06	Pulse	0.30	3
Sb	121	115	3	0.043	ppb	9.01	2,166.91	3.642E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	316.61	3.669E-05	Pulse	0.30	3
Tl	205	209	3	0.029	ppb	7.83	4,483.10	8.459E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	2,105.07	3.972E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	16.39	458.28	8.646E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,636,545.30	0.28	104.5	Analog	0.30	3
2	Sc	45	140,384.55	0.89	99.5	Pulse	0.30	3
3	Sc	45	4,010,795.88	0.09	101.5	Analog	0.30	3
1	Ge	72	102,133.95	0.82	100.3	Pulse	0.30	3
2	Ge	72	91,161.05	1.58	99.8	Pulse	0.30	3
2	Rh	103	2,667,398.50	0.95	98.3	Analog	0.30	3
3	Rh	103	5,638,701.10	0.78	99.7	Analog	0.30	3
3	In	115	5,948,694.96	1.01	99.1	Analog	0.30	3
3	Tb	159	8,621,652.79	0.72	97.1	Analog	0.30	3
3	Bi	209	5,299,681.38	0.28	95.1	Analog	0.30	3

Quantitation Report

File Name	A0518028.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:03
Sample Name	N019741-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	35.04	75.56	3.431E-05	Pulse	0.30	3
B	11	6	3	191.605	ppb	1.80	2,617,720.14	1.190E+00	Analog	0.30	3
Na	23	45	2	75311.243	ppb	0.19	134,487,305.77	1.041E+03	Analog	0.30	3
Mg	26	45	2	16777.219	ppb	1.15	2,744,041.80	2.124E+01	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	524.18	4.059E-03	Pulse	0.30	3
K	39	45	2	2849.759	ppb	0.85	1,543,626.64	1.195E+01	Analog	0.30	3
Ca	44	45	3	84153.169	ppb	0.15	156,046,473.23	4.110E+01	Analog	0.30	3
V	51	45	2	0.173	ppb	5.22	2,358.05	1.825E-02	Pulse	0.30	3
Cr	52	45	2	1.738	ppb	2.41	18,789.20	1.454E-01	Pulse	0.30	3
Mn	55	45	2	2267.678	ppb	0.57	12,018,671.23	9.303E+01	Analog	0.30	3
Fe	56	45	2	306.851	ppb	0.92	2,684,688.95	2.078E+01	Analog	0.30	3
Co	59	45	2	1.547	ppb	1.97	29,161.96	2.257E-01	Pulse	0.30	3
Ni	60	72	2	0.874	ppb	1.05	4,136.84	5.146E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,719.69	-2.139E-02	Pulse	0.30	3
Zn	66	72	2	4.803	ppb	0.30	9,148.63	1.138E-01	Pulse	0.30	3
As	75	72	2	9.189	ppb	1.56	8,559.92	1.065E-01	Pulse	0.75	3
Se	78	72	1	0.008	ppb	111.87	4.45	4.890E-05	Pulse	0.30	3
Mo	95	103	2	6.237	ppb	2.27	31,457.25	1.395E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,947.85	-4.193E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-445.24	-8.457E-05	Pulse	0.30	3
Sb	121	115	3	0.027	ppb	20.15	1,410.12	2.677E-04	Pulse	0.30	3
Ba	137	159	3	129.403	ppb	0.60	1,572,844.65	1.967E-01	Analog	0.30	3
Tl	205	209	3	0.067	ppb	3.51	6,885.24	1.527E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,793.48	-3.972E-04	Pulse	0.30	3
U	238	209	3	24.456	ppb	0.75	3,027,976.13	6.715E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,199,511.06	0.94	87.2	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	129,194.77	1.08	91.6	Pulse	0.30	3
3	Sc	45	3,796,828.69	0.26	96.1	Analog	0.30	3
1	Ge	72	90,804.06	0.42	89.2	Pulse	0.30	3
2	Ge	72	80,384.64	0.23	88.0	Pulse	0.30	3
2	Rh	103	2,255,129.45	1.73	83.1	Analog	0.30	3
3	Rh	103	4,645,824.14	0.24	82.1	Analog	0.30	3
3	In	115	5,264,907.81	0.48	87.7	Analog	0.30	3
3	Tb	159	7,994,693.98	0.79	90.1	Analog	0.30	3
3	Bi	209	4,509,408.34	1.18	80.9	Analog	0.30	3

Quantitation Report

File Name A0518029.D
File Path C:\ICPMH\1\DATA\160518A2.B
Method File DEFAULT.M
Method Path C:\ICPMH\1\METHODS\
Acq Time 05/18/2016 19:09
Sample Name N019741-002B,SAMP,1
Sample Type Sample
Comment
Prep Dilution 1.000
Auto Dilution N/A
Total Dilution 1.000
Operator Name
Acq Mode Spectrum
Cal Title
Cal Type External Calibration
Last Calib 05/18/2016 17:26
Bkg File
Bkg Mode Count Subtraction except for ISTD
Interference File Acq. Defined
FQ Blank File
VIS Fit Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	57.94	47.78	2.214E-05	Pulse	0.30	3
B	11	6	3	184.486	ppb	1.20	2,480,743.18	1.150E+00	Analog	0.30	3
Na	23	45	2	74676.931	ppb	0.47	127,596,500.32	1.032E+03	Analog	0.30	3
Mg	26	45	2	16888.144	ppb	2.01	2,643,196.04	2.138E+01	Analog	0.30	3
Al	27	45	2	2.497	ppb	10.11	1,751.18	1.417E-02	Pulse	0.30	3
K	39	45	2	2812.354	ppb	0.35	1,457,863.40	1.179E+01	Analog	0.30	3
Ca	44	45	3	81975.552	ppb	0.21	150,091,145.54	4.004E+01	Analog	0.30	3
V	51	45	2	0.188	ppb	12.21	2,358.06	1.908E-02	Pulse	0.30	3
Cr	52	45	2	1.751	ppb	1.02	18,104.87	1.465E-01	Pulse	0.30	3
Mn	55	45	2	2268.345	ppb	0.92	11,503,520.30	9.306E+01	Analog	0.30	3
Fe	56	45	2	313.493	ppb	0.90	2,624,329.81	2.123E+01	Analog	0.30	3
Co	59	45	2	1.553	ppb	0.44	28,005.28	2.265E-01	Pulse	0.30	3
Ni	60	72	2	0.878	ppb	3.86	4,076.69	5.169E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,377.30	-1.746E-02	Pulse	0.30	3
Zn	66	72	2	5.017	ppb	6.70	9,349.16	1.186E-01	Pulse	0.30	3
As	75	72	2	9.001	ppb	1.94	8,225.85	1.043E-01	Pulse	0.75	3
Se	78	72	1	0.000	ppb	1489.41	1.11	1.250E-05	Pulse	0.30	3
Mo	95	103	2	6.042	ppb	0.53	29,658.32	1.351E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,891.63	-4.089E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-26,519.42	-5.073E-03	Pulse	0.30	3
Sb	121	115	3	0.023	ppb	9.73	1,251.22	2.394E-04	Pulse	0.30	3
Ba	137	159	3	124.108	ppb	1.80	1,507,209.89	1.887E-01	Analog	0.30	3
Tl	205	209	3	0.056	ppb	4.36	6,020.37	1.329E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-50,804.98	-1.121E-02	Pulse	0.30	3
U	238	209	3	24.026	ppb	1.38	2,989,326.44	6.597E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,156,446.05	0.72	85.5	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	123,618.67	1.27	87.6	Pulse	0.30	3
3	Sc	45	3,748,917.27	0.44	94.9	Analog	0.30	3
1	Ge	72	88,212.69	0.74	86.6	Pulse	0.30	3
2	Ge	72	78,861.63	1.14	86.4	Pulse	0.30	3
2	Rh	103	2,194,575.26	2.78	80.9	Analog	0.30	3
3	Rh	103	4,626,168.92	0.30	81.8	Analog	0.30	3
3	In	115	5,227,518.88	0.59	87.1	Analog	0.30	3
3	Tb	159	7,989,156.69	1.23	90.0	Analog	0.30	3
3	Bi	209	4,531,548.27	0.68	81.3	Analog	0.30	3

Quantitation Report

File Name	A0518030.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:14
Sample Name	N019730-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	10.00	4.538E-06	Pulse	0.30	3
B	11	6	3	9.326	ppb	5.42	373,507.39	1.695E-01	Pulse	0.30	3
Na	23	45	2	11048.009	ppb	0.41	18,717,644.03	1.544E+02	Analog	0.30	3
Mg	26	45	2	1063.293	ppb	0.54	163,287.48	1.347E+00	Pulse	0.30	3
Al	27	45	2	0.555	ppb	2.42	1,124.92	9.279E-03	Pulse	0.30	3
K	39	45	2	260.330	ppb	1.48	153,093.96	1.263E+00	Pulse	0.30	3
Ca	44	45	3	3944.642	ppb	0.51	6,708,399.27	1.931E+00	Analog	0.30	3
V	51	45	2	0.078	ppb	21.94	1,549.04	1.278E-02	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,020.55	8.409E-03	Pulse	0.30	3
Mn	55	45	2	12.945	ppb	0.84	64,705.79	5.338E-01	Pulse	0.30	3
Fe	56	45	2	1.664	ppb	1.84	19,591.11	1.616E-01	Pulse	0.30	3
Co	59	45	2	0.018	ppb	7.28	380.02	3.133E-03	Pulse	0.30	3
Ni	60	72	2	0.249	ppb	2.02	1,394.79	1.719E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,764.09	2.174E-02	Pulse	0.30	3
Zn	66	72	2	0.133	ppb	31.89	789.31	9.721E-03	Pulse	0.30	3
As	75	72	2	0.145	ppb	1.41	160.85	1.983E-03	Pulse	0.75	3
Se	78	72	1	0.005	ppb	142.22	3.33	3.700E-05	Pulse	0.30	3
Mo	95	103	2	0.323	ppb	1.43	1,795.74	7.613E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,177.31	4.348E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-3,745.59	-6.906E-04	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	1702.98	515.59	9.506E-05	Pulse	0.30	3
Ba	137	159	3	0.894	ppb	1.16	11,386.66	1.399E-03	Pulse	0.30	3
Tl	205	209	3	0.008	ppb	13.75	2,295.84	4.611E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,505.11	-9.049E-04	Pulse	0.30	3
U	238	209	3	0.064	ppb	1.07	9,058.66	1.819E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,203,674.49	1.19	87.4	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	121,235.23	1.88	85.9	Pulse	0.30	3
3	Sc	45	3,473,942.87	0.76	87.9	Analog	0.30	3
1	Ge	72	89,852.70	0.49	88.2	Pulse	0.30	3
2	Ge	72	81,126.53	1.40	88.8	Pulse	0.30	3
2	Rh	103	2,358,835.12	1.23	87.0	Analog	0.30	3
3	Rh	103	5,007,080.24	0.66	88.5	Analog	0.30	3
3	In	115	5,424,058.06	0.39	90.4	Analog	0.30	3
3	Tb	159	8,138,583.90	0.61	91.7	Analog	0.30	3
3	Bi	209	4,978,962.39	0.50	89.3	Analog	0.30	3

Quantitation Report

File Name	A0518031.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:20
Sample Name	N019730-001B-PS,PS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.005	ppb	1.72	23,711.67	1.190E-02	Pulse	0.30	3
B	11	6	3	420.055	ppb	1.00	4,919,597.03	2.470E+00	Analog	0.30	3
Na	23	45	2	51209.378	ppb	0.42	81,570,499.34	7.085E+02	Analog	0.30	3
Mg	26	45	2	4942.901	ppb	0.35	720,591.00	6.258E+00	Pulse	0.30	3
Al	27	45	2	36.491	ppb	2.44	11,481.45	9.973E-02	Pulse	0.30	3
K	39	45	2	1198.729	ppb	1.18	591,194.81	5.135E+00	Pulse	0.30	3
Ca	44	45	3	18546.498	ppb	0.20	29,532,647.89	9.062E+00	Analog	0.30	3
V	51	45	2	2.496	ppb	2.07	17,416.53	1.513E-01	Pulse	0.30	3
Cr	52	45	2	1.906	ppb	1.99	18,243.26	1.585E-01	Pulse	0.30	3
Mn	55	45	2	78.613	ppb	0.61	371,619.70	3.228E+00	Pulse	0.30	3
Fe	56	45	2	28.032	ppb	0.88	223,700.70	1.943E+00	Pulse	0.30	3
Co	59	45	2	1.874	ppb	1.41	31,463.15	2.733E-01	Pulse	0.30	3
Ni	60	72	2	2.549	ppb	1.61	10,774.78	1.433E-01	Pulse	0.30	3
Cu	63	72	2	1.756	ppb	1.38	23,276.56	3.097E-01	Pulse	0.30	3
Zn	66	72	2	19.104	ppb	2.62	32,513.23	4.326E-01	Pulse	0.30	3
As	75	72	2	2.721	ppb	5.93	2,387.39	3.176E-02	Pulse	0.75	3
Se	78	72	1	1.882	ppb	13.20	768.94	9.214E-03	Pulse	0.30	3
Mo	95	103	2	3.732	ppb	1.86	17,946.29	8.363E-03	Pulse	0.30	3
Ag	107	103	3	1.438	ppb	7.19	60,063.69	1.312E-02	Pulse	0.30	3
Cd	111	115	3	0.238	ppb	25.81	2,332.86	4.572E-04	Pulse	0.30	3
Sb	121	115	3	2.022	ppb	0.80	65,954.40	1.293E-02	Pulse	0.30	3
Ba	137	159	3	25.594	ppb	0.38	305,781.09	3.894E-02	Pulse	0.30	3
Tl	205	209	3	1.660	ppb	1.71	141,385.04	3.031E-02	Pulse	0.30	3
Pb	208	209	3	1.812	ppb	0.60	210,300.73	4.509E-02	Pulse	0.30	3
U	238	209	3	2.447	ppb	1.36	313,573.11	6.723E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,992,156.20	0.68	79.0	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	115,145.11	1.98	81.6	Pulse	0.30	3
3	Sc	45	3,259,099.64	0.36	82.5	Analog	0.30	3
1	Ge	72	83,468.75	1.22	82.0	Pulse	0.30	3
2	Ge	72	75,170.14	1.95	82.3	Pulse	0.30	3
2	Rh	103	2,145,771.58	0.97	79.1	Analog	0.30	3
3	Rh	103	4,576,331.32	0.23	80.9	Analog	0.30	3
3	In	115	5,101,645.04	0.43	85.0	Analog	0.30	3
3	Tb	159	7,852,011.55	0.84	88.5	Analog	0.30	3
3	Bi	209	4,664,426.70	0.66	83.7	Analog	0.30	3

Quantitation Report

File Name	A0518032.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:25
Sample Name	N019730-001B-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.010	ppb	0.93	22,906.04	1.193E-02	Pulse	0.30	3
B	11	6	3	420.195	ppb	0.61	4,742,438.81	2.470E+00	Analog	0.30	3
Na	23	45	2	50748.447	ppb	0.16	77,119,138.29	7.021E+02	Analog	0.30	3
Mg	26	45	2	4880.373	ppb	0.76	678,680.69	6.179E+00	Pulse	0.30	3
Al	27	45	2	36.914	ppb	1.38	11,070.87	1.008E-01	Pulse	0.30	3
K	39	45	2	1190.592	ppb	0.54	560,359.74	5.101E+00	Pulse	0.30	3
Ca	44	45	3	18131.756	ppb	0.54	27,766,167.36	8.859E+00	Analog	0.30	3
V	51	45	2	2.575	ppb	2.11	17,115.01	1.558E-01	Pulse	0.30	3
Cr	52	45	2	1.977	ppb	1.60	18,018.45	1.640E-01	Pulse	0.30	3
Mn	55	45	2	78.795	ppb	0.44	355,338.22	3.235E+00	Pulse	0.30	3
Fe	56	45	2	30.720	ppb	0.28	233,371.36	2.125E+00	Pulse	0.30	3
Co	59	45	2	1.943	ppb	1.81	31,112.85	2.833E-01	Pulse	0.30	3
Ni	60	72	2	2.578	ppb	2.63	10,658.16	1.450E-01	Pulse	0.30	3
Cu	63	72	2	1.875	ppb	3.80	24,148.64	3.283E-01	Pulse	0.30	3
Zn	66	72	2	18.914	ppb	1.30	31,495.31	4.284E-01	Pulse	0.30	3
As	75	72	2	2.700	ppb	5.74	2,315.50	3.151E-02	Pulse	0.75	3
Se	78	72	1	1.998	ppb	13.05	797.83	9.781E-03	Pulse	0.30	3
Mo	95	103	2	3.690	ppb	3.31	17,603.59	8.270E-03	Pulse	0.30	3
Ag	107	103	3	1.608	ppb	4.66	65,430.10	1.460E-02	Pulse	0.30	3
Cd	111	115	3	0.337	ppb	5.48	3,228.23	6.450E-04	Pulse	0.30	3
Sb	121	115	3	2.076	ppb	0.99	66,391.76	1.327E-02	Pulse	0.30	3
Ba	137	159	3	25.650	ppb	1.41	304,100.97	3.903E-02	Pulse	0.30	3
Tl	205	209	3	1.710	ppb	2.01	145,806.75	3.123E-02	Pulse	0.30	3
Pb	208	209	3	1.849	ppb	0.16	214,719.83	4.599E-02	Pulse	0.30	3
U	238	209	3	2.469	ppb	0.69	316,694.69	6.783E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,919,747.88	0.21	76.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	109,840.65	1.20	77.9	Pulse	0.30	3
3	Sc	45	3,134,271.48	0.63	79.3	Analog	0.30	3
1	Ge	72	81,625.12	0.84	80.2	Pulse	0.30	3
2	Ge	72	73,530.64	1.47	80.5	Pulse	0.30	3
2	Rh	103	2,128,120.39	1.15	78.5	Analog	0.30	3
3	Rh	103	4,479,685.25	0.74	79.2	Analog	0.30	3
3	In	115	5,004,853.35	0.25	83.4	Analog	0.30	3
3	Tb	159	7,792,441.90	0.64	87.8	Analog	0.30	3
3	Bi	209	4,668,882.81	0.26	83.8	Analog	0.30	3

Quantitation Report

File Name	A0518033.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:31
Sample Name	N019730-001B-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	1.985	ppb	1.01	21,667.76	1.179E-02	Pulse	0.30	3
B	11	6	3	424.557	ppb	0.45	4,586,432.77	2.495E+00	Analog	0.30	3
Na	23	45	2	49978.811	ppb	1.04	73,723,084.46	6.915E+02	Analog	0.30	3
Mg	26	45	2	4824.252	ppb	0.49	651,175.68	6.108E+00	Pulse	0.30	3
Al	27	45	2	36.600	ppb	0.84	10,662.21	1.000E-01	Pulse	0.30	3
K	39	45	2	1169.651	ppb	0.24	534,645.99	5.015E+00	Pulse	0.30	3
Ca	44	45	3	18041.738	ppb	0.33	26,464,737.94	8.815E+00	Analog	0.30	3
V	51	45	2	2.543	ppb	1.79	16,412.11	1.540E-01	Pulse	0.30	3
Cr	52	45	2	1.958	ppb	3.59	17,326.32	1.626E-01	Pulse	0.30	3
Mn	55	45	2	78.415	ppb	0.34	343,237.09	3.220E+00	Pulse	0.30	3
Fe	56	45	2	28.092	ppb	0.84	207,565.78	1.947E+00	Pulse	0.30	3
Co	59	45	2	1.926	ppb	1.96	29,951.39	2.809E-01	Pulse	0.30	3
Ni	60	72	2	2.568	ppb	0.44	10,195.57	1.444E-01	Pulse	0.30	3
Cu	63	72	2	1.910	ppb	1.87	23,569.63	3.338E-01	Pulse	0.30	3
Zn	66	72	2	19.412	ppb	0.96	31,031.39	4.395E-01	Pulse	0.30	3
As	75	72	2	2.694	ppb	1.22	2,220.01	3.144E-02	Pulse	0.75	3
Se	78	72	1	1.723	ppb	12.32	662.26	8.437E-03	Pulse	0.30	3
Mo	95	103	2	3.711	ppb	1.29	17,109.83	8.317E-03	Pulse	0.30	3
Ag	107	103	3	1.609	ppb	6.18	63,858.38	1.461E-02	Pulse	0.30	3
Cd	111	115	3	0.374	ppb	3.74	3,508.81	7.141E-04	Pulse	0.30	3
Sb	121	115	3	2.069	ppb	0.97	64,968.28	1.322E-02	Pulse	0.30	3
Ba	137	159	3	25.632	ppb	0.33	296,700.68	3.900E-02	Pulse	0.30	3
Tl	205	209	3	1.715	ppb	1.30	145,139.95	3.131E-02	Pulse	0.30	3
Pb	208	209	3	1.858	ppb	1.32	214,272.27	4.622E-02	Pulse	0.30	3
U	238	209	3	2.468	ppb	0.97	314,401.51	6.782E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,838,474.56	0.81	72.9	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	106,608.37	1.22	75.6	Pulse	0.30	3
3	Sc	45	3,002,238.11	0.57	76.0	Analog	0.30	3
1	Ge	72	78,494.65	0.72	77.1	Pulse	0.30	3
2	Ge	72	70,619.13	2.37	77.3	Pulse	0.30	3
2	Rh	103	2,057,472.64	1.65	75.9	Analog	0.30	3
3	Rh	103	4,370,545.00	0.28	77.2	Analog	0.30	3
3	In	115	4,914,389.38	0.76	81.9	Analog	0.30	3
3	Tb	159	7,607,660.03	0.23	85.7	Analog	0.30	3
3	Bi	209	4,636,197.88	0.84	83.2	Analog	0.30	3

Quantitation Report

File Name	A0518034.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:36
Sample Name	N019730-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	65.24	34.44	1.998E-05	Pulse	0.30	3
B	11	6	3	199.263	ppb	0.93	2,124,776.66	1.233E+00	Analog	0.30	3
Na	23	45	2	281550.529	ppb	0.25	404,875,513.97	3.886E+03	Analog	0.30	3
Mg	26	45	2	6302.551	ppb	0.48	831,274.27	7.979E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	502.77	4.819E-03	Pulse	0.30	3
K	39	45	2	2928.054	ppb	0.43	1,278,433.47	1.227E+01	Analog	0.30	3
Ca	44	45	3	39809.643	ppb	0.54	58,203,620.80	1.944E+01	Analog	0.30	3
V	51	45	2	1.757	ppb	2.49	11,352.11	1.090E-01	Pulse	0.30	3
Cr	52	45	2	124.940	ppb	0.59	1,015,660.39	9.749E+00	Pulse	0.30	3
Mn	55	45	2	2.701	ppb	2.42	11,825.18	1.135E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-26,423.87	-2.538E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-242.83	-2.330E-03	Pulse	0.30	3
Ni	60	72	2	0.011	ppb	98.35	275.61	4.126E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-6,597.23	-9.889E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-522.56	-7.840E-03	Pulse	0.30	3
As	75	72	2	0.676	ppb	10.82	541.97	8.121E-03	Pulse	0.75	3
Se	78	72	1	0.957	ppb	5.29	346.69	4.693E-03	Pulse	0.30	3
Mo	95	103	2	4.604	ppb	2.00	19,450.30	1.031E-02	Pulse	0.30	3
Ag	107	103	3	0.019	ppb	37.81	3,042.21	7.483E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-76.30	-1.666E-05	Pulse	0.30	3
Sb	121	115	3	0.005	ppb	14.47	586.70	1.283E-04	Pulse	0.30	3
Ba	137	159	3	6.155	ppb	0.27	67,709.10	9.396E-03	Pulse	0.30	3
Tl	205	209	3	0.075	ppb	5.21	6,894.14	1.676E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,128.08	-5.171E-04	Pulse	0.30	3
U	238	209	3	0.893	ppb	0.46	101,048.74	2.456E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,723,040.89	0.29	68.3	Analog	0.30	3
2	Sc	45	104,186.91	2.54	73.9	Pulse	0.30	3
3	Sc	45	2,993,373.22	1.22	75.8	Analog	0.30	3
1	Ge	72	73,855.57	0.76	72.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	66,699.21	1.77	73.0	Pulse	0.30	3
2	Rh	103	1,887,087.63	1.43	69.6	Analog	0.30	3
3	Rh	103	4,068,231.47	1.16	71.9	Analog	0.30	3
3	In	115	4,572,929.08	1.16	76.2	Analog	0.30	3
3	Tb	159	7,206,439.82	0.90	81.2	Analog	0.30	3
3	Bi	209	4,114,108.79	1.50	73.8	Analog	0.30	3

Quantitation Report

File Name	A0518035.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:42
Sample Name	N019741-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	6.484E-06	Pulse	0.30	3
B	11	6	3	3.901	ppb	1.61	261,989.77	1.391E-01	Pulse	0.30	3
Na	23	45	2	3266.570	ppb	0.12	4,873,706.87	4.704E+01	Analog	0.30	3
Mg	26	45	2	719.418	ppb	0.64	94,447.88	9.116E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	155.03	1.491E-03	Pulse	0.30	3
K	39	45	2	120.812	ppb	1.50	71,193.05	6.873E-01	Pulse	0.30	3
Ca	44	45	3	3809.543	ppb	0.31	5,461,056.31	1.865E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	781.16	7.534E-03	Pulse	0.30	3
Cr	52	45	2	0.047	ppb	7.68	1,408.31	1.360E-02	Pulse	0.30	3
Mn	55	45	2	100.843	ppb	0.47	428,835.22	4.140E+00	Pulse	0.30	3
Fe	56	45	2	13.252	ppb	0.61	97,834.56	9.444E-01	Pulse	0.30	3
Co	59	45	2	0.075	ppb	2.47	1,182.88	1.142E-02	Pulse	0.30	3
Ni	60	72	2	0.148	ppb	7.68	831.39	1.160E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,406.62	1.959E-02	Pulse	0.30	3
Zn	66	72	2	0.263	ppb	16.31	903.11	1.261E-02	Pulse	0.30	3
As	75	72	2	0.395	ppb	6.68	349.50	4.872E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.250	ppb	2.45	1,293.44	5.990E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,821.53	3.938E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-902.30	-1.783E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	335.58	6.632E-05	Pulse	0.30	3
Ba	137	159	3	5.240	ppb	0.37	61,704.56	8.005E-03	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	2.85	3,703.96	7.592E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-52.47	-1.072E-05	Pulse	0.30	3
U	238	209	3	0.933	ppb	1.60	125,159.77	2.566E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,883,104.99	0.33	74.7	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	103,598.68	1.69	73.4	Pulse	0.30	3
3	Sc	45	2,928,003.26	0.47	74.1	Analog	0.30	3
1	Ge	72	78,982.26	1.27	77.6	Pulse	0.30	3
2	Ge	72	71,683.68	2.67	78.5	Pulse	0.30	3
2	Rh	103	2,160,000.70	1.63	79.6	Analog	0.30	3
3	Rh	103	4,625,406.35	0.49	81.7	Analog	0.30	3
3	In	115	5,060,008.89	0.73	84.3	Analog	0.30	3
3	Tb	159	7,708,400.79	1.14	86.8	Analog	0.30	3
3	Bi	209	4,878,760.45	0.46	87.5	Analog	0.30	3

Quantitation Report

File Name	A0518036.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:48
Sample Name	N019741-002B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
B	11	6	3	0.069	ppb	234.86	210,926.67	1.177E-01	Pulse	0.30	3
Na	23	45	2	3201.960	ppb	0.60	4,647,366.15	4.615E+01	Analog	0.30	3
Mg	26	45	2	702.425	ppb	1.87	89,639.71	8.901E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	237.74	2.361E-03	Pulse	0.30	3
K	39	45	2	118.781	ppb	1.19	68,359.92	6.789E-01	Pulse	0.30	3
Ca	44	45	3	3770.604	ppb	0.65	5,224,685.03	1.846E+00	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	727.83	7.216E-03	Pulse	0.30	3
Cr	52	45	2	0.041	ppb	19.12	1,324.44	1.315E-02	Pulse	0.30	3
Mn	55	45	2	101.055	ppb	0.12	417,738.16	4.148E+00	Pulse	0.30	3
Fe	56	45	2	13.440	ppb	1.43	96,389.10	9.571E-01	Pulse	0.30	3
Co	59	45	2	0.069	ppb	7.38	1,052.33	1.045E-02	Pulse	0.30	3
Ni	60	72	2	0.148	ppb	3.49	810.36	1.162E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,391.12	1.995E-02	Pulse	0.30	3
Zn	66	72	2	0.365	ppb	7.67	1,039.05	1.488E-02	Pulse	0.30	3
As	75	72	2	0.402	ppb	11.27	345.96	4.961E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.213	ppb	1.43	1,098.98	5.168E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,264.49	2.796E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-866.09	-1.744E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	280.02	5.639E-05	Pulse	0.30	3
Ba	137	159	3	5.155	ppb	0.57	60,470.66	7.876E-03	Pulse	0.30	3
Tl	205	209	3	0.014	ppb	5.93	2,777.05	5.663E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	53.11	1.078E-05	Pulse	0.30	3
U	238	209	3	0.923	ppb	1.22	124,472.34	2.538E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,792,477.66	0.53	71.1	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	100,699.99	1.50	71.4	Pulse	0.30	3
3	Sc	45	2,830,119.92	0.11	71.6	Analog	0.30	3
1	Ge	72	77,650.52	0.50	76.3	Pulse	0.30	3
2	Ge	72	69,777.50	1.86	76.4	Pulse	0.30	3
2	Rh	103	2,126,940.02	1.45	78.4	Analog	0.30	3
3	Rh	103	4,522,295.14	0.47	79.9	Analog	0.30	3
3	In	115	4,965,874.99	0.24	82.7	Analog	0.30	3
3	Tb	159	7,678,335.79	0.46	86.5	Analog	0.30	3
3	Bi	209	4,903,729.96	0.68	88.0	Analog	0.30	3

Quantitation Report

File Name	A0518037.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:53
Sample Name	N019607-010B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.025	ppb	0.42	144.45	1.571E-04	Pulse	0.30	3
B	11	6	3	5434.205	ppb	2.73	28,072,785.69	3.055E+01	Analog	0.30	3
Na	23	45	2	2260340.171	ppb	0.41	3,265,007,240.24	3.119E+04	Analog	0.30	3
Mg	26	45	2	61641.391	ppb	0.43	8,169,794.19	7.803E+01	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	570.89	5.448E-03	Pulse	0.30	3
K	39	45	2	10463.906	ppb	0.73	4,540,540.21	4.336E+01	Analog	0.30	3
Ca	44	45	3	136828.007	ppb	0.57	236,388,807.59	6.682E+01	Analog	0.30	3
V	51	45	2	9.651	ppb	0.70	58,729.34	5.609E-01	Pulse	0.30	3
Cr	52	45	2	1.602	ppb	1.29	14,114.05	1.348E-01	Pulse	0.30	3
Mn	55	45	2	195.577	ppb	0.48	840,169.98	8.026E+00	Pulse	0.30	3
Fe	56	45	2	120.014	ppb	0.54	853,815.04	8.157E+00	Pulse	0.30	3
Co	59	45	2	0.127	ppb	7.36	1,981.12	1.896E-02	Pulse	0.30	3
Ni	60	72	2	8.528	ppb	2.24	27,395.07	4.714E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-63,668.63	-1.096E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-5,682.45	-9.774E-02	Pulse	0.30	3
As	75	72	2	11.645	ppb	2.43	7,837.52	1.349E-01	Pulse	0.75	3
Se	78	72	1	14.023	ppb	6.38	3,836.19	6.859E-02	Pulse	0.30	3
Mo	95	103	2	97.005	ppb	0.69	315,369.33	2.164E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-3,449.40	-1.060E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-89.65	-2.416E-05	Pulse	0.30	3
Sb	121	115	3	0.515	ppb	2.85	12,428.72	3.361E-03	Pulse	0.30	3
Ba	137	159	3	40.454	ppb	0.28	345,433.69	6.153E-02	Pulse	0.30	3
Tl	205	209	3	0.103	ppb	3.17	5,970.36	2.184E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-13,416.37	-4.908E-03	Pulse	0.30	3
U	238	209	3	278.756	ppb	0.59	20,920,629.09	7.654E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	919,455.72	3.22	36.5	Analog	0.30	3
2	Sc	45	104,684.99	4.46	74.2	Pulse	0.30	3
3	Sc	45	3,537,607.55	1.32	89.5	Analog	0.30	3
1	Ge	72	55,932.15	2.37	54.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	58,084.22	3.68	63.6	Pulse	0.30	3
2	Rh	103	1,457,297.37	3.81	53.7	Analog	0.30	3
3	Rh	103	3,253,017.38	0.67	57.5	Analog	0.30	3
3	In	115	3,698,377.04	0.95	61.6	Analog	0.30	3
3	Tb	159	5,614,086.79	0.70	63.2	Analog	0.30	3
3	Bi	209	2,733,542.29	0.97	49.1	Analog	0.30	3

Quantitation Report

File Name	A0518038.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 19:59
Sample Name	CCV2,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.470	ppb	0.82	296,072.19	1.155E-01	Pulse	0.30	3
B	11	6	3	212.365	ppb	0.36	3,348,958.66	1.307E+00	Analog	0.30	3
Na	23	45	2	560.572	ppb	5.37	1,393,097.58	9.713E+00	Analog	0.30	3
Mg	26	45	2	204.061	ppb	0.83	37,193.15	2.593E-01	Pulse	0.30	3
Al	27	45	2	18.228	ppb	3.38	7,712.87	5.376E-02	Pulse	0.30	3
K	39	45	2	225.377	ppb	0.78	160,495.63	1.119E+00	Pulse	0.30	3
Ca	44	45	3	199.111	ppb	0.16	409,442.24	1.020E-01	Pulse	0.30	3
V	51	45	2	19.739	ppb	0.62	163,345.61	1.139E+00	Pulse	0.30	3
Cr	52	45	2	19.075	ppb	0.48	214,745.70	1.497E+00	Pulse	0.30	3
Mn	55	45	2	19.650	ppb	0.20	116,040.09	8.088E-01	Pulse	0.30	3
Fe	56	45	2	18.890	ppb	0.67	190,131.38	1.325E+00	Pulse	0.30	3
Co	59	45	2	19.055	ppb	1.12	398,064.63	2.775E+00	Pulse	0.30	3
Ni	60	72	2	20.086	ppb	1.17	103,414.09	1.106E+00	Pulse	0.30	3
Cu	63	72	2	19.324	ppb	0.66	286,148.16	3.059E+00	Pulse	0.30	3
Zn	66	72	2	19.810	ppb	0.63	41,940.76	4.484E-01	Pulse	0.30	3
As	75	72	2	20.028	ppb	1.31	21,676.70	2.317E-01	Pulse	0.75	3
Se	78	72	1	19.006	ppb	2.91	9,939.02	9.296E-02	Pulse	0.30	3
Mo	95	103	2	20.252	ppb	1.85	121,808.74	4.520E-02	Pulse	0.30	3
Ag	107	103	3	18.911	ppb	0.92	943,370.02	1.655E-01	Pulse	0.30	3
Cd	111	115	3	19.780	ppb	0.62	227,789.37	3.758E-02	Pulse	0.30	3
Sb	121	115	3	19.416	ppb	0.87	747,278.18	1.233E-01	Pulse	0.30	3
Ba	137	159	3	21.785	ppb	0.66	288,052.16	3.315E-02	Pulse	0.30	3
Tl	205	209	3	20.026	ppb	0.61	1,954,182.33	3.622E-01	Analog	0.30	3
Pb	208	209	3	19.812	ppb	0.60	2,633,340.74	4.881E-01	Analog	0.30	3
U	238	209	3	18.930	ppb	1.53	2,803,954.85	5.198E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,563,326.62	0.55	101.6	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	143,464.62	0.85	101.7	Pulse	0.30	3
3	Sc	45	4,012,630.36	0.23	101.6	Analog	0.30	3
1	Ge	72	106,914.17	0.45	105.0	Pulse	0.30	3
2	Ge	72	93,544.13	0.78	102.4	Pulse	0.30	3
2	Rh	103	2,694,607.94	0.56	99.3	Analog	0.30	3
3	Rh	103	5,701,430.05	0.84	100.8	Analog	0.30	3
3	In	115	6,060,798.87	0.67	101.0	Analog	0.30	3
3	Tb	159	8,688,821.75	0.69	97.9	Analog	0.30	3
3	Bi	209	5,395,025.55	1.12	96.8	Analog	0.30	3

Quantitation Report

File Name	A0518039.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:04
Sample Name	CCB2,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	195.29	37.78	1.637E-05	Pulse	0.30	3
B	11	6	3	3.717	ppb	6.05	318,478.45	1.381E-01	Pulse	0.30	3
Na	23	45	2	183.947	ppb	11.04	586,415.38	4.517E+00	Pulse	0.30	3
Mg	26	45	2	0.239	ppb	56.06	161.12	1.242E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	614.48	4.735E-03	Pulse	0.30	3
K	39	45	2	11.633	ppb	24.40	30,749.29	2.368E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,561.04	4.803E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	1,025.64	7.892E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	921.69	7.089E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	304.08	2.343E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	4,229.01	3.257E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	114.02	81.63	6.291E-04	Pulse	0.30	3
Ni	60	72	2	0.305	ppb	10.55	1,765.12	2.023E-02	Pulse	0.30	3
Cu	63	72	2	0.008	ppb	174.04	3,166.61	3.628E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	568.11	6.508E-03	Pulse	0.30	3
As	75	72	2	0.003	ppb	215.06	30.67	3.515E-04	Pulse	0.75	3
Se	78	72	1	0.009	ppb	84.81	5.55	5.723E-05	Pulse	0.30	3
Mo	95	103	2	0.112	ppb	8.03	731.16	2.899E-04	Pulse	0.30	3
Ag	107	103	3	0.100	ppb	12.23	7,806.65	1.451E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-32.14	-5.630E-06	Pulse	0.30	3
Sb	121	115	3	0.034	ppb	7.62	1,779.07	3.116E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	300.65	3.582E-05	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	33.24	1,901.32	3.648E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,828.91	3.508E-04	Pulse	0.30	3
U	238	209	3	0.006	ppb	9.05	1,073.73	2.060E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,306,175.34	0.43	91.4	Analog	0.30	3
2	Sc	45	129,935.72	2.02	92.1	Pulse	0.30	3
3	Sc	45	3,656,614.67	0.46	92.5	Analog	0.30	3
1	Ge	72	96,672.04	1.07	94.9	Pulse	0.30	3
2	Ge	72	87,258.41	0.51	95.6	Pulse	0.30	3
2	Rh	103	2,520,941.91	1.79	92.9	Analog	0.30	3
3	Rh	103	5,378,964.78	0.19	95.1	Analog	0.30	3
3	In	115	5,710,863.41	0.55	95.1	Analog	0.30	3
3	Tb	159	8,398,869.87	0.64	94.6	Analog	0.30	3
3	Bi	209	5,212,824.78	0.59	93.5	Analog	0.30	3

Quantitation Report

File Name	A0518040.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:10
Sample Name	N019607-010A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	43.78	40.00	3.956E-05	Pulse	0.30	3
B	11	6	3	5540.658	ppb	0.84	31,620,990.95	3.114E+01	Analog	0.30	3
Na	23	45	2	2469653.782	ppb	0.96	3,946,505,790.08	3.407E+04	Analog	0.30	3
Mg	26	45	2	57819.927	ppb	0.51	8,476,551.40	7.319E+01	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	662.53	5.695E-03	Pulse	0.30	3
K	39	45	2	10750.907	ppb	1.21	5,160,349.09	4.455E+01	Analog	0.30	3
Ca	44	45	3	11124.616	ppb	0.50	21,492,552.74	5.437E+00	Analog	0.30	3
V	51	45	2	9.501	ppb	1.05	63,978.89	5.524E-01	Pulse	0.30	3
Cr	52	45	2	0.534	ppb	4.20	5,974.01	5.155E-02	Pulse	0.30	3
Mn	55	45	2	2.893	ppb	2.66	14,055.92	1.214E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-180,190.92	-1.556E+00	Pulse	0.30	3
Co	59	45	2	0.082	ppb	13.12	1,429.71	1.234E-02	Pulse	0.30	3
Ni	60	72	2	6.836	ppb	1.58	23,981.01	3.786E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-79,275.89	-1.251E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,684.66	-1.685E-01	Pulse	0.30	3
As	75	72	2	11.624	ppb	0.24	8,531.18	1.346E-01	Pulse	0.75	3
Se	78	72	1	14.388	ppb	3.64	4,339.67	7.037E-02	Pulse	0.30	3
Mo	95	103	2	95.757	ppb	1.15	341,982.49	2.136E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,719.13	-4.941E-04	Pulse	0.30	3
Cd	111	115	3	0.075	ppb	13.14	582.99	1.469E-04	Pulse	0.30	3
Sb	121	115	3	0.515	ppb	1.75	13,336.19	3.360E-03	Pulse	0.30	3
Ba	137	159	3	1.919	ppb	1.47	17,544.17	2.957E-03	Pulse	0.30	3
Tl	205	209	3	0.085	ppb	7.21	5,304.51	1.854E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-11,132.51	-3.891E-03	Pulse	0.30	3
U	238	209	3	267.121	ppb	0.64	20,981,681.60	7.334E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,015,400.88	2.17	40.3	Analog	0.30	3
2	Sc	45	115,800.30	3.96	82.1	Pulse	0.30	3
3	Sc	45	3,952,767.34	0.73	100.0	Analog	0.30	3
1	Ge	72	61,697.46	3.99	60.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	63,369.34	3.67	69.4	Pulse	0.30	3
2	Rh	103	1,600,747.57	3.20	59.0	Analog	0.30	3
3	Rh	103	3,478,632.97	0.97	61.5	Analog	0.30	3
3	In	115	3,969,222.81	0.39	66.1	Analog	0.30	3
3	Tb	159	5,932,560.47	0.43	66.8	Analog	0.30	3
3	Bi	209	2,860,828.32	0.05	51.3	Analog	0.30	3

Quantitation Report

File Name	A0518041.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:15
Sample Name	N019611-012B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.020	ppb	29.32	283.35	1.326E-04	Pulse	0.30	3
B	11	6	3	261.777	ppb	0.66	3,379,643.88	1.583E+00	Analog	0.30	3
Na	23	45	2	89082.262	ppb	0.11	168,372,604.16	1.231E+03	Analog	0.30	3
Mg	26	45	2	18053.032	ppb	1.05	3,125,976.59	2.285E+01	Analog	0.30	3
Al	27	45	2	253.112	ppb	0.61	88,222.17	6.450E-01	Pulse	0.30	3
K	39	45	2	3314.575	ppb	0.38	1,896,572.00	1.387E+01	Analog	0.30	3
Ca	44	45	3	90489.366	ppb	0.18	181,540,321.74	4.419E+01	Analog	0.30	3
V	51	45	2	2.558	ppb	1.70	21,174.29	1.548E-01	Pulse	0.30	3
Cr	52	45	2	1.172	ppb	2.05	13,856.63	1.013E-01	Pulse	0.30	3
Mn	55	45	2	1496.190	ppb	0.45	8,396,036.57	6.138E+01	Analog	0.30	3
Fe	56	45	2	1203.288	ppb	0.32	11,126,455.39	8.134E+01	Analog	0.30	3
Co	59	45	2	1.017	ppb	1.37	20,315.03	1.485E-01	Pulse	0.30	3
Ni	60	72	2	1.199	ppb	2.85	5,783.66	6.930E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-748.08	-8.964E-03	Pulse	0.30	3
Zn	66	72	2	0.265	ppb	6.01	1,057.20	1.267E-02	Pulse	0.30	3
As	75	72	2	9.459	ppb	0.69	9,147.10	1.096E-01	Pulse	0.75	3
Se	78	72	1	0.015	ppb	123.28	7.78	8.254E-05	Pulse	0.30	3
Mo	95	103	2	3.030	ppb	2.26	15,680.46	6.797E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,357.81	-4.909E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-544.90	-1.023E-04	Pulse	0.30	3
Sb	121	115	3	0.056	ppb	2.52	2,394.73	4.497E-04	Pulse	0.30	3
Ba	137	159	3	119.086	ppb	0.56	1,457,323.54	1.811E-01	Analog	0.30	3
Tl	205	209	3	0.036	ppb	4.96	4,344.15	9.746E-04	Pulse	0.30	3
Pb	208	209	3	0.036	ppb	4.62	6,116.88	1.372E-03	Pulse	0.30	3
U	238	209	3	22.291	ppb	0.86	2,728,540.03	6.121E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,134,705.50	0.79	84.6	Analog	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	136,783.88	0.60	97.0	Pulse	0.30	3
3	Sc	45	4,107,867.85	0.02	104.0	Analog	0.30	3
1	Ge	72	94,249.63	1.77	92.6	Pulse	0.30	3
2	Ge	72	83,453.42	0.13	91.4	Pulse	0.30	3
2	Rh	103	2,306,788.45	1.17	85.0	Analog	0.30	3
3	Rh	103	4,803,401.25	0.40	84.9	Analog	0.30	3
3	In	115	5,324,782.04	0.47	88.7	Analog	0.30	3
3	Tb	159	8,049,041.69	0.66	90.7	Analog	0.30	3
3	Bi	209	4,458,018.82	0.62	80.0	Analog	0.30	3

Quantitation Report

File Name	A0518042.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:21
Sample Name	N019611-012A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.012	ppb	7.88	174.45	8.020E-05	Pulse	0.30	3
B	11	6	3	235.279	ppb	0.20	3,122,261.37	1.435E+00	Analog	0.30	3
Na	23	45	2	210249.982	ppb	0.73	379,435,945.46	2.903E+03	Analog	0.30	3
Mg	26	45	2	16023.728	ppb	1.06	2,651,347.08	2.029E+01	Analog	0.30	3
Al	27	45	2	152.792	ppb	1.58	51,313.88	3.925E-01	Pulse	0.30	3
K	39	45	2	3309.036	ppb	0.49	1,809,371.52	1.384E+01	Analog	0.30	3
Ca	44	45	3	2747.545	ppb	0.68	5,520,173.39	1.347E+00	Analog	0.30	3
V	51	45	2	2.383	ppb	0.65	18,929.33	1.448E-01	Pulse	0.30	3
Cr	52	45	2	0.919	ppb	1.69	10,663.26	8.158E-02	Pulse	0.30	3
Mn	55	45	2	50.235	ppb	0.67	269,742.80	2.064E+00	Pulse	0.30	3
Fe	56	45	2	861.462	ppb	0.40	7,614,048.71	5.825E+01	Analog	0.30	3
Co	59	45	2	0.585	ppb	3.75	11,190.07	8.561E-02	Pulse	0.30	3
Ni	60	72	2	2.110	ppb	3.89	9,503.37	1.193E-01	Pulse	0.30	3
Cu	63	72	2	0.085	ppb	12.75	3,848.82	4.829E-02	Pulse	0.30	3
Zn	66	72	2	0.233	ppb	17.98	952.62	1.195E-02	Pulse	0.30	3
As	75	72	2	8.872	ppb	1.12	8,198.24	1.028E-01	Pulse	0.75	3
Se	78	72	1	0.042	ppb	65.42	18.89	2.150E-04	Pulse	0.30	3
Mo	95	103	2	3.102	ppb	3.57	15,450.25	6.958E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,190.74	-2.482E-04	Pulse	0.30	3
Cd	111	115	3	0.002	ppb	149.32	47.74	8.868E-06	Pulse	0.30	3
Sb	121	115	3	0.058	ppb	2.27	2,478.08	4.611E-04	Pulse	0.30	3
Ba	137	159	3	4.994	ppb	1.57	61,743.22	7.630E-03	Pulse	0.30	3
Tl	205	209	3	0.034	ppb	6.63	4,129.65	9.226E-04	Pulse	0.30	3
Pb	208	209	3	0.058	ppb	2.92	8,507.41	1.900E-03	Pulse	0.30	3
U	238	209	3	19.859	ppb	0.45	2,441,092.24	5.453E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,176,069.37	1.04	86.3	Analog	0.30	3
2	Sc	45	130,720.19	1.91	92.7	Pulse	0.30	3
3	Sc	45	4,099,818.13	1.20	103.8	Analog	0.30	3
1	Ge	72	87,785.98	0.76	86.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	79,724.92	2.01	87.3	Pulse	0.30	3
2	Rh	103	2,220,763.91	1.34	81.9	Analog	0.30	3
3	Rh	103	4,797,701.42	0.69	84.8	Analog	0.30	3
3	In	115	5,374,018.79	1.05	89.5	Analog	0.30	3
3	Tb	159	8,091,084.67	0.94	91.2	Analog	0.30	3
3	Bi	209	4,476,583.30	0.74	80.3	Analog	0.30	3

Quantitation Report

File Name	A0518043.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:26
Sample Name	N019639-015B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.034	ppb	11.26	458.91	2.120E-04	Pulse	0.30	3
B	11	6	3	367.509	ppb	0.83	4,707,778.85	2.175E+00	Analog	0.30	3
Na	23	45	2	131903.964	ppb	0.46	251,448,616.25	1.822E+03	Analog	0.30	3
Mg	26	45	2	12652.528	ppb	0.36	2,210,964.86	1.602E+01	Analog	0.30	3
Al	27	45	2	695.206	ppb	0.69	242,599.02	1.758E+00	Pulse	0.30	3
K	39	45	2	2756.319	ppb	1.56	1,595,908.36	1.156E+01	Analog	0.30	3
Ca	44	45	3	64293.861	ppb	0.20	128,988,995.86	3.140E+01	Analog	0.30	3
V	51	45	2	6.757	ppb	1.09	54,559.75	3.953E-01	Pulse	0.30	3
Cr	52	45	2	3.457	ppb	3.35	38,573.76	2.794E-01	Pulse	0.30	3
Mn	55	45	2	19.438	ppb	0.74	110,428.96	8.001E-01	Pulse	0.30	3
Fe	56	45	2	863.629	ppb	2.46	8,060,551.96	5.840E+01	Analog	0.30	3
Co	59	45	2	0.384	ppb	4.44	7,770.20	5.632E-02	Pulse	0.30	3
Ni	60	72	2	1.967	ppb	2.44	9,659.30	1.114E-01	Pulse	0.30	3
Cu	63	72	2	0.369	ppb	6.96	8,030.87	9.266E-02	Pulse	0.30	3
Zn	66	72	2	2.088	ppb	1.53	4,622.59	5.331E-02	Pulse	0.30	3
As	75	72	2	2.355	ppb	2.48	2,387.36	2.752E-02	Pulse	0.75	3
Se	78	72	1	0.232	ppb	17.85	110.01	1.147E-03	Pulse	0.30	3
Mo	95	103	2	1.239	ppb	4.03	6,514.94	2.804E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,805.30	-3.717E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-351.32	-6.487E-05	Pulse	0.30	3
Sb	121	115	3	0.023	ppb	20.89	1,301.22	2.403E-04	Pulse	0.30	3
Ba	137	159	3	47.433	ppb	0.41	592,459.48	7.214E-02	Pulse	0.30	3
Tl	205	209	3	0.032	ppb	8.29	4,084.08	9.030E-04	Pulse	0.30	3
Pb	208	209	3	0.251	ppb	1.73	30,114.12	6.659E-03	Pulse	0.30	3
U	238	209	3	12.278	ppb	1.34	1,524,793.93	3.372E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,164,284.38	0.71	85.8	Analog	0.30	3
2	Sc	45	138,026.94	1.71	97.8	Pulse	0.30	3
3	Sc	45	4,107,771.05	0.26	104.0	Analog	0.30	3
1	Ge	72	95,811.58	1.33	94.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	86,720.30	2.61	95.0	Pulse	0.30	3
2	Rh	103	2,324,099.93	1.45	85.7	Analog	0.30	3
3	Rh	103	4,856,538.09	0.37	85.8	Analog	0.30	3
3	In	115	5,415,958.53	0.40	90.2	Analog	0.30	3
3	Tb	159	8,212,853.07	0.65	92.5	Analog	0.30	3
3	Bi	209	4,522,479.48	0.53	81.2	Analog	0.30	3

Quantitation Report

File Name	A0518044.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:32
Sample Name	N019639-015A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.028	ppb	4.77	416.69	1.794E-04	Pulse	0.30	3
B	11	6	3	349.101	ppb	0.77	4,813,144.67	2.072E+00	Analog	0.30	3
Na	23	45	2	174744.454	ppb	1.14	334,339,917.24	2.413E+03	Analog	0.30	3
Mg	26	45	2	11945.225	ppb	0.57	2,095,626.13	1.512E+01	Analog	0.30	3
Al	27	45	2	526.986	ppb	1.19	184,905.79	1.334E+00	Pulse	0.30	3
K	39	45	2	2643.592	ppb	1.71	1,537,677.34	1.110E+01	Analog	0.30	3
Ca	44	45	3	45129.528	ppb	0.27	95,494,317.47	2.204E+01	Analog	0.30	3
V	51	45	2	6.289	ppb	2.11	51,056.32	3.684E-01	Pulse	0.30	3
Cr	52	45	2	3.262	ppb	2.03	36,606.49	2.642E-01	Pulse	0.30	3
Mn	55	45	2	16.166	ppb	0.86	92,275.08	6.659E-01	Pulse	0.30	3
Fe	56	45	2	684.091	ppb	2.04	6,410,053.60	4.627E+01	Analog	0.30	3
Co	59	45	2	0.327	ppb	3.09	6,666.46	4.812E-02	Pulse	0.30	3
Ni	60	72	2	1.827	ppb	2.40	8,847.69	1.037E-01	Pulse	0.30	3
Cu	63	72	2	0.170	ppb	9.26	5,253.66	6.161E-02	Pulse	0.30	3
Zn	66	72	2	1.628	ppb	6.55	3,668.81	4.304E-02	Pulse	0.30	3
As	75	72	2	2.239	ppb	2.87	2,233.02	2.618E-02	Pulse	0.75	3
Se	78	72	1	0.258	ppb	22.64	116.67	1.275E-03	Pulse	0.30	3
Mo	95	103	2	1.143	ppb	4.26	5,992.50	2.589E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,588.09	-3.173E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-260.87	-4.605E-05	Pulse	0.30	3
Sb	121	115	3	0.020	ppb	6.24	1,254.55	2.215E-04	Pulse	0.30	3
Ba	137	159	3	34.608	ppb	0.62	451,311.16	5.264E-02	Pulse	0.30	3
Tl	205	209	3	0.030	ppb	6.09	3,982.95	8.553E-04	Pulse	0.30	3
Pb	208	209	3	0.220	ppb	1.23	27,443.15	5.895E-03	Pulse	0.30	3
U	238	209	3	11.613	ppb	0.85	1,484,640.21	3.189E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,322,764.47	0.48	92.1	Analog	0.30	3
2	Sc	45	138,575.97	1.59	98.2	Pulse	0.30	3
3	Sc	45	4,332,280.46	0.82	109.7	Analog	0.30	3
1	Ge	72	91,446.66	0.48	89.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	85,293.74	1.70	93.4	Pulse	0.30	3
2	Rh	103	2,313,716.54	1.11	85.3	Analog	0.30	3
3	Rh	103	5,005,536.97	0.22	88.5	Analog	0.30	3
3	In	115	5,665,067.66	0.75	94.4	Analog	0.30	3
3	Tb	159	8,572,908.35	0.27	96.6	Analog	0.30	3
3	Bi	209	4,655,634.06	0.77	83.5	Analog	0.30	3

Quantitation Report

File Name	A0518045.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:37
Sample Name	CCV3,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.529	ppb	1.37	298,702.02	1.159E-01	Pulse	0.30	3
B	11	6	3	200.302	ppb	1.50	3,194,371.96	1.239E+00	Analog	0.30	3
Na	23	45	2	347.773	ppb	6.20	1,002,589.81	6.777E+00	Pulse	0.30	3
Mg	26	45	2	201.683	ppb	2.14	37,922.40	2.562E-01	Pulse	0.30	3
Al	27	45	2	18.873	ppb	4.72	8,196.39	5.539E-02	Pulse	0.30	3
K	39	45	2	221.684	ppb	2.47	163,310.99	1.104E+00	Pulse	0.30	3
Ca	44	45	3	199.531	ppb	0.95	427,248.23	1.022E-01	Pulse	0.30	3
V	51	45	2	19.610	ppb	1.52	167,425.33	1.131E+00	Pulse	0.30	3
Cr	52	45	2	18.921	ppb	1.38	219,783.52	1.485E+00	Pulse	0.30	3
Mn	55	45	2	19.536	ppb	1.83	119,015.60	8.041E-01	Pulse	0.30	3
Fe	56	45	2	18.857	ppb	1.90	195,825.45	1.323E+00	Pulse	0.30	3
Co	59	45	2	19.006	ppb	0.93	409,658.10	2.768E+00	Pulse	0.30	3
Ni	60	72	2	20.554	ppb	0.57	107,730.51	1.131E+00	Pulse	0.30	3
Cu	63	72	2	19.528	ppb	0.41	294,357.04	3.091E+00	Pulse	0.30	3
Zn	66	72	2	19.785	ppb	1.92	42,650.14	4.478E-01	Pulse	0.30	3
As	75	72	2	20.203	ppb	1.24	22,259.70	2.337E-01	Pulse	0.75	3
Se	78	72	1	19.615	ppb	3.86	10,238.08	9.594E-02	Pulse	0.30	3
Mo	95	103	2	20.115	ppb	1.67	124,173.21	4.490E-02	Pulse	0.30	3
Ag	107	103	3	19.120	ppb	0.23	981,042.53	1.673E-01	Pulse	0.30	3
Cd	111	115	3	19.716	ppb	0.37	237,711.23	3.746E-02	Pulse	0.30	3
Sb	121	115	3	19.104	ppb	0.93	769,808.16	1.213E-01	Pulse	0.30	3
Ba	137	159	3	21.629	ppb	0.61	296,630.70	3.292E-02	Pulse	0.30	3
Tl	205	209	3	20.033	ppb	1.01	2,020,695.16	3.624E-01	Analog	0.30	3
Pb	208	209	3	19.947	ppb	0.20	2,740,892.14	4.915E-01	Analog	0.30	3
U	238	209	3	18.879	ppb	1.73	2,890,633.26	5.184E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,578,498.71	0.95	102.2	Analog	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	148,035.98	2.22	104.9	Pulse	0.30	3
3	Sc	45	4,178,753.10	0.11	105.8	Analog	0.30	3
1	Ge	72	106,684.73	1.74	104.8	Pulse	0.30	3
2	Ge	72	95,237.91	1.42	104.3	Pulse	0.30	3
2	Rh	103	2,765,158.40	1.77	101.9	Analog	0.30	3
3	Rh	103	5,864,568.94	0.66	103.6	Analog	0.30	3
3	In	115	6,345,292.49	0.76	105.7	Analog	0.30	3
3	Tb	159	9,011,882.64	0.36	101.5	Analog	0.30	3
3	Bi	209	5,576,802.90	1.16	100.1	Analog	0.30	3

Quantitation Report

File Name	A0518046.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:43
Sample Name	CCB3,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	52.85	37.78	1.543E-05	Pulse	0.30	3
B	11	6	3	<0.000	ppb	---	267,451.33	1.092E-01	Pulse	0.30	3
Na	23	45	2	69.765	ppb	17.99	416,548.45	2.942E+00	Pulse	0.30	3
Mg	26	45	2	0.216	ppb	77.86	172.23	1.213E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	718.94	5.077E-03	Pulse	0.30	3
K	39	45	2	8.055	ppb	39.77	31,440.55	2.220E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	18,203.97	4.587E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	1,131.20	7.982E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	885.20	6.238E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	298.95	2.107E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	4,846.82	3.421E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	415.91	68.46	4.843E-04	Pulse	0.30	3
Ni	60	72	2	0.490	ppb	3.97	2,838.83	3.041E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,745.96	2.942E-02	Pulse	0.30	3
Zn	66	72	2	0.004	ppb	1537.71	638.55	6.839E-03	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	25.78	2.763E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	60.53	6.67	6.470E-05	Pulse	0.30	3
Mo	95	103	2	0.069	ppb	13.62	530.04	1.941E-04	Pulse	0.30	3
Ag	107	103	3	0.088	ppb	12.58	7,801.88	1.353E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	21.81	3.546E-06	Pulse	0.30	3
Sb	121	115	3	0.038	ppb	3.79	2,070.23	3.374E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	321.31	3.621E-05	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	1,624.61	2.928E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	2,070.60	3.731E-04	Pulse	0.30	3

Quantitation Report

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.003	ppb	18.41	725.56	1.307E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,449,452.31	1.11	97.1	Analog	0.30	3
2	Sc	45	141,725.62	2.23	100.5	Pulse	0.30	3
3	Sc	45	3,968,437.37	0.69	100.4	Analog	0.30	3
1	Ge	72	103,184.73	0.67	101.3	Pulse	0.30	3
2	Ge	72	93,343.75	0.33	102.2	Pulse	0.30	3
2	Rh	103	2,730,154.58	0.39	100.6	Analog	0.30	3
3	Rh	103	5,766,197.62	0.48	101.9	Analog	0.30	3
3	In	115	6,135,280.54	0.63	102.2	Analog	0.30	3
3	Tb	159	8,874,416.05	0.60	100.0	Analog	0.30	3
3	Bi	209	5,548,584.01	0.45	99.6	Analog	0.30	3

Quantitation Report

File Name	A0518047.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:48
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.507	ppb	3.85	7,307.41	3.016E-03	Pulse	0.30	3
B	11	6	3	<0.000	ppb	---	229,061.68	9.453E-02	Pulse	0.30	3
Na	23	45	2	21.193	ppb	32.53	319,385.09	2.272E+00	Pulse	0.30	3
Mg	26	45	2	0.631	ppb	9.82	244.46	1.738E-03	Pulse	0.30	3
Al	27	45	2	7.630	ppb	6.96	3,808.36	2.709E-02	Pulse	0.30	3
K	39	45	2	1.601	ppb	115.79	27,474.56	1.954E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	14,501.34	3.703E-03	Pulse	0.30	3
V	51	45	2	1.037	ppb	4.69	9,528.69	6.774E-02	Pulse	0.30	3
Cr	52	45	2	0.971	ppb	1.18	12,037.87	8.559E-02	Pulse	0.30	3
Mn	55	45	2	0.505	ppb	4.05	3,295.52	2.343E-02	Pulse	0.30	3
Fe	56	45	2	9.757	ppb	0.70	99,626.06	7.083E-01	Pulse	0.30	3
Co	59	45	2	0.492	ppb	1.14	10,140.95	7.210E-02	Pulse	0.30	3
Ni	60	72	2	1.455	ppb	1.15	7,897.40	8.331E-02	Pulse	0.30	3
Cu	63	72	2	0.942	ppb	3.33	17,285.47	1.824E-01	Pulse	0.30	3
Zn	66	72	2	10.107	ppb	1.74	21,998.71	2.321E-01	Pulse	0.30	3
As	75	72	2	0.093	ppb	28.42	131.12	1.385E-03	Pulse	0.75	3
Se	78	72	1	0.498	ppb	22.08	251.13	2.445E-03	Pulse	0.30	3
Mo	95	103	2	0.512	ppb	2.75	3,318.27	1.183E-03	Pulse	0.30	3
Ag	107	103	3	0.325	ppb	5.76	20,038.89	3.414E-03	Pulse	0.30	3
Cd	111	115	3	0.535	ppb	2.51	6,457.94	1.021E-03	Pulse	0.30	3
Sb	121	115	3	0.515	ppb	0.67	21,270.75	3.364E-03	Pulse	0.30	3
Ba	137	159	3	1.099	ppb	2.47	15,923.33	1.710E-03	Pulse	0.30	3
Tl	205	209	3	0.435	ppb	1.26	47,521.79	8.174E-03	Pulse	0.30	3
Pb	208	209	3	1.039	ppb	0.88	151,517.56	2.606E-02	Pulse	0.30	3

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
U	238	209	3	0.479	ppb	0.73	76,761.71	1.320E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,423,465.86	1.77	96.1	Analog	0.30	3
2	Sc	45	140,641.56	1.10	99.7	Pulse	0.30	3
3	Sc	45	3,916,871.50	1.25	99.1	Analog	0.30	3
1	Ge	72	102,645.30	0.38	100.8	Pulse	0.30	3
2	Ge	72	94,791.12	1.62	103.8	Pulse	0.30	3
2	Rh	103	2,804,945.48	2.05	103.4	Analog	0.30	3
3	Rh	103	5,870,854.08	0.78	103.8	Analog	0.30	3
3	In	115	6,323,870.90	0.33	105.4	Analog	0.30	3
3	Tb	159	9,310,950.07	0.43	104.9	Analog	0.30	3
3	Bi	209	5,813,734.98	0.23	104.3	Analog	0.30	3

Quantitation Report

File Name	A0518048.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:54
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	19.80	47.78	1.973E-05	Pulse	0.30	3
B	11	6	3	<0.000	ppb	---	157,689.33	6.511E-02	Pulse	0.30	3
Na	23	45	2	97821.341	ppb	1.54	196,799,288.18	1.351E+03	Analog	0.30	3
Mg	26	45	2	96624.542	ppb	1.27	17,812,342.37	1.223E+02	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	353.75	2.441E-03	Pulse	0.30	3
K	39	45	2	102773.552	ppb	0.77	61,790,487.41	4.242E+02	Analog	0.30	3
Ca	44	45	3	92663.012	ppb	0.66	195,129,712.65	4.525E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	800.06	5.489E-03	Pulse	0.30	3
Cr	52	45	2	0.112	ppb	6.94	2,717.81	1.865E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-22,335.54	-1.535E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-2,381.81	-1.639E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-69.35	-4.817E-04	Pulse	0.30	3
Ni	60	72	2	0.458	ppb	3.12	2,573.93	2.863E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-6,300.88	-7.007E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-578.75	-6.426E-03	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-3.20	-3.537E-05	Pulse	0.75	3
Se	78	72	1	0.023	ppb	52.65	11.11	1.214E-04	Pulse	0.30	3
Mo	95	103	2	0.033	ppb	28.90	280.02	1.136E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,773.43	5.118E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-430.39	-7.257E-05	Pulse	0.30	3
Sb	121	115	3	0.013	ppb	4.57	1,045.64	1.763E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-29,752.62	-3.337E-03	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	10.11	2,012.45	4.264E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-3,042.03	-6.443E-04	Pulse	0.30	3
U	238	209	3	0.002	ppb	22.10	487.78	1.034E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,421,767.48	0.39	96.0	Analog	0.30	3
2	Sc	45	145,666.55	3.47	103.3	Pulse	0.30	3
3	Sc	45	4,311,969.90	1.08	109.1	Analog	0.30	3
1	Ge	72	92,110.26	2.03	90.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	89,917.07	0.72	98.5	Pulse	0.30	3
2	Rh	103	2,463,559.09	1.18	90.8	Analog	0.30	3
3	Rh	103	5,418,786.59	0.18	95.8	Analog	0.30	3
3	In	115	5,929,973.85	0.18	98.8	Analog	0.30	3
3	Tb	159	8,917,313.62	0.31	100.5	Analog	0.30	3
3	Bi	209	4,719,782.26	0.40	84.7	Analog	0.30	3

Quantitation Report

File Name	A0518049.D
File Path	C:\ICPMH\1\DATA\160518A2.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/18/2016 20:59
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/18/2016 17:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.416	ppb	0.80	281,960.84	1.152E-01	Pulse	0.30	3
B	11	6	3	187.294	ppb	1.06	2,854,424.04	1.166E+00	Analog	0.30	3
Na	23	45	2	93666.840	ppb	0.70	196,501,850.41	1.294E+03	Analog	0.30	3
Mg	26	45	2	92983.428	ppb	0.93	17,870,149.45	1.177E+02	Analog	0.30	3
Al	27	45	2	22.458	ppb	1.07	9,781.11	6.441E-02	Pulse	0.30	3
K	39	45	2	100024.471	ppb	0.42	62,691,974.62	4.129E+02	Analog	0.30	3
Ca	44	45	3	89393.907	ppb	0.88	194,204,783.77	4.366E+01	Analog	0.30	3
V	51	45	2	20.156	ppb	1.10	176,486.56	1.162E+00	Pulse	0.30	3
Cr	52	45	2	18.736	ppb	0.56	223,252.01	1.470E+00	Pulse	0.30	3
Mn	55	45	2	20.586	ppb	0.35	128,641.08	8.472E-01	Pulse	0.30	3
Fe	56	45	2	18.175	ppb	1.51	193,897.68	1.277E+00	Pulse	0.30	3
Co	59	45	2	17.945	ppb	0.20	396,763.00	2.613E+00	Pulse	0.30	3
Ni	60	72	2	19.480	ppb	2.02	99,336.25	1.072E+00	Pulse	0.30	3
Cu	63	72	2	17.186	ppb	1.47	252,405.71	2.724E+00	Pulse	0.30	3
Zn	66	72	2	17.715	ppb	1.94	37,209.82	4.017E-01	Pulse	0.30	3
As	75	72	2	19.762	ppb	1.68	21,182.63	2.287E-01	Pulse	0.75	3
Se	78	72	1	17.402	ppb	2.46	8,386.95	8.512E-02	Pulse	0.30	3
Mo	95	103	2	23.270	ppb	0.58	131,635.00	5.194E-02	Pulse	0.30	3
Ag	107	103	3	18.597	ppb	0.81	904,966.00	1.627E-01	Pulse	0.30	3
Cd	111	115	3	18.160	ppb	0.12	209,480.86	3.451E-02	Pulse	0.30	3
Sb	121	115	3	19.673	ppb	0.96	758,382.81	1.249E-01	Pulse	0.30	3
Ba	137	159	3	23.804	ppb	0.05	328,256.82	3.622E-02	Pulse	0.30	3
Tl	205	209	3	21.221	ppb	2.16	1,843,126.22	3.838E-01	Analog	0.30	3
Pb	208	209	3	21.050	ppb	1.19	2,490,320.27	5.186E-01	Pulse	0.30	3
U	238	209	3	21.956	ppb	0.75	2,895,056.63	6.029E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	2,447,961.89	0.94	97.1	Analog	0.30	3
2	Sc	45	151,835.65	1.93	107.6	Pulse	0.30	3
3	Sc	45	4,448,577.71	1.16	112.6	Analog	0.30	3
1	Ge	72	98,567.84	2.17	96.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Ge	72	92,655.60	1.91	101.5	Pulse	0.30	3
2	Rh	103	2,534,566.09	1.09	93.4	Analog	0.30	3
3	Rh	103	5,561,273.81	0.68	98.3	Analog	0.30	3
3	In	115	6,070,460.75	0.70	101.1	Analog	0.30	3
3	Tb	159	9,062,294.59	0.49	102.1	Analog	0.30	3
3	Bi	209	4,802,313.40	0.87	86.2	Analog	0.30	3



RAW DATA

INJECTION LOG: 160520A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0520001.D	RINSE	RINSE	1	05/20/16 8:59 AM
A0520002.D	Cal Blank	IBLK	1	05/20/16 9:05 AM
A0520003.D	Std1-0.1/1 ppb	ICAL	1	05/20/16 9:10 AM
A0520004.D	Std2-0.5/5 ppb	ICAL	1	05/20/16 9:16 AM
A0520005.D	Std3-5/50 ppb	ICAL	1	05/20/16 9:21 AM
A0520006.D	Std4-10/100 ppb	ICAL	1	05/20/16 9:27 AM
A0520007.D	Std5-20/200 ppb	ICAL	1	05/20/16 9:33 AM
A0520008.D	Std6-40/400 ppb	ICAL	1	05/20/16 9:38 AM
A0520009.D	Std7-100/1000 ppb	ICAL	1	05/20/16 9:44 AM
A0520010.D	Std8-200/2000 ppb	ICAL	1	05/20/16 9:49 AM
A0520011.D	ICV	ICV	1	05/20/16 9:55 AM
A0520012.D	ICB	ICB	1	05/20/16 10:00 AM
A0520013.D	LLICV	CCV1	1	05/20/16 10:06 AM
A0520014.D	ICSA1	ICSA	1	05/20/16 10:11 AM
A0520015.D	ICSAB1	ICSAB	1	05/20/16 10:17 AM
A0520016.D	N019628-004B	SAMP	5	05/20/16 10:21 AM
A0520017.D	CCV1	CCV	1	05/20/16 10:26 AM
A0520018.D	CCB1	CCB	1	05/20/16 10:31 AM
A0520019.D	LLCCV1	CCV2	1	05/20/16 10:37 AM
A0520020.D	ICSA2	ICSA	1	05/20/16 10:42 AM
A0520021.D	ICSAB2	ICSAB	1	05/20/16 10:48 AM


5/20/2016

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	A0520001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	A0520002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	A0520003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 160401C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	A0520004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 160401C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	A0520005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 160401C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	A0520006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 160401C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1106	A0520007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 160401C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	A0520008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 160401C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	A0520009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 160401C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	A0520010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 160401C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	A0520011	ICV,ICV,1	10/100 ug/L,200mL of 2MWST- 160201C	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	A0520012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0520013	LLICV,CCV1,1	2MWST- 160201D	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0520014	ICSA1,ICSA,1	2MWST- 160401D	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0520015	ICSAB1,ICSAB,1	2MWST- 160401E	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4101	A0520016	N019628-004B,SAMP,5		1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0520017	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 160401C	1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0520018	CCB1,CCB,1		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0520019	LLCCV1,CCV2,1	2MWST- 160201D	1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0520020	ICSA2,ICSA,1	2MWST- 160401D	1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0520021	ICSAB2,ICSAB,1	2MWST- 160401E	1.000				

Quantitation Report

File Name	A0520002.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:05
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.000	ppb	---	2.22	2.348E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	95,041.03	1.11	100.0	Pulse	0.30	3

Quantitation Report

File Name	A0520003.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:10
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

NOT USED

5/20/2016

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.087	ppb	11.77	45.56	4.704E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	96,839.80	0.22	101.9	Pulse	0.30	3

Quantitation Report

File Name	A0520004.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:16
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.516	ppb	16.13	254.46	2.679E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	95,006.54	0.25	100.0	Pulse	0.30	3

Quantitation Report

File Name	A0520005.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:21
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	4.747	ppb	4.18	2,333.61	2.443E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	95,499.69	1.11	100.5	Pulse	0.30	3

Quantitation Report

File Name	A0520006.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:27
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	10.023	ppb	3.47	4,913.18	5.156E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	95,305.91	0.79	100.3	Pulse	0.30	3

Quantitation Report

File Name	A0520007.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:33
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	19.511	ppb	0.58	9,434.23	1.003E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	94,018.93	0.46	98.9	Pulse	0.30	3

Quantitation Report

File Name	A0520008.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:38
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	39.665	ppb	1.65	19,146.40	2.040E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	93,870.36	1.22	98.8	Pulse	0.30	3

Quantitation Report

File Name	A0520009.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:44
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	100.245	ppb	0.62	47,003.46	5.155E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	91,188.90	0.43	95.9	Pulse	0.30	3

Quantitation Report

File Name	A0520010.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:49
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	199.999	ppb	1.52	93,083.77	1.028E+00	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	90,526.41	1.18	95.2	Pulse	0.30	3

Quantitation Report

File Name	A0520011.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 09:55
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	10/100 ug/L,200mL of 2MWST- 160201C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	10.209	ppb	6.30	4,964.30	5.251E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	94,511.29	0.52	99.4	Pulse	0.30	3

Quantitation Report

File Name	A0520012.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:00
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.002	ppb	304.51	3.33	3.503E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	95,726.44	0.91	100.7	Pulse	0.30	3

Quantitation Report

File Name	A0520013.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:06
Sample Name	LLICV,CCV1,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.533	ppb	17.96	261.13	2.764E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	94,450.01	0.13	99.4	Pulse	0.30	3

Quantitation Report

File Name	A0520014.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:11
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.035	ppb	75.85	20.00	2.022E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	99,356.72	1.26	104.5	Pulse	0.30	3

Quantitation Report

File Name	A0520015.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:17
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	17.781	ppb	2.39	9,880.11	9.145E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	108,031.09	0.57	113.7	Pulse	0.30	3

Quantitation Report

File Name	A0520016.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:21
Sample Name	~~N019668-004B~~,SAMP,5 N019628-004B,SAMP,5
Sample Type	Sample
Comment	Se only
Prep Dilution	1.000
Auto Dilution	N/A 5/20/2016
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.702	ppb	6.12	295.57	3.632E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	81,366.29	0.14	85.6	Pulse	0.30	3

Quantitation Report

File Name	A0520017.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:26
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 160401C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	18.230	ppb	1.57	10,242.60	9.376E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	109,245.22	0.64	114.9	Pulse	0.30	3

Quantitation Report

File Name	A0520018.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:31
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.007	ppb	212.42	6.67	6.197E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	107,643.61	1.00	113.3	Pulse	0.30	3

Quantitation Report

File Name	A0520019.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:37
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 160201D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.537	ppb	13.62	292.24	2.783E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	105,076.75	0.67	110.6	Pulse	0.30	3

Quantitation Report

File Name	A0520020.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:42
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 160401D
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	0.027	ppb	38.06	15.56	1.606E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	96,875.89	1.65	101.9	Pulse	0.30	3

Quantitation Report

File Name	A0520021.D
File Path	C:\ICPMH\1\DATA\160520A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	05/20/2016 10:48
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 160401E
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	05/20/2016 10:47
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Se	78	72	1	16.276	ppb	0.76	9,102.94	8.371E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
1	Ge	72	108,748.30	0.66	114.4	Pulse	0.30	3

STANDARDS LOG

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-121025B	7500 Series PA Tuning 1	2.5, 5.0, 10, 50 ppm	Agilent	19-64VYY2	10/25/12	11/1/12	12/31/2013		MI
↓ C	7500 Series PA Tuning 2	5, 10 ppm	↓	19-62VYY2	↓	11/1/12	↓		↓
↓ D	Germanium	1000 ppm	High Purity Stds	1215310	10/25/12	11/6/12	4/15/2014		MI
2MSST-130301A	ICPMS major cations	50 ppm	ERA	750412	3/1/13	8/7/13	6/2015		MI
↓ B	ICPMS Trace Metals	10 ppm	↓	740412	↓	8/7/13	10/2014		↓
↓ C	ICPMS IS 1	10 ppm	High Purity Std	1211618	3/1/13	4/25/13	1/14/14		MI
2MSST-130329A	ICPMS Tuning Solution	10 ppm	ERA	140309	3/29/13	3/29/13	4/2014		MI
↓	ICPMS IS 1	10 ppm	High Purity Std	1301405	↓	5/26/13	3/20/14		↓
2MSST-130603A	ICPMS IS 1	10 ppm	High Purity Std	1301405	6/3/13	8/7/13	5/29/14		WS
2MSST-130910C ~~2MSST-130910A~~ MC 2/14/14	Hg - STD (1°) mercury	1000 ppm	High Purity Std	1316504	9/10/13	9/11/13	3/4/15		MC
2MSST-130910A	ICPMS Trace Metals	10 ppm	ERA	740412	9/10/13	1/7/14	10/2014		HSG
2MSST-130910B	ICPMS Major Cations	50 ppm	↓	750412	9/10/13	↓	6/2015		HSG
2MSST-130913A	ICPMS IS 1	10 ppm	High Purity Std	1301405	9/13/13	↓	9/9/14		HSC
2MSST-131220A	7500 Series PA Tuning 1	Multi concentration of Analytes	Agilent	20-47VYY2	12/20/13	1/2/14	02/28/15		MI
↓ B	7500 Series PA Tuning 2	↓	↓	20-45VYY2	↓	1/2/14	02/28/15		MI
2MSST-140113A	Hg 2° Standard Mercury	1000 ppm	Ultra Scientific	P00139	MC 3/4/14 ~~14~~ 01/13/14	MC 3/4/14 ~~R~~ 2/10/14	3/31/19		MC
2MSST-140217B	ICPMS IS 1	10 ppm	High Purity Stds	1333708	2/17/14	4/15/14	2/10/15	→ exp: 3/18/15 MI 3/18/14	PLN
2MSST ~~2MSST~~ - 140317A MI 3/17/14	Uranium	1000 ppm	High Purity Stds	1326239	3/17/14	3/18/14	9/11/15		MI
2MSST-140404A	Germanium	1000 ppm	High Purity Stds	1309919	4/4/14	4/15/14 ~~9/28/15~~ MI 4/4/14	9/28/15		MI

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Logbool #1

3/6/14 9/24/13 3/28/13 9/29

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-140530A	Cerium, 10 ppm	10 ppm	High Purity Stds	1321107	5/30/14	11/4/14	5/23/2015		mi
2MSST-140530B	ICP-MS-Internal Standard 1	10 ppm	↓	1333708	5/30/14	6/13/14	5/23/2015		mi
2MSST-140630A	ICP-MS Major cations	50 ppm	ERA	111013	6/30/14	11/1/14	4/2016	Exp: 11/1/15	mi
2MSST ~~2MSST~~ mi 8/5/14 -140805A	ICP-MS Internal Standard 1	10 ppm	High Purity Stds	1333708	8/5/14	11/4/14	7/29/15		mi
2MSST-141025A	ICP-MS trace metals	10 ppm	ERA	170913	10/25/14	11/1/14	3/2016	Exp: 11/1/15	mi
2MSST-150310A	Mercury	1000 ppm	High Purity Stds	1434315	3/10/15		9/10/16		mi
2MSST-150413A	7500 Series PA tuning 1	multi concentration of analytes	Agilent	21-169XYY2	4/13/15	4/13/15	7/31/16		mi
↓ B	↓ 2	↓	↓	↓	↓	↓	↓		↓
2MSST-150601A	ICP-MS Internal Std 1	10 ppm	High Purity Std	1420416	6/1/15	6/1/15	5/26/16		mi
2MSST-150907A	ICP-MS Internal Std 1	10 ppm	High Purity Std	1420416	9/7/15	9/7/15	9/29/16		mi
↓ B	Germanium	1000 ppm	High Purity Std	1506202	↓	↓	1/7/17		↓
2MSST-151019A	Uranium, 1000 ppm	1000 ppm	High Purity Std	1410530	10/~~20~~ 19/15 mi 10/19/15	10/19/15	4/16/17		mi

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Logbool #1

8 9/4/09

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
4/6/09	Zinc	MSST090406F	1000ppm	Ultra Scientific	J00510	4/6/9	4/20/09	7/31/15	MS
↓	Silicon	↓ G	10,000ppm	↓	J00332	↓	4/30/09	5/31/15	↓
4/8/09	Potassium	MSST090408A	10,000ppm	High Purity Stds	0902312	4/8/9	4/9/09	10/2/2010	MS
↓	Sodium	↓ B	↓	↓	0815801	↓	↓	↓	↓
4/10/09	Potassium	MSST090410A	10,000ppm	Ultra Scientific	J01077	4/10/9	9/10/09	12/31/15	MS
4/22/09	Chromium	MSST090422A	1000ppm	Ultra Scientific	J00073	9/22/09	4/30/09	3/31/15	MS
7/13/09	BISMUTH	MSST-090713A	1000ppm	High Purity Stds	0901405	7/13/9	7/16/9	1/10/11	MS
7/20/9	BISMUTH	MSST-090720A	1000ppm	EMD	HC764424A	7/20/9		7/31/10	MS
7/24/9	ALUMINUM	MSST-090724A	10,000ppm	High Purity Stds	09099814	7/24/9	8-13-09	1/20/11	MS
↓	CALCIUM	B	↓	↓	0914001	↓	↓	↓	↓
↓	MAGNESIUM	C	↓	↓	0909104	↓	↓	↓	↓
↓	POTASSIUM	D	↓	↓	0902312	↓	10-20-9	↓	↓
↓	SODIUM	E	↓	↓	0916903	↓	↓	↓	↓
7/28/9	ARSENIC	MSST-090728A	1000ppm	Ultra Scientific	J01103	7/28/9	8-13-9	12/31/15	MS
↓	MANGANESE	B	10,000ppm	↓	J00797	↓	↓	10/31/15	↓
↓	VANADIUM	C	1000ppm	↓	J01242	↓	↓	01/31/16	↓
10/2/9	MANGANESE	MSST-091002A	10,000ppm	High Purity Stds	0911903	10/2/9	10-28-9	3/11/2011	MS
12/28/9	TELLURIUM	MSST-091228A	1000ppm	High Purity Stds	0931525	12/28/9	1/3/10	6/21/2011	MS
↓	TELLURIUM	↓ B	↓	CPI Int'l	09L129	↓	↓	6/24/2011	MS

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Logbook #1

8 12/8/09

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
1/18/10	Selenium	MSST-100118A	1000 ppm	Ultra Scientific	J00739	1/18/10	1-22-10	9-30-2015	NS
	Barium	B			J01041			12-31-2015	
	Lead	C			K00652			8-31-16	
	Boron	D	10,000 ppm		J01243		1-25-10	1-31-16	
	Potassium	E			J01077		2-18-10	12-31-15	
	Sodium	F			K00911			10-31-16	
1/21/10	Aluminum	MSST-100121A	10,000 ppm	High Purity Stds	0930228	1/21/10	1-25-10	7-14-2011	NS
	Calcium	B			0927502				
	Magnesium	C			0909104				
	Iron	D			1001301				
	Strontium	E	1000ppm		0926711		1-25-10		
	Tin	F			0930609				
	Potassium	G	10,000ppm		0917022		2-18-10		
	Sodium	H			0911811				
3/18/10	Yttrium	MSST-100318A	1000 ppm	High Purity Stds	0915912	3/18/10	3/18/10	9-15-291	NS
4-22-10	Tin	MSST-100422A	1000 ppm	CPI International	09K050	4-22-10	5-19-10	10-20-11	NS
	Titanium	B			08J039				
	Strontium	C			10B149				
4-28-10	Antimony	MSST-100428A	1000 ppm	High Purity Stds	1009601	4-28-10	5-19-10	10-22-11	NS

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ICP Stock Standard Logbook

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
6/21/13	Magnesium	MSST-130621C	10,000 ppm	High Purity Standards	1301003	6/21/13	7/25/13	12/14/14	DDES
7/31/13	Yttrium	MSST-130731A	1000 ppm	High Purity Standards	1305206	7/31/13	8/1/13	1/25/15	AA
7/31/13	Scandium	MSST-130731B	1000 ppm	High Purity Standards	1231735	7/31/13	8/1/13	1/25/15	AA
9/13/13	Boron 1°	MSST-130913A	5000 ppm	High Purity Standards	1221604	9/13/13	9/16/13	3/9/15	AA
↓	Molybdenum 1°	MSST-130913B	1000 ppm	↓	1222707	9/13/13	9/16/13	↓	↓
↓	Chromium 1°	MSST-130913C	1000 ppm	↓	1230012	9/13/13	9/16/13	↓	↓
↓	Aluminum 1°	MSST-130913D	10000 ppm	↓	1318241	9/13/13	~~9/16/13~~ Rec'd 9/17/13	↓	↓
9/13/13	Antimony 2°	MSST-130913E	1000 ppm	ULTRA Scientific	L012826	9/13/13		12/31/17	MI
11/26/13	Aluminum 2°	MSST-131126A	10000 ppm	Ultra Scientific	M002668	11/26/13		4/30/17	AA
12/9/13	Yttrium	MSST-131209A	1000 ppm	High Purity Standards	1222829	12/9/13	3/24/14	~~3/24/14~~ 5/29/15 m	AA
12/9/13	Scandium	MSST-131209B	1000 ppm	High Purity Standards	1309122 AA	12/9/13	3/24/14	~~3/24/14~~ 5/27/15	AA
12/23/13	Calcium 1°	MSST-131223A	10,000 ppm	High Purity Standards	1320711	12/23/13	1/6/14	6/13/15	AH
12/23/13	Magnesium 1°	MSST-131223B	↓	↓	1330907	↓	1/6/14	↓	AH
12/23/13	Manganese 1°	MSST-131223C	↓	↓	1331633	↓	1/6/14	↓	AH
AA 11/10/14	Aluminum 1°	MSST-140110A	10000 ppm	High Purity Standards	1334617	11/10/14	~~7/7/15~~ AA 11/10/14	7/7/15	AA
11/20/14	Nickel 2° AA 11/21/14	MSST-140120A	1000 ppm	~~High Purity Standards~~ Ultra Scientific	M002866	11/20/14		9/30/18	AA
↓	Sodium 2°	MSST-140120B	10000 ppm	AA 11/21/14 ↓	R01257	↓		12/31/20	↓
↓	Beryllium 2°	MSST-140120C	1000 ppm	↓	R00202	↓		4/30/20	↓
1/21/14	Strontium 2°	MSST-140121A	1000 ppm	CPI International	14A095	1/21/14	1/21/14	7/16/2015	MI

Cy 3/25/14

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
1/21/14	Tin 2°	MSST-140121B	1000 ppm	CPI International	1314086	1/21/14	1/21/14	7/16/2015	mi
↓	Titanium 2°	MSST-140121C	1000 ppm	CPI International	126230	1/21/14	1/21/14	7/16/2015	mi
2/18/14	Wave Cal Solution	MSST-140218A	1/20/100 ppm	Perkin Elmer Pure	10-133-YPX1	2/18/14		3/30/2015	mi
	Optima Family Multi-Element Standard	B	1/10/50 ppm		10-134YPX1			6/30/2015	
	Vis Wavecal Solution	C	1/10/50 ppm		10-71YPT1			6/30/2015	
	Instrument Calibration Standard 4	D	50/100 ppm	↓	10-117YPY1			6/30/2015	
↓	Solution - Optimal Blank	E	—	Perkin Elmer Pure Plus	1-76KTX1	↓		6/30/2015	↓
4/4/14	Magnesium 2°	MSST-140404A	10,000 ppm	Ultra Scientific	R00244	4/4/14	4/4/14	4/30/2020	mi
STF 5/28/14 4/5/28/14	Bismuth 1000ppm (1°)	MSST-140528A	1000ppm	High Purity Standards	1404513	5/28/14	5/28/14	11/27/2015	STF
5/28/14	Lithium 1000ppm (1°)	MSST-140528B	1000ppm	↓	1231934	5/28/14	5/28/14	11/27/2015	STF
5/30/14	Calcium (Ca) 1°	MSST-140530A	10000 ppm	High Purity Standards	1404943	5/30/14	6/3/14	11/23/15	STF
	Iron (Fe) 1°	B	10000ppm		1324617		6/16/14	11/23/15	STF
	Magnesium (Mg) 1°	C	10,000ppm		1409813		6/13/14	11/23/15	STF
	Strontium (Sr) 1°	D	1000ppm	↓	1401301	↓	6/13/14	11/23/15	STF
6/3/14	Magnesium (Mg) 2°	MSST-140603A	10,000ppm	Ultra Scientific	R00244	6/3/14	STF 6/13/14	4/30/2020	STF
6/11/14	Copper	MSST-140611A	1000ppm	High Purity Standards	1403501	6/11/14	6/13/14	12-5-15	mc
	Cobalt	B	1000ppm		1303712				
	Barium	C	↓		1323402				
↓	Silver	D	↓	↓	1401302	↓	↓	↓	↓

ICP Stock Standard Logbook

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
6/11/14	Arsenic	MSST-140611E	10000ppm	High Purity Standards	1312102	6/11/14	6/12/14	12-5-15	MC
	Vanadium	F			1308605			12-5-15	MC
	Antimony	G			1302425				
	Nickel	H			1314925				
	Potassium	J	10,000ppm		1407203		6/16/14		
	Sodium	J			1313419		6/16/14	6/13/14	
	Selenium	K	1,000ppm		~~1315~~ 1307213		6/12/14		
	Lead	L			1315823				
	Beryllium	M			1412111				
	Thallium	N			1325905				
	Titanium	O			1401005				
	Zinc	P			1310535				
	Cadmium	Q			1312903				
	Tin	R			1315803		9/19/14		
	Silicon	S	10,000ppm		1411821		6/12/14		
9/19/14	Tin	MSST-140919A	1000 ppm	High Purity Standards	1414148	9/19/14		3-15-16	MI
11/5/15	Magnesium	MSST-151015A	10000 ppm	High Purity Stds	1409813	11/5/15 MI		6-10-16	MI
	Calcium	B	10000ppm		1422607				
	Aluminum	C	10000 ppm		1422323				

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
1/15/15	Strontium 1°	MSST-150185D	1000 ppm	High Purity Stds	1412501	1/15/15	2/10/15	9/10/16	MEJ
↓	Scandium	E	1000 ppm	↓	1414317	↓	1/20/15	↓	↓
↓	Yttrium	F	↓	↓	1423204	↓	1/20/15	↓	↓
1/12/15	Arsenic 2°	MSST-150112A	1000 ppm	Ultra Scientific	R005923	1/12/15		9/30/2020	MEJ
↓	Copper 2°	B	↓	↓	BTH02515	↓		9/30/2021	↓
↓	Antimony 2°	C	↓	↓	RM08187	↓		9/30/2021	↓
↓	Chromium 2°	D	↓	↓	BTH03V5	↓	1/30/15	12/31/2019	↓
↓	Molybdenum 2°	E	↓	↓	RM07695	↓	1/30/15	1/31/2022	↓
↓	Thallium 2°	F	↓	↓	BTH0211 0	↓	1/30/15	7/31/2020	↓
3/9/15	Chromium 1°	MSST-150309A	1000 ppm	High Purity Standards	1320011	3/9/15	3/9/15	9/3/16	MEJ
↓	Molybdenum 1°	B	↓	↓	1420609	↓	↓	↓	↓
↓	Boron 1°	C	5000	↓	1421703	↓	↓	↓	↓
3/10/15	Mercury 1°	MSST-150310A	1000 ppm	High Purity Standards	14343	3/10/15	4/5/15	9/10/16	↓
5/14/15	Cadmium 2°	MSST-150514A	1000 ppm	Ultra Scientific	CL-2608	5/14/15		8/31/21	↓
5/14/15	Zinc 2°	MSST-150514B	1000 ppm	Ultra Scientific	TU0108	5/14/15		2/28/21	↓
5/18/15	Manganese 1°	MSST-150518A	10000 ppm	High Purity Standards	1413613	5/18/15	6/1/15	11/8/16	↓
4/15/15	Barium 2°	MSST-150615A	1000 ppm	Ultra Scientific	CAL-2389	6/15/15	6/16/15	6/30/22	MEJ
↓	Lead 2°	B	↓	↓	CL-4072	↓	↓	11/30/21 6/1/22	↓
↓	Silicon 2°	C	10000	↓	CL-2940	↓	↓	8/31/2021	↓

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
6/15/15	tin 2°	MSST-150615D	1000 ppm	CPI	13H086	6/24/15		12/15/16	mj
	Titanium 2°	↓ E	↓	↓	14K176	↓		↓	↓
7/2/15	Aluminum	MSST-150702A	10000 ppm	High Purity Standards	1516016	7/2/15	11/23/15	12/25/16	HSG
	Calcium	↓ B	↓	↓	1511140	↓	↓	↓	↓
	Magnesium	↓ C	↓	↓	1510445	↓	↓	↓	↓
7/17/15	Strontium 2°	MSST-150717A	1000	CPI	15F052	7/17/15	9/10/15	01/14/17	HSG
9/9/15	Selenium 2°	MSST-150909A	1000ppm	Ultra Scientific	R00180	9/9/15	9/10/15	4/30/20	AA
9/23/15	Scandium primary	MSST-150923A	1000ppm	High Purity Standards	1506438	9/23/15	9/28/15	3/17/17	AM
9/23/15	Yttrium primary	MSST-150923B	1000 ppm	High Purity Standards	1507112	9/23/15	9/28/15	3/17/17	AM
9/28/15	Lead secondary	MSST-150928A	1000 ppm	Ultra Scientific	CM-3389	9/28/15		7/3/22	AM
10/29/15	Calcium	MSST-151029A	10000 ppm	Ultra Scientific	CM-4634	10/29/15 ~~9/30/22~~	11/2/15	9/30/22	Am
10/29/15	Manganese	MSST-151029B	1000 ppm	Ultra Scientific	CM-2432	10/29/15	10/29/15	6/30/22	Am
10/29/15	Thallium	MSST-151029C	1000	Ultra Scientific	CM-1100	10/29/15		4/30/22	Am
11/10/15	Iron	MSST-151102A	1000ppm	High Purity Standards	1524703	11/2/15	11/23/15	4/28/17	Am
11/10/15	Strontium	MSST-151102B	1000 ppm	High Purity Standards	1429002	11/2/15	↓	4/28/17	Am
11/10/15	Bismuth	MSST-151102C	1000 ppm	High Purity Standards	1404513	11/2/15	11/23/15	4/28/17	Am
11/10/15	Lithium	MSST-151102D	1000 ppm	High Purity Standards	1516729	11/2/15	↓	↓	
12/11/15	Titanium	MSST-151207A	1000ppm	High purity standards	1510001	12/7/15	12/15/16	6/1/17	Am
12/11/15	Cadmium	MSST-151207B	1000 ppm	High purity standards	1512903	12/7/15	↓	6/1/17	Am

Date	Stock STD							Exp Date	Initials
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	
12/11/15	Arsenic	MSST-151207C	1000 ppm	High Purity Standards	1500712	12/7/15	12/15/15	6/1/18	AM
	Cobalt	MSST-151207D	1000 ppm		14252115	12/7/15		6/1/18	
	Zinc	MSST-151207E			1403401			6/1/17	
	Beryllium	MSST-151207F			1412111				
	Nickel	MSST-151207G			1512402				
	Barium	MSST-151207H			14315107				
	Antimony	-151207J			1520412				
	Copper	-151207J			1403501				
	Selenium	151207K			1427632				
	Silver	151207L			~~1527709~~ 1527902 AM 12/8/15				
	Tin	151207M			1516806				
	Lead	151207N			1513919				
	Vanadium	151207O			1420604				
	Thallium	151207P			1523215				
	Silicon	151208Q			1528501				
	Potassium	151207R	10000 ppm		1512614				
	Sodium	151207S			1526616				
	Aluminum	151207T			1526032				
	Calcium	151207U			1527523				

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Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
12/11/15	Magnesium	MSST-151207V	10000 ppm	High Purity Standards	1510445	12/7/15	12/15/15	6/1/17	AM
11/29/16	Boron (2°)	MSST-160129A	1000 ppm	~~Ultra Scientific~~ High Purity Standards	K009249A	1/29/16	2/1/16	12/31/21	MM
↓	Vanadium (2°)	MSST-160129B	1000 ppm	Ultra Scientific	CM-5443	1/29/16	2/1/16 ~~11/30/22~~ MM 2/1/16	11/30/22	MM
3/23/16	Boron (1°)	MSST-160323A	5000 ppm	High Purity Standards	1524618	3/23/16		9/14/17	MM
↓	Scandium (1°)	B	1000 ppm	↓	1604311	↓	3/23/16	↓	↓
↓	Yttrium (1°)	C	↓	↓	1524022	↓	↓	↓	↓
4/20/16	Calcium (1°)	MSST-160420A	10000 ppm	High Purity Standards	1606907	4/20/16		10/18/17	MM
↓	Magnesium (1°)	B	↓	↓	1591412	↓	↓	↓	↓
↓	Aluminum (1°)	C	↓	↓	1605734	↓	↓	↓	↓
↓	Cadmium (1°)	D	1000 ppm	↓	1582227	↓	↓	↓	↓
↓	Boron (1°)	E	5000 ppm	↓	1524618	↓	↓	↓	↓
4/25/16	Magnesium (2°)	MSST-160425A	10000 ppm	Ultra Scientific	CM-4445	4/25/16		7/30/22	MM
↓	Chromium (2°)	B	1000 ppm	↓	R01377	4/25/16		1/31/21	↓

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)	
9/7/15	~~2MWW~~ 500 ppb Hg 2°	2MWST-150907B	2MSST-140113A	1000 ppm	0.05 mL	1
IM 9/7/15 10/8/15	m: 9/7/15 500 ppb Hg 1°	2MWST-150907A	2MSST-140310A	1000 ppm	0.05 mL	
↓	500 ppb Hg 2°	↓ B	2MSST-140113A	1000 ppm	0.05 mL	
9/7/15	Mix Internal Standard A	2MWST-150907C	2MSST-150907A	10 ppm	500 mL	
	↓	↓	2MSST-150907B	1000 ppm	5 mL	5
	2000 mL ↑ 50 ppb IS	2MWST-150907D	2MWST-150907C	10 ppm	125 mL	
	~~LCS~~ 2 ICV/LCS/MS/MSD Solution B	2MWST-150907E	MSST-150917A(Sr)	1000 ppm	10 mL	
	m: 10/8/15		MSST-150626D(Sn)			
			↓ E (Sn) 10/8/15	↓	↓	
	↓	↓	MSST-100118D(B)	10,000 ppm		10
	LLCCV/LLICV Solution B	2MWST-150907F	MSST-150717A (Sr)	1000 ppm	1 mL	
			MSST-150626D (Sn)			
			↓ E (Ti)	↓	↓	
	↓	↓	MSST-100118D(B)	10000 ppm	5 mL	
m: 10/8/15	~~200/2000 ppb ICAV~~	~~2MWST-150907G~~	~~2MSST-140630A / 2MSST-141025A~~	~~10/50 ppm~~	~~10/100 mL~~	15
	ICAV (Sr Sn Ti Sr B)	2MWST-150907G	MSST-140611D(Sr) m: 10/8/15	10000 ppm	10 mL	
			MSST-140911A(Sn)	1000 ppm		
			MSST-140611D (Ti)	↓		
			MSST-150105D(Sr)	1000 ppm	↓	
↓	↓	~~MSST-150907C~~ m: 10/8/15	MSST-150309C(B)	5000 ppm	20 mL	20

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
100 ml	500 ppb	2% HNO3 4% HCl	JT Baker	11532/97262	10/7/15 ml 9/7/15	3/31/19		MI
100 ml	500 ppb	2% HNO3 4% HCl	JT Baker	11532/97262	11/8/15	9/10/16		MI
100 ml	500 ppb	2% HNO3 4% HCl	↓	↓	11/8/15	3/31/19		↓
500 ml	~ 10 ppm				9/7/16	9/7/16		MEI
↓	↓				↓	1/7/17		
2500	50 ppb	1% HNO3 0.5% HCl	Omnitrace	55148/54028	9/7/16	9/7/16		
1000	10/100 ppm	2.5% HNO3		55148	1/31/16	1/14/17		
						12/15/16		
						↓		
↓	↓	↓		↓	↓	1/31/16		
1000 ml	1 ppm	2.5% HNO3		55148	1/31/16	1/14/17 ~~10/15/16~~ MI 10/8/15		
						12/15/16		
	↓					↓		
↓	50 ppm	↓		↓	↓	1/31/16		
~~500 ml~~	~~200/2000 ppb~~	~~1% HNO3; 0.5% HCl~~		~~55148/54028~~		~~4/2016; 11/1/15~~		
1000 ml	100 ppm	2.5% HNO3		55148	12/4/15	12/5/15		
	0 ppm					3/15/16		
						12/5/15		
	↓					6/10/16		
	100 ppm	↓	↓	↓	↓	9/3/16		↓

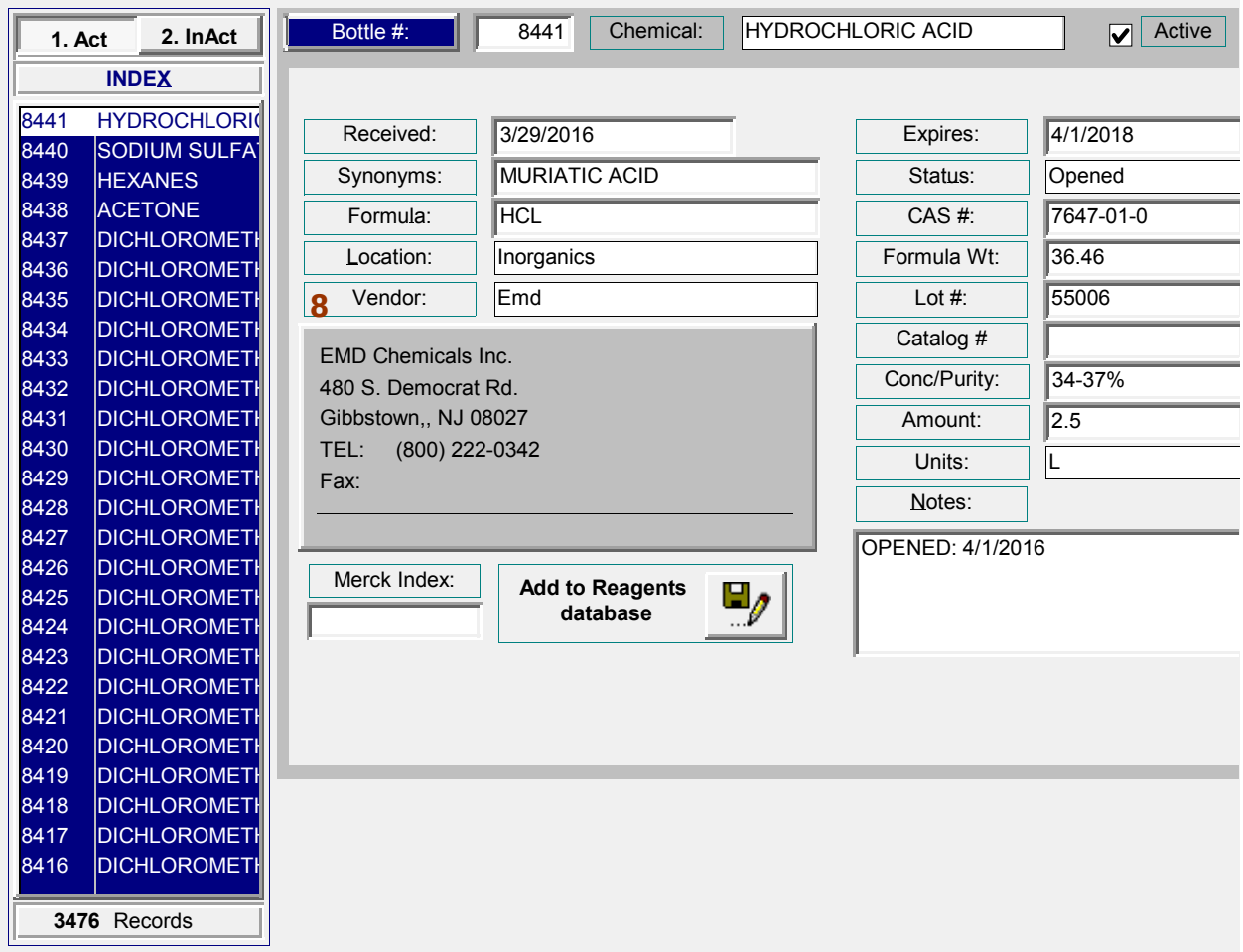
* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
9/7/15	200/2000 ppb ICAL	2MWST-150907H	2MSST-140630A / 2MSST-141025A	50/10 ppm	20/10 ml
			2MWST-150907G	10/100	10
			2MWST-150907C mi 10/8/15	10	2.5
	ICV (10/100 ppb) mi 10/8/15	2MWST-150907I	2MWST-150601D/F	1/10/100 ppm	5 ml
			2MWST-150907E		
			2MWST-150907C	10 ppm	2.5 ml
	LLICV/LLCCV Working Solution	2MWST-150907J	2MWST-150601H	0.1/0.5/1.0/10 ppm	0.5 ml
			2MWST-150907F	1/10 ppm	
			2MWST-150907C	10 ppm	2.5 ml
	ICSA (100 ppm NaKCaMg)	2MWST-150907K	2MWST-150105A/B (CaMg)	10000 ppm	5.0 ml
			2MWST-140611I/J (NaK)		
			2MWST-150907C	10 ppm	2.5 ml
	ICSAB (100 ppm NaKCaMg) + (20/ppb target analytes) 200	2MWST-150907L	2MWST-150105A/B (CaMg)	10000 ppm	5.0 ml
			2MWST-140611I/J (NaK)		
			2MWST-150907C	10 ppm	2.5 ml
			2MSST-141025A		1 ml
			2MWST-150907G ~~2MSST-140630A~~ mi 10/8/15	10/100 ppm ~~50 ppm~~ mi 10/8/15	1 ml
10/19/15	ICV/LCS/MS/MSD Solution D	2MWST-151019A	2MSST-151019A	1000 ppm	1 ml
	LLICV/LLCCV Solution A	2MWST-151019B	2MSST-140611E (As)	1000 ppm	0.10 ml
			mi 10/19/15 M (Be)		0.50 ml

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
500 ml	200/2000 ppb	1.0% HNO3 0.5% HCl	Omnitrace	55148/54028	11/1/15	4/2016; 11/1/15		MEI
↓	↓	↓	↓	↓	↓	12/5/15		↓
↓	50 ppb	↓	↓	↓	↓	9/7/16		↓
500 ml	10/100 ppb	1% HNO3 0.5% HCl	↓	55148/54028	11/23/15	11/23/15; 12/1/15		↓
↓	↓	↓	↓	↓	↓	1/31/16		↓
↓	50 ppb	↓	↓	↓	↓	~~12~~ 9/7/16		↓
500 ml	0.1/0.5/1.0/10 ppb	↓	↓	↓	11/23/15	ml 10/8/15 11/23/15		↓
↓	1/50 ppb	↓	↓	↓	↓	1/31/16		↓
↓	50 ppb	↓	↓	↓	↓	9/7/16		↓
500 ml	100 ppm	↓	↓	↓	12/5/15	6/10/16		↓
↓	↓	↓	↓	↓	↓	12/5/15		↓
↓	50 ppb	↓	↓	↓	↓	9/7/16		↓
500 ml	100 ppm	↓	↓	↓	11/1/15	6/10/16		↓
↓	~~50~~ ml 10/8/15	↓	↓	↓	↓	12/5/15		↓
↓	50 ppb	↓	↓	↓	↓	9/7/16		↓
↓	20 ppb	↓	↓	↓	↓	11/1/15 ~~12/5/15~~		↓
↓	20/200 ppb	↓	↓	↓	↓	ml 10/8/15 ~~11/1/15~~ 12/5/15		↓
1000 ml	1000 ppb	1% HNO3 0.5% HCl	Omnitrace	55148/54028	4/19/16	4/16/17 ~~12/5/15~~ ml 10/19/15		MEI
1000 mL	0.1 ppm	2.5% HNO3	↓	55148	11/23/15	12/5/15		↓
	0.5 ↓	↓	↓	↓	↓	↓		↓

* Working std expiration date must not exceed the manufacturer's expiration date.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8417 DICHLOROMETH
8416 DICHLOROMETH
3476 Records
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Received:
3/29/2016
Synonyms:
MURIATIC ACID
Formula:
HCL
Location:
Inorganics
8
Vendor:
Emd
EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown,, NJ 08027
TEL: (800) 222-0342
Fax:
Merck Index:
Add to Reagents database
Expires:
4/1/2018
Status:
Opened
CAS #:
7647-01-0
Formula Wt:
36.46
Lot #:
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Catalog #
Conc/Purity:
34-37%
Amount:
2.5
Units:
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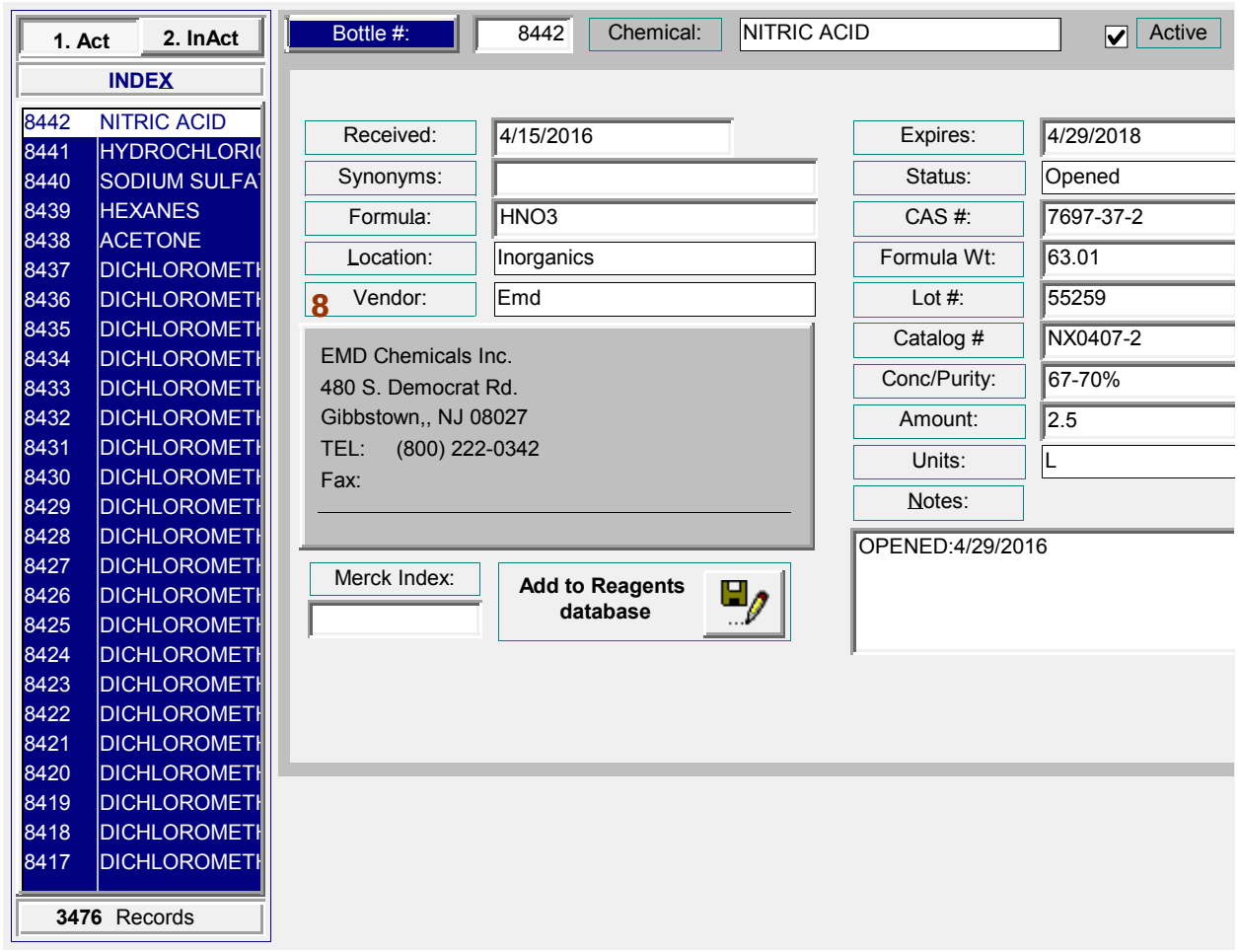
OPENED: 4/1/2016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4/15/2016
Synonyms:
Formula:
HNO3
Location:
Inorganics
8
Vendor:
Emd
EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown,, NJ 08027
TEL: (800) 222-0342
Fax:
Merck Index:
Add to Reagents database
Expires:
4/29/2018
Status:
Opened
CAS #:
7697-37-2
Formula Wt:
63.01
Lot #:
55259
Catalog #
NX0407-2
Conc/Purity:
67-70%
Amount:
2.5
Units:
L
Notes:
OPENED:4/29/2016

Date	STD Name	Working STD Code	STOCK INFORMATION Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/23/15	LLICV / LLCCV Solution A	2MWST-151123C	MSST-140611H~~D~~ (Ni) mi 11/23/15	1000 ppm	1.0 ml
			A (Cu)		
			C (Ba)		
			L (Pb)		
			2MSST-151019A (Cu)		0.5 ml
			~~2~~MSST-150518A (Mn) mi 11/23/15	10000 ppm	0.05 ml
			MSST-140611F (V)	1000 ppm	1.0 ml
			MSST-151102A (Fe)	10000 ppm	
			MSST-140611P (Zn)	1000 ppm	10 ml
			MSST-150105C (Al)	10000 ppm	1.0 ml
	ICV (10/100 ppb)	2MWST-151123D	2MWST-151123A/B	1/10/100 ppm	5 ml
			2MWST-150907G		
			2M~~WST~~SST-151019A mi 11/23/15	~~1000~~ ppm mi 11/23/15	
			2MWST-150907C	~~100~~ ppm	2.5 ml
	LLICV / LLCCV Working Solution	2MWST-151123E	2MWST-151123C	0.1/0.5/1.0/10/50 ppm	0.5 ml
			2MWST-150907F		
			2MWST-150907C	10 ppm	2.5 ml
12/5/15	ICAV (Si Sn Ti Sr B)	2MWST-151207A mi 12/5/15	MSST-151207Q (Si)	10000 ppm	10 ml
			MSST-151207M (Sn)	100 ~~0~~ ppm mi 12/5/15	
			~~MSST~~ MSST-151207A (Sr Ti) mi 12/5/15		

	PREPARATION INFORMATION								
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
			Solvent	Supplier	Lot #	Working STD	Manufacturer		
1	100 ml	1.0 ppm	2.5% HNO3	Omnitrace	55148	n/a/15	12/5/15		MMT
5		0.5 ppm					4/14/17		
		1.0 ppm							
		4 ppm					4/28/17		
10							4/10/16		
	500 ml	10/100 ppb	1.0% HNO3; 0.5% HCl	Omnitrace	55148, 57026	n/a/15	n/a/15;		MMT
							n/a/15		
							4/14/17		
		50 ppb					9/7/16		
15	500 ml	1, 0.5, 1.0, 50 ppb				n/a/15	n/a/15		
							11/31/16		
		50 ppb					9/7/16		
	100 ml	100 ppm	2.5 mL HNO3	Omnitrace	55-148	4/5/16	4/1/17		MMT
		10 ppm					4/1/17		
20							4/1/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
12/8/15	ICAL (Si Sn Ti Sr B)	2MWST-151207A	MSST-151102A (Sr)	1000 ppm	10 mL
12/8/15	↓	↓ 12/8/15	MSST-150307C (B)	5000 ppm	205 mL
	ICV/LCS/MS/MSL Solution A	2MWST-151207B	MSST-151207B (Cd)	1000 ppm	1.0 mL
			C (As)		
			D (Co)		
			E (Zn)		
			F (Be)		
			G (Ni)		
			H (Ba)		
			I (Sb)		
			J (Cu)		
			K (Se)		
			Kp (Tl)		
			M1 12/8/15 MN (Al)		
			M1 12/8/15 O (V)		
			MSST-150307B (Mo)		
			A (Cr)		
			MSST-150518A (Mn)	10000 ppm	
			MSST-151207R (K)		
			S (Na)		

	PREPARATION INFORMATION								
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
			Solvent	Supplier	Lot #	Working STD	Manufacturer		
1	1000 mL	10 ppm	2% HNO_3	Omnitrace	55148	6/5/16	4/28/17		DTH
	↓	100ppm	↓	↓	↓	↓	9/3/16		
	100 mL	1/10 ppm	2.5% HNO_3	Omnitrace	55148	6/5/16	6/1/17		
5									
10									
15							↓		
							9/3/16		
							↓		
							11/2/16		
							6/1/17		
20	↓	↓	↓	↓	↓	↓	↓		↓

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
12/7/15	ICV/LCS/MS/MSD Solution A	2MWST ~~2MSST~~ - 151207 ~~A~~ B	MSST - 151207T (Al)	10000 ppm	1.0 ml
12/8/15		12/8/15	U (Ca)		
			X (Mg)		
			MSST - 151102 A (Fe)		
	ICV/LCS/MS/MSD Solution B	2MWST - 151207 ~~B~~ C	MSST - 150717A (Sr)	1000 ppm	10 ml
		12/8/15	MSST - 150615D (Sb)		
			E (Si)		
			MSST - 100118 D (B)	10000 ppm	
			MSST - 150615C (Si)		
	ICV/LCS/MS/MSD Solution C	2MWST - 151207 ~~C~~ D	MSST - 151207L (Ag)	1000 ppm	1.0 ml
	ICV/LCS/MS/MSD Solution D	2MWST - 151207 ~~D~~ E	2MSST - 151019A (Cu)	1000 ppm	
	LLICV/LLCCV Solution A	2MWST - 151207 ~~E~~ F	MSST - 151207 C (As)	1000 ppm	0.10 ml
			F (Be)		0.50 ml
			D (Co)		
			K (Se)		
			MSST - 150709 B (Mo)		
			L (Ag)		
			B (Cd)		
			I (Sb)		
			P (Tl)		

PREPARATION INFORMATION								
Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
		Solvent	Supplier	Lot #	Working STD	Manufacturer		
1000 mL	1/10 ppm	2.5% HNO3	Omnitrace	55148	6/5/16	6/1/17		MET
						4/28/17		
1000 mL	10/100 ppm				1/31/16 ~~6/5/16~~ mi 12/5/15	1/14/17		
						12/15/16		
						12/15/16 ~~1/31/16~~		
						1/31/16 ~~8/31/21~~ mi 12/5/15		
						8/31/21		
1000 mL	1 ppm				6/5/16	6/1/17		
					6/5/16	4/16/17		
1000 mL	0.1 ppm				6/5/16	6/1/17		
	0.5 ppm							
						9/3/16		

* Working std expiration date must not exceed the manufacturer's expiration date.

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59 of 101

Logbook #2
ICPMS &Hg WK Std Log 957

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)	
12/7/15	LLICV / LLCCV Solution A	2MWST-151207F	MSST-150307A (Cr)	1000 ppm	1.0 mL	1
~12/9/15		~12/9/15	MSST-151207G (Ni)			
			J (Cu)			
			H (Ba)			
			N (Pb)			5
			2MSST-151019A (Cu)		0.5	
			MSST-150518A (Mn)	1000 ppm	0.05	
			MSST-151207O (V)	1000 ppm	1.0	
			MSST-151102A (Fe)	10000 ppm	1.0	
			MSST-151207E (Zn)	1000 ppm	10	10
			MSST-151207T (Al)	10000 ppm	1.0	
	LLCV / LLCCV Solution B	2MWST-151207G	MSST-150717A (Cr)	1000 ppm	1.0 mL	
		~12/9/15	MSST-150615D (Co)			
			E (Ni)			
			MSST-100118D (B)	10000 ppm	1.0 mL	15
			MSST-150615C (Cd)			
	ICAh (200/2000 ppb)	2MWST-151207H	2MSST-140603A / 2MSST-141624A	50/10 ppm	20/10 mL	
		~12/9/15	2MWST-151207A	10/100 ppm	10 mL	
			2MWST-150910C	10 ppm	2.5 mL	
	ICV (10/100 ppb)	2MWST-151207I	2MWST-151207B/C/D/E	1/10/100 ppm	5 mL	20
		~12/9/15	~12/9/15			

	PREPARATION INFORMATION								
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
			Solvent	Supplier	Lot #	Working STD	Manufacturer		
1	100 ml	1.0 ppm	2.5% HNO_3	Omnitrace	55148	6/5/16	9/1/17		MCT
5		↓					↓		
		0.5 ppm					9/16/17		
		↓					11/3/16		
		1.0 ppm					6/1/17		
		10 ppm					9/28/17		
10		↓					6/1/17		
	↓	↓				↓	↓		
	100 ml	1 ppm				1/31/16	1/14/17		
		↓				↓	12/15/16		
		↓					↓		
15		50 ppb					1/31/16		
	↓	1 ppm	↓		↓	↓	8/31/21		
	100 ml	200/2000 ppb	1.0% HNO_3; 0.5% HCl		55142; 174028	3/20/16	9/20/16; 3/20/16		
	↓	↓	↓		↓	↓	9/6/16		
	↓	50 ppb	↓		↓	↓	9/7/16		
20	50 ml	10/100 ppb	↓	↓	↓	1/31/16	6/5/16; 1/31/16		↓

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION		
			Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
12/5/15	ICV (10/100 ppb)	2MWST-IS1207L	2MSST-IS0907C	10 ppm	2.5 mL
~12/5/17	ICV ICCV Working Solution	2MWST-IS1207L	2MWST-IS1207L F/G ~12/5/15	0.1/0.5/1.0/10/50 ppm	0.5 mL
	↓	↓	2MWST-IS1209070	10 ppm	2.5
	ICSA (100 ppm KNaCaMg)	2MWST-IS1207K ~12/5/15	MSST-IS1207R/S/T/U/V ~12/5/15	10000 ppm	5.0 mL
	↓	↓	2MWST-IS0907C	10 ppm	2.5 mL
	ICSAB (100 ppm KNaCaMg)	2MWST-IS1207L ~12/5/15	MSST-IS1207R/S/U/V	10000 ppm	5.0 mL
	+ 20/200 ppb target analytes	↓	2MSST-14102SA	10 ppm	1.0 mL
	↓	↓	2MWST-IS0907C	10 ppm	2.5 mL
↓	↓	↓	2MWST-IS1207A	10/100 ppm	1.0 mL
12/5/15	500 ppb Hg (1°)	2MWST-IS1208A	2MSST-IS0310A ~12/5/15	100 ppm	0.25 mL
	500 ppb Hg (2°)	↓ B	2MSST-IS4011BA	↓	↓

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
500 ml	50 ppb	1% HNO_3 ; 0.5% HCl	omnitrace	55148 ; 54028	1/31/16	9/7/16		MEJ
500 ml	0.1/0.5/1/10 50 ppb	↓	↓	↓	1/31/16	6/5/16 ; 1/31/16		↓
↓	50 ppb	↓	↓	↓	↓	9/7/16		↓
500 ml	100 ppm	↓	↓	↓	6/5/16	6/1/17		↓
↓	50 ppb	↓	↓	↓	↓	9/7/16		↓
500 ml	100 ppm	↓	↓	↓	3/20/16 ~~5/5/16~~ m1 12/5/16	6/1/17		↓
↓	20/200 ppb	↓	↓	↓	↓	3/20/16		↓
↓	50 ppb	↓	↓	↓	↓	9/7/16		↓
↓	20/200 ppb	↓	↓	↓	↓	6/5/16		↓
100 ml	500 ppb	2% HNO_3 4% HCl	JT Baker	11532/97262	1/8/16	9/10/16		MEJ
↓	↓	↓	↓	↓	1/8/16	3/31/19		↓

* Working std expiration date must not exceed the manufacturer's expiration date.

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63 of 101

Logbook #2
ICPMS &Hg WK Std Log

961

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
2/1/2016	ICV/LCS/MS/MSD Solution B	2MWST-160201A (Sr)	MSST-151102B	1000 ppm	10 ml
		(Sn)	MSST-151207 ~~A~~ M MET 2/1/16	↓	
		(Si)	MSST-151207 Q MET 2/1/16	10000 ppm	
		(Ti)	MSST-151207A	1000 ppm	
		(B)	MSST-~~150309C~~ 160129A MET 2/1/16	10000 ppm	
	LLICV/LLCCV Solution B	2MWST-160201B	MSST-151102B (Sr)	1000 ppm	1 ml
			MSST-151207M (Sn)		
			MSST-151207Q (Ti)		
			MSST-151207Q (Si)	10000 ppm	5 ml
			MSST-160129A (B)		
	ICV (10/100 ppb)	2MWST-160201C	2MWST-151207B	1/10 ppm	10 ml
			2MWST-151207D	1 ppm	
			2MWST-151207E	1 ppm	
			2MWST-160201A	10/100 ppm	
			2MWST-150907C	10 ppm	5.0 ml
	LLICV/LLCCV Working Solution	2MWST-160201D	2MWST-151207F	0.1/0.0/1.0/10 ppm	1 ml
			2MWST-160201B	1/50 ppm	
			2MWST-150907C	10 ppm	5.0 ml
4/1/2016	MIX internal Standard A	2MWST-160401A	~~2MWST~~ MSST-151207A MET 4/1/16	10 ppm	500 ml
			2MSST-150907B	1000 ppm	5 ml

	PREPARATION INFORMATION									
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
			Solvent	Supplier	Lot #	Working STD	Manufacturer		
1	1000 ml	10/100 ppm	2.5% HNO_3	Omnitrace	55148	8/1/16	4/28/17		MET
							6/1/17		
							6/1/17		
							6/1/17		
5							12/31/21		
	1000 ml	1 ppm				8/1/16	4/28/17		MET
							6/1/17		
							6/1/17		
		1 ppm					6/1/17		
10		50 ppm					12/31/21		
	1000 ml	10/100 ppb	1.0 HNO_3; 0.5% HCl		55148; 1470	6/5/16	6/5/16		MET
							6/5/16		
							6/5/16		
		10/100 ppb					8/1/16		
15		50 ppb					9/7/16		
	1000 ml	0.1/0.5/1.0/ 10/50 ppb				6/5/16	6/5/16		MET
							8/1/16		
		50 ppb					9/7/16		
	500 ml	~ 10 ppm				12/1/16	12/1/16		MET
20							1/7/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
4/1/2016	50 ppb IS in 2000 ml HW	2MWST-160401B	2MWST-160401A	10 ppm	12.5 ml
	ICAL (200/2000 ppb)	2MWST-160401C	2MSST-151207C	50 ppm	40/20 ml
			2MSST-151207D	10 ppm	
			2MWST-151207A	10/100 ppm	20 ml
			2MWST-160401BA	10 ppm	5 ml
	ICSA (100 ppm CaMgNaK)	2MWST-160401D	MSST-151207U (Ca)	10000 ppm	10 ml
			MSST-151207V (Mg)		
			MSST-151207S (Na)		
			MSST-151207R (K)		
			2MWST-160401A (IS)	10 ppm	5 ml
	ICSAB (100 ppm CaMgNaK +	2MWST-160401E	MSST-151207U (Ca)	10000 ppm	10 ml
	20/200 ppb Target Analytes)	2MWST-160401E	MSST-151207V (Mg)		
			MSST-151207S (Na)		
			MSST-151207R (K)		
			2MWST-160401A (IS)	10 ppm	5 ml
			2MSST-151207D	10 ppm	2 ml
			2MWST-151207A	10/100 ppm	

	PREPARATION INFORMATION						Exp Date *		Comments	Initial
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent	Supplier	Lot #		Working STD	Manufacturer		
1	2500 ml	50 ppb	1% HNO_3 / 0.5% HCl	Omni Trace	55748	55006	12/1/16	12/1/16		MCT
	1000 ml	200 / 2000 ppb				m 4/1/16	6/5/16	1/2017		
								7/2017		
								6/5/16		
5		50 ppb						12/1/16		
	1000 ml	100 ppm	1% HNO_3 / 0.5% HCl				10/1/16	6/1/17		
								6/1/17		
								6/1/17		
								6/1/17		
10		50 ppb						12/1/16		
		m 4/1/16					6/5/16	6/1/17		
	1000 ml	100 ppm						6/1/17		
								6/1/17		
								6/1/17		
								12/1/16		
15		50 ppb						7/2017		
		20 / 200 ppb						6/5/16		
20										

* Working std expiration date must not exceed the manufacturer's expiration date.

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Laboratory Report

ASSET Laboratories

Project #: N19652

APPL SDG: 79769

APPL, Inc.

Number of pages in report: _____

Data Validation Package

for

ARF 79769

TABLE OF CONTENTS

LABORATORY NAME: *APPL, Inc.*

Case Narrative	3
ARF, COC, CRF, client communications	8
Metals Analysis	16
QC Summary	17
Sample Data	20
Calibration Data	35
Raw Data	69
Inorganic Analysis	88
QC Summary	89
Sample Data	93
Calibration Data	112
Raw Data	138

CASE NARRATIVE

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Case Narrative

ARF: 79769

Project: N19652

State Certification Number: CA1312 (DW, WW & HW)

NELAP Certification number: CA00046 (HW)

Arizona Certification Number: AZ0474

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sample Receipt Information:

Nine water samples were received on May 6, 2016, at 2.5°C. The sample group was assigned Analytical Request Form (ARF) number 79769. The sample numbers and requested analyses were compared to the chain of custody and email communication. Analyses requested were revised, as requested. No other exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
N019652-001/ MW-55-045-EB-Q216	AZ35060	WATER	05/05/16	05/06/16
N019652-002/ MW-55-045-Q216	AZ35061	WATER	05/05/16	05/06/16
N019652-003/ MW-55-120-Q216	AZ35062	WATER	05/05/16	05/06/16
N019652-004/ MW-55-120-EB-Q216	AZ35063	WATER	05/05/16	05/06/16
N019652-005/ MW-56D-Q216	AZ35064	WATER	05/05/16	05/06/16
N019652-006/ MW-56M-Q216	AZ35065	WATER	05/05/16	05/06/16
N019652-007/ MW-56S-Q216	AZ35066	WATER	05/05/16	05/06/16
N019652-008/ MW-721-Q216	AZ35067	WATER	05/05/16	05/06/16
N019652-009/ MW-722-Q216	AZ35068	WATER	05/05/16	05/06/16

EPA Method 6020A
Metals

Sample Preparation Information

The water samples were digested according to EPA method 3015. No exception was encountered. All holding times were met.

Analysis Information:

Samples:

The samples were analyzed for dissolved chromium according to EPA method 6020A using an Agilent 7700X ICP-MS.

Calibrations:

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All calibration acceptance criteria were met.

Blanks:

No target metal was detected at or above one-half the PQL in the method blank.

Spikes:

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met in the LCS.

No sample was designated by the client for MS/MSD analysis.

Internal Standards:

All method acceptance criteria were met for the internal standards.

Summary:

No analytical exception is noted. All data are acceptable.

Inorganic Analysis
EPA Method 218.7

Sample Preparation Information:

The water samples were prepared according to EPA method 218.7.

Analysis Information:

Samples:

The samples were analyzed according to EPA method 218.7 using a Dionex IC5000 ion chromatograph.

Calibrations:

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard.

Blanks:

No target compound was detected at or above one-half the PQL in the method blanks.

Spikes:

Laboratory Control Spikes(LCS) were for quality assurance. All LCS acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis.

Summary:

No other analytical exception is noted. All data are acceptable.

CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

for PM 5-24-16

Paula McCartney, Laboratory Director / Date

CHAIN OF CUSTODY, ARF, CRF, AND CLIENT COMMUNICATION

APPL - Analysis Request Form 79769

Client: ASSET Laboratories
Address: 3151-3153 W. Post Rd.
Las Vegas, NV 89118
Attn: Marlon Cartin
Phone: 702-307-2659 Fax: 702-307-2691
Job: N19652
PO #: N19652A
Chain of Custody (Y/N): Y # 050516
RAD Screen (Y/N): Y pH (Y/N): Y
Turn Around Type: 14 DAYS

Received by: YL
Date Received: 05/06/16 Time: 09:15
Delivered by: GSO
Shuttle Custody Seals (Y/N): N Time Zone: -7
Chest Temp(s): 2.5°C
Color: A-Grn,R-OrgYell
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Cynthia Clark
QC Report Type: DVP4/EDD/AZ
Due Date: 05/20/16

Comments:
std TAT is 2 weeks, no later than 3 weeks

email report to marlon@, reports.lv@assetlaboratories.com;
EDD: excel to marlon@assetlaboratories.com;
Use AZ certified methods

Sample Distribution:
Metals: 7-$62A14WD(Cr)
Wetlab: 9-$2187
Other: 7-_M3015F

Charges:

Invoice To:
ATL/ASSET
edrom@assetlaboratories.com

	Client ID	APPL ID	Sampled	Analyses Requested
1.	N019652-001/ MW-55-045-EB-Q216	AZ35060W	05/05/16 07:50	$2187, $62A14WD(Cr)
2.	N019652-002/ MW-55-045-Q216	AZ35061W	05/05/16 08:21	$2187, $62A14WD(Cr)
3.	N019652-003/ MW-55-120-Q216	AZ35062W	05/05/16 08:14	$2187, $62A14WD(Cr)
4.	N019652-004/ MW-55-120-EB-Q216	AZ35063W	05/05/16 07:30	$2187, $62A14WD(Cr)
5.	N019652-005/ MW-56D-Q216	AZ35064W	05/05/16 10:02	$2187, $62A14WD(Cr)
6.	N019652-006/ MW-56M-Q216	AZ35065W	05/05/16 09:54	$2187, $62A14WD(Cr)

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -7 UTC
Page 1 Client Code: ADVTL *Printed 05/09/16 11:42:29 AM* Computer: BLADE-01 **# 79769**

7.	N019652-007/ MW-56S-Q216	AZ35066W	05/05/16	10:52	$2187, $62A14WD(Cr)
8.	N019652-008/ MW-721-Q216	AZ35067W	05/05/16	07:35	$2187
9.	N019652-009/ MW-722-Q216	AZ35068W	05/05/16	07:55	$2187

Cynthia Clark

From: Marlon B. Cartin <marlon@assetlaboratories.com>
Sent: Monday, May 09, 2016 11:23 AM
To: 'Cynthia Clark'
Subject: RE: login APPL ARF 79769 - N19652 (with question)

I think that's equivalent method. So that's fine.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | **F:** 702.307.2691 | **M:** 702.439.0421

From: Cynthia Clark [mailto:cclark@applinc.com]
Sent: Monday, May 09, 2016 11:22 AM
To: 'Marlon B. Cartin'
Subject: RE: login APPL ARF 79769 - N19652 (with question)

We do not run Cr6 by the SM3500 method. Right now I have all samples logged in for Cr6 by EPA 218.7.
Is that OK?
I will remove the analyte Boron from the two samples that were logged in that way.

Sincerely,

Cynthia Clark
Project Manager

Agriculture & Priority Pollutants Laboratories, Inc.
WOSB. NELAP Accredited.

t. 559.275-2175 f. 559.275-4422
a. 908 N. Temperance Ave., Clovis, CA 93611

Website • Email

DoD accredited for ISM, Dioxins and PCB congeners.

This is a PRIVATE and CONFIDENTIAL message. If you are not the intended recipient, please delete without copying and kindly advise us by e-mail of the mistake in delivery. NOTE: Regardless of content, this e-mail shall not operate to bind APPL, Inc. to any order or other contract unless pursuant to explicit written agreement or government initiative expressly permitting the use of e-mail for such purpose.

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Monday, May 09, 2016 11:18 AM
To: 'Cynthia Clark'
Subject: RE: login APPL ARF 79769 - N19652 (with question)

Hi Cynthia,

Not sure but I think the that is the method number SM4500Cr-B.
I think we only need Dissolved Cr and Cr+6.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | **F:** 702.307.2691 | **M:** 702.439.0421

From: Cynthia Clark [mailto:cclark@applinc.com]
Sent: Monday, May 09, 2016 10:33 AM
To: Marlon B. Cartin
Subject: login APPL ARF 79769 - N19652 (with question)
Importance: High

Hi Marlon,
2 of the attached samples request "SM3500-Cr B". For now we have interpreted that as a request for both dissolved Chromium and dissolved Boron. Please let me know if you are requesting something different.

here are our RLS/MDLs for Boron
RL: 10ug/L
MDL: 5ug/L
Table A-2 QAPP RL: 50 ug/L
Table A-2 most stringent screening level: ?

Sincerely,

Cynthia Clark
Project Manager



APPL Sample Receipt Form

ARF# **79769**

Sample	Container Type	Count	p
AZ35060	[6] PL 500mL - HNO3	1	1.7
	[26] Other	1	NA
AZ35061	[6] PL 500mL - HNO3	1	1.7
	[26] Other	2	NA
AZ35062	[6] PL 500mL - HNO3	1	1.7
	[26] Other	2	NA
AZ35063	[6] PL 500mL - HNO3	1	1.7
	[26] Other	1	NA
AZ35064	[6] PL 500mL - HNO3	1	1.7
	[26] Other	1	NA
AZ35065	[6] PL 500mL - HNO3	1	1.7
	[26] Other	1	NA
AZ35066	[6] PL 500mL - HNO3	1	1.7
	[26] Other	1	NA
AZ35067	[26] Other	1	NA
AZ35068	[26] Other	1	NA

Sample	Container Type	Count	p

79769 2.5°

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

APPL, Inc.
908 N. Temperance Ave.
Clovis, CA 93611

TEL: (559) 275-2175
FAX: (209) 275-4422
Acct #:

Field Sampler: Signed

05-May-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests EPA 218.6	EPA 6020	SM 3500-Cr B
N019652-001A / MW-55-045-EB-Q216	Groundwater	5/5/2016 7:50:00 AM	8OZP	1		
N019652-001B / MW-55-045-EB-Q216	Groundwater	5/5/2016 7:50:00 AM	16OZP		1	
N019652-002A / MW-55-045-Q216	Groundwater	5/5/2016 8:21:00 AM	8OZP			1
N019652-002B / MW-55-045-Q216	Groundwater	5/5/2016 8:21:00 AM	16OZP		1	
N019652-003A / MW-55-120-Q216	Groundwater	5/5/2016 8:14:00 AM	8OZP			1
N019652-003B / MW-55-120-Q216	Groundwater	5/5/2016 8:14:00 AM	16OZP		1	
N019652-004A / MW-55-120-EB-Q216	Groundwater	5/5/2016 7:30:00 AM	8OZP	1		
N019652-004B / MW-55-120-EB-Q216	Groundwater	5/5/2016 7:30:00 AM	16OZP		1	
N019652-005A / MW-56D-Q216	Groundwater	5/5/2016 10:02:00 AM	8OZP	1		
N019652-005B / MW-56D-Q216	Groundwater	5/5/2016 10:02:00 AM	16OZP		1	
N019652-006A / MW-56M-Q216	Groundwater	5/5/2016 9:54:00 AM	8OZP	1		
N019652-006B / MW-56M-Q216	Groundwater	5/5/2016 9:54:00 AM	16OZP		1	
N019652-007A / MW-56S-Q216	Groundwater	5/5/2016 10:52:00 AM	8OZP	1		
N019652-007B / MW-56S-Q216	Groundwater	5/5/2016 10:52:00 AM	16OZP		1	
N019652-008A / MW-721-Q216	Groundwater	5/5/2016 7:35:00 AM	8OZP	1		
N019652-009A / MW-722-Q216	Groundwater	5/5/2016 7:55:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N19652A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Hexavalent Chromium and Dissolved Chromium.

GSO #: 5318355536

		Date/Time			Date/Time
Relinquished by:	Yesenia Rodriguez	5/5/16 17:00	**Received by:**	YangZou	5/6/16 09:15
Relinquished by:			**Received by:**		

COOLER RECEIPT FORM **ARF: 79769**

1) Project: N19652 Date Received: 05/06/16

2) Coolers: Number of Coolers: 1

3) No Were custody seals present and intact?
How many? 0 Name/Date on seal? _____

4) YES Was there a shipping slip? Carrier name: GSO

5) Type of packing in cooler: YL 5/6/16 X bubble wrap __ popcorn __ foam YL 5/6/16 X plastic bags
X wet ice __ dry ice __ no ice __ other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use j5297

8) Cooler temp(s): In °C
1: 4.0 2: _____ 3: _____ 4: _____ 5: _____ 6: _____
7: _____ 8: _____ 9: _____ 10: _____ 11: _____ 12: _____

Chain of custody:

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) NA Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea: _____
Smaller than a pea: _____

Preservation Hold time:

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) NA Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) NA Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) NO Were unpreserved VOA Vials received?

23) NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: _____
Lab notified if pH was not adequate: _____

Notes/Deficiencies:

Personnel receiving samples: jm Second reviewer: YL
Personnel labeling samples: _____
Project manager notified: _____ Date/Time of notification _____
Name of client notified: _____ Date/Time of notification _____

Revision: 22, November 5, 2013

METALS

APPL, INC.

METALS
QC Summary

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
6020A	CHROMIUM (CR) (DISSOLV	Not detected	10.0	0.45	ug/L	05/19/16	05/20/16	#62A14-160519B1-AZ35060

Metals SC-Blank-REG MDLs
Printed: 05/22/16 10:12:14 AM

Laboratory Control Spike Recovery

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	CHROMIUM (CR) (DISSOLVED)	50.0	46.9	93.8	80-120	05/19/16	05/20/16	#62A14-160519B1-AZ35060

Comments: _____

METALS
Sample Data

APPL, INC.

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19652
Sample ID: N019652-001/ MW-55-045-EB-Q216
Sample Collection Date: 05/05/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79769
APPL ID: AZ35060

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	0.68 J	10.0	0.45	ug/L	1	05/19/16	05/19/16

J = Estimated value.

Printed: 05/22/16 10:12:10 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ35060W02 DF10
Data File Name	083SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:12:37-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79769
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.041	-0.453	-9.18	43	70.50	10000	
B	11	45	NoGas	3.533	39.258	3.99	72536	0.97	10000	
Na	23	45	He	214.442	2382.689	17.13	93243	8.53	1000000	
Mg	24	45	He	0.725	8.055	37.06	252	19.35	1000000	
Al	27	45	He	11.056	122.845	28.10	593	13.16	1000000	
K	39	45	He	7.787	86.522	69.10	7030	3.00	500000	
Ca	40	45	H2	17.611	195.680	13.78	103739	2.64	500000	
Ti	47	45	He	0.183	2.035	14.57	11	17.30	10000	
V	51	45	He	0.011	0.127	28.63	78	15.05	10000	
Cr	52	45	He	0.062	0.685	38.73	696	9.70	10000	
Mn	55	45	He	0.039	0.437	67.21	147	14.90	50000	
Fe	56	45	He	0.502	5.579	22.93	5089	4.40	1000000	
Co	59	45	He	-0.008	-0.090	-12.94	53	18.75	10000	
Ni	60	45	He	0.038	0.420	24.73	212	11.89	10000	
Cu	63	45	He	0.047	0.518	67.33	1966	6.63	10000	
Zn	66	115	He	0.120	1.332	90.62	1008	7.59	50000	
As	75	115	He	0.012	0.132	132.47	11	66.51	2000	
Se	78	72	H2	0.013	0.143	48.76	11	25.70	10000	
Se	78	115	He	-0.032	-0.351	-644.52	2	107.85	10000	
Sr	88	115	NoGas	0.092	1.019	8.78	12221	5.28	50000	
Mo	95	115	NoGas	0.036	0.402	15.14	787	11.46	10000	
Ag	107	115	NoGas	0.003	0.039	79.33	280	41.19	5000	
Cd	111	115	He	0.006	0.072	101.08	14	51.51	10000	
Sn	118	115	He	0.047	0.523	75.90	258	22.19	10000	
Sn	118	115	NoGas	0.045	0.497	10.13	4137	3.32	10000	
Sb	121	115	NoGas	0.825	9.161	3.11	32037	3.44	10000	
Ba	137	165	NoGas	0.020	0.221	31.25	663	9.21	50000	
Tl	205	165	NoGas	0.003	0.030	59.75	447	21.28	5000	
Pb	208	165	NoGas	-0.020	-0.222	-5.76	5357	2.16	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	244009	0.66	236257	103.28	70	120	
Sc	45	H2	479675	4.23	485596	98.78	70	120	
Sc	45	He	33350	5.62	32391	102.96	70	120	
Sc	45	NoGas	3694834	0.08	3469736	106.49	70	120	
Ge	72	H2	138951	4.77	144823	95.94	70	120	
Ge	72	He	32158	6.04	31735	101.33	70	120	
Ge	72	NoGas	893709	0.70	850290	105.11	70	120	
In	115	H2	3170739	6.00	3158297	100.39	70	120	
In	115	He	238365	5.04	233876	101.92	70	120	
In	115	NoGas	5845236	0.78	5452775	107.20	70	120	
Tb	159	H2	6228359	4.00	6131794	101.57	70	120	
Tb	159	He	1298414	5.07	1276461	101.72	70	120	
Tb	159	NoGas	7669469	0.56	7146294	107.32	70	120	
Ho	165	H2	5851601	4.38	5782470	101.20	70	120	
Ho	165	He	1285283	5.40	1264936	101.61	70	120	
Ho	165	NoGas	7217779	1.17	6686360	107.95	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19652
Sample ID: N019652-002/ MW-55-045-Q216
Sample Collection Date: 05/05/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79769
APPL ID: AZ35061

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	0.61 J	10.0	0.45	ug/L	1	05/19/16	05/19/16

J = Estimated value.

Printed: 05/22/16 10:12:10 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ35061W03 DF10
Data File Name	084SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:16:07-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79769
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.038	-0.426	-11.26	63	55.45	10000	
B	11	45	NoGas	50.335	559.282	1.07	317483	1.08	10000	
Na	23	45	He	22672.302	251914.470	1.83	7690563	1.08	1000000	
Mg	24	45	He	885.785	9842.059	0.92	131833	0.87	1000000	
Al	27	45	He	3.876	43.072	14.64	342	3.94	1000000	
K	39	45	He	446.537	4961.518	3.09	38932	1.14	500000	
Ca	40	45	H2	3824.847	42498.302	5.79	10483535	1.46	500000	
Ti	47	45	He	0.094	1.048	150.66	7	99.98	10000	
V	51	45	He	0.415	4.615	5.87	1097	5.57	10000	
Cr	52	45	He	0.055	0.611	62.98	651	17.21	10000	
Mn	55	45	He	93.537	1039.300	1.79	101118	0.60	50000	
Fe	56	45	He	7.868	87.417	1.65	24788	0.84	1000000	
Co	59	45	He	0.010	0.108	34.01	183	14.54	10000	
Ni	60	45	He	0.059	0.657	32.12	253	15.95	10000	
Cu	63	45	He	0.016	0.179	185.81	1712	11.44	10000	
Zn	66	115	He	0.132	1.470	141.43	992	14.15	50000	
As	75	115	He	0.564	6.265	1.00	237	0.24	2000	
Se	78	72	H2	0.016	0.178	23.73	12	18.54	10000	
Se	78	115	He	-0.054	-0.597	-262.30	2	86.60	10000	
Sr	88	115	NoGas	71.489	794.320	1.75	5610703	1.49	50000	
Mo	95	115	NoGas	3.284	36.485	1.33	52088	0.72	10000	
Ag	107	115	NoGas	0.001	0.016	41.07	193	11.94	5000	
Cd	111	115	He	0.007	0.078	30.38	14	14.29	10000	
Sn	118	115	He	0.045	0.498	82.50	248	21.79	10000	
Sn	118	115	NoGas	0.029	0.324	31.58	3775	5.92	10000	
Sb	121	115	NoGas	0.499	5.542	2.76	20286	2.67	10000	
Ba	137	165	NoGas	66.437	738.190	1.06	738362	1.43	50000	
Tl	205	165	NoGas	0.063	0.702	1.35	4174	1.92	5000	
Pb	208	165	NoGas	-0.037	-0.411	-15.80	3920	12.70	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	236663	1.16	236257	100.17	70	120	
Sc	45	H2	469219	4.31	485596	96.63	70	120	
Sc	45	He	32316	1.60	32391	99.77	70	120	
Sc	45	NoGas	3696001	0.19	3469736	106.52	70	120	
Ge	72	H2	136498	4.63	144823	94.25	70	120	
Ge	72	He	31802	1.03	31735	100.21	70	120	
Ge	72	NoGas	893509	0.43	850290	105.08	70	120	
In	115	H2	3103927	4.98	3158297	98.28	70	120	
In	115	He	232235	1.12	233876	99.30	70	120	
In	115	NoGas	5843212	0.61	5452775	107.16	70	120	
Tb	159	H2	6110027	4.36	6131794	99.65	70	120	
Tb	159	He	1273631	0.76	1276461	99.78	70	120	
Tb	159	NoGas	7722203	0.38	7146294	108.06	70	120	
Ho	165	H2	5708101	5.51	5782470	98.71	70	120	
Ho	165	He	1262223	0.94	1264936	99.79	70	120	
Ho	165	NoGas	7220270	0.66	6686360	107.99	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19652
Sample ID: N019652-003/ MW-55-120-Q216
Sample Collection Date: 05/05/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79769
APPL ID: AZ35062

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	10.6	10.0	0.45	ug/L	1	05/19/16	05/19/16

Printed: 05/22/16 10:12:10 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ35062W03 DF10
Data File Name	085SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:19:29-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79769
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.034	-0.378	-17.80	97	48.89	10000	
B	11	45	NoGas	140.585	1562.052	1.08	779855	0.35	10000	
Na	23	45	He	149057.328	1656192.533	2.62	52178450	0.57	1000000	
Mg	24	45	He	179.544	1994.939	3.25	27742	1.77	1000000	
Al	27	45	He	12.384	137.602	5.49	643	5.61	1000000	
K	39	45	He	1829.735	20330.390	1.60	144977	1.35	500000	
Ca	40	45	H2	8554.665	95051.833	5.72	23804262	2.15	500000	
Ti	47	45	He	0.237	2.630	158.32	13	129.94	10000	
V	51	45	He	0.286	3.181	12.17	796	9.23	10000	
Cr	52	45	He	0.958	10.643	2.85	4009	4.24	10000	
Mn	55	45	He	1.998	22.205	0.87	2337	2.35	50000	
Fe	56	45	He	12.560	139.561	3.44	38706	0.68	1000000	
Co	59	45	He	-0.003	-0.030	-94.92	94	21.28	10000	
Ni	60	45	He	0.227	2.522	6.86	653	7.52	10000	
Cu	63	45	He	0.113	1.260	14.26	2426	2.39	10000	
Zn	66	115	He	0.634	7.043	3.99	1308	2.94	50000	
As	75	115	He	0.568	6.312	8.51	232	6.22	2000	
Se	78	72	H2	0.073	0.811	5.15	38	4.54	10000	
Se	78	115	He	-0.103	-1.149	-94.64	1	86.60	10000	
Sr	88	115	NoGas	204.464	2271.825	0.82	15250371	1.16	50000	
Mo	95	115	NoGas	3.524	39.157	0.85	53144	0.96	10000	
Ag	107	115	NoGas	0.000	0.001	102.16	133	4.33	5000	
Cd	111	115	He	0.009	0.099	63.36	15	32.83	10000	
Sn	118	115	He	0.031	0.348	72.73	223	15.80	10000	
Sn	118	115	NoGas	0.031	0.342	34.31	3625	7.37	10000	
Sb	121	115	NoGas	0.319	3.543	3.43	13129	3.80	10000	
Ba	137	165	NoGas	5.243	58.257	0.97	57140	1.45	50000	
Tl	205	165	NoGas	0.007	0.080	33.22	703	20.72	5000	
Pb	208	165	NoGas	-0.023	-0.259	-15.13	4944	6.08	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	206268	1.05	236257	87.31	70	120	
Sc	45	H2	477589	3.70	485596	98.35	70	120	
Sc	45	He	33428	2.85	32391	103.20	70	120	
Sc	45	NoGas	3649960	1.33	3469736	105.19	70	120	
Ge	72	H2	136229	3.40	144823	94.07	70	120	
Ge	72	He	31342	2.64	31735	98.76	70	120	
Ge	72	NoGas	876513	0.35	850290	103.08	70	120	
In	115	H2	3021186	3.61	3158297	95.66	70	120	
In	115	He	226254	2.23	233876	96.74	70	120	
In	115	NoGas	5556147	0.93	5452775	101.90	70	120	
Tb	159	H2	6021072	3.78	6131794	98.19	70	120	
Tb	159	He	1253598	1.97	1276461	98.21	70	120	
Tb	159	NoGas	7474823	1.22	7146294	104.60	70	120	
Ho	165	H2	5709106	3.33	5782470	98.73	70	120	
Ho	165	He	1247615	1.69	1264936	98.63	70	120	
Ho	165	NoGas	7030746	0.49	6686360	105.15	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19652
Sample ID: N019652-004/ MW-55-120-EB-Q216
Sample Collection Date: 05/05/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79769
APPL ID: AZ35063

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	Not detected	10.0	0.45	ug/L	1	05/19/16	05/19/16

Printed: 05/22/16 10:12:10 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ35063W02 DF10
Data File Name	086SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:22:51-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79769
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.040	-0.448	-11.84	47	81.13	10000	
B	11	45	NoGas	3.325	36.944	10.72	71448	1.21	10000	
Na	23	45	He	336.602	3740.026	13.71	136428	11.89	1000000	
Mg	24	45	He	0.823	9.144	27.97	267	13.05	1000000	
Al	27	45	He	1.086	12.070	87.65	259	12.37	1000000	
K	39	45	He	9.685	107.607	74.63	7188	7.47	500000	
Ca	40	45	H2	41.240	458.225	15.59	169068	5.53	500000	
Ti	47	45	He	0.045	0.496	237.66	4	114.60	10000	
V	51	45	He	-0.001	-0.014	-313.77	44	22.92	10000	
Cr	52	45	He	0.038	0.426	32.37	612	7.63	10000	
Mn	55	45	He	0.031	0.349	148.01	139	37.20	50000	
Fe	56	45	He	0.264	2.938	15.53	4437	2.83	1000000	
Co	59	45	He	-0.009	-0.098	-25.23	48	35.11	10000	
Ni	60	45	He	0.042	0.468	37.16	222	16.52	10000	
Cu	63	45	He	0.018	0.195	199.90	1777	13.02	10000	
Zn	66	115	He	0.021	0.236	497.24	926	9.40	50000	
As	75	115	He	0.009	0.105	127.78	9	54.98	2000	
Se	78	72	H2	0.007	0.082	40.41	8	19.05	10000	
Se	78	115	He	-0.163	-1.810	-56.82	1	173.21	10000	
Sr	88	115	NoGas	0.213	2.365	11.22	21824	7.39	50000	
Mo	95	115	NoGas	0.027	0.297	16.63	640	11.80	10000	
Ag	107	115	NoGas	0.001	0.013	52.15	183	13.73	5000	
Cd	111	115	He	0.012	0.129	71.92	19	44.61	10000	
Sn	118	115	He	0.009	0.099	409.89	200	24.21	10000	
Sn	118	115	NoGas	0.026	0.294	18.70	3730	1.99	10000	
Sb	121	115	NoGas	0.200	2.228	5.10	9593	4.26	10000	
Ba	137	165	NoGas	0.020	0.219	33.08	667	8.53	50000	
Tl	205	165	NoGas	-0.001	-0.006	-72.63	250	12.00	5000	
Pb	208	165	NoGas	-0.035	-0.384	-10.68	4150	5.10	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	243464	1.43	236257	103.05	70	120	
Sc	45	H2	479008	5.02	485596	98.64	70	120	
Sc	45	He	33360	0.26	32391	102.99	70	120	
Sc	45	NoGas	3695935	1.70	3469736	106.52	70	120	
Ge	72	H2	138712	5.89	144823	95.78	70	120	
Ge	72	He	31876	4.11	31735	100.45	70	120	
Ge	72	NoGas	897186	0.83	850290	105.52	70	120	
In	115	H2	3173193	5.45	3158297	100.47	70	120	
In	115	He	235089	1.51	233876	100.52	70	120	
In	115	NoGas	5876185	1.19	5452775	107.77	70	120	
Tb	159	H2	6159403	4.16	6131794	100.45	70	120	
Tb	159	He	1275008	1.43	1276461	99.89	70	120	
Tb	159	NoGas	7718393	0.84	7146294	108.01	70	120	
Ho	165	H2	5770705	4.85	5782470	99.80	70	120	
Ho	165	He	1265399	1.26	1264936	100.04	70	120	
Ho	165	NoGas	7278457	2.53	6686360	108.86	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19652
Sample ID: N019652-005/ MW-56D-Q216
Sample Collection Date: 05/05/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79769
APPL ID: AZ35064

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	1.9 J	10.0	0.45	ug/L	1	05/19/16	05/19/16

J = Estimated value.

Printed: 05/22/16 10:12:10 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ35064W02 DF10
Data File Name	092SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:43:14-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79769
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.028	-0.308	-29.81	147	43.30	10000	
B	11	45	NoGas	199.586	2217.617	0.89	1081574	0.86	10000	
Na	23	45	He	423864.947	4709610.522	6.85	144033337	0.68	1000000	
Mg	24	45	He	8252.362	91692.912	7.13	1231761	0.56	1000000	
Al	27	45	He	1.965	21.838	69.52	280	10.91	1000000	
K	39	45	He	3377.989	37533.206	6.55	254585	1.73	500000	
Ca	40	45	H2	41251.420	458349.111	5.53	116525302	1.11	500000	
Ti	47	45	He	0.001	0.009	10165.63	2	173.21	10000	
V	51	45	He	0.125	1.392	29.41	361	19.89	10000	
Cr	52	45	He	0.170	1.885	24.14	1063	8.13	10000	
Mn	55	45	He	75.490	838.776	6.06	81992	1.47	50000	
Fe	56	45	He	83.461	927.349	6.06	229530	1.55	1000000	
Co	59	45	He	0.106	1.180	34.00	888	23.14	10000	
Ni	60	45	He	0.438	4.864	6.98	1110	1.31	10000	
Cu	63	45	He	0.308	3.419	16.97	3624	2.14	10000	
Zn	66	115	He	1.244	13.824	6.80	1670	4.68	50000	
As	75	115	He	0.390	4.335	8.54	156	7.39	2000	
Se	78	72	H2	0.227	2.526	12.13	110	8.84	10000	
Se	78	115	He	-0.012	-0.137	-510.68	2	24.74	10000	
Sr	88	115	NoGas	1019.563	11328.477	1.36	74551869	0.98	50000	
Mo	95	115	NoGas	4.082	45.355	1.09	60334	1.44	10000	
Ag	107	115	NoGas	0.012	0.129	10.79	573	8.60	5000	
Cd	111	115	He	0.023	0.258	26.57	28	25.75	10000	
Sn	118	115	He	0.256	2.843	29.74	504	13.12	10000	
Sn	118	115	NoGas	0.136	1.508	10.88	5829	5.27	10000	
Sb	121	115	NoGas	1.696	18.847	1.99	59148	2.13	10000	
Ba	137	165	NoGas	4.260	47.335	2.74	45284	3.25	50000	
Tl	205	165	NoGas	0.030	0.338	5.21	2044	3.96	5000	
Pb	208	165	NoGas	0.036	0.401	17.81	9562	4.83	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	186636	1.22	236257	79.00	70	120	
Sc	45	H2	485814	4.42	485596	100.04	70	120	
Sc	45	He	32556	7.70	32391	100.51	70	120	
Sc	45	NoGas	3639336	1.70	3469736	104.89	70	120	
Ge	72	H2	137599	4.31	144823	95.01	70	120	
Ge	72	He	30357	7.37	31735	95.66	70	120	
Ge	72	NoGas	861560	1.07	850290	101.33	70	120	
In	115	H2	3027955	4.25	3158297	95.87	70	120	
In	115	He	219483	6.97	233876	93.85	70	120	
In	115	NoGas	5448485	0.37	5452775	99.92	70	120	
Tb	159	H2	5912112	4.07	6131794	96.42	70	120	
Tb	159	He	1208171	6.58	1276461	94.65	70	120	
Tb	159	NoGas	7260270	0.84	7146294	101.59	70	120	
Ho	165	H2	5578166	4.95	5782470	96.47	70	120	
Ho	165	He	1198660	6.70	1264936	94.76	70	120	
Ho	165	NoGas	6845304	0.57	6686360	102.38	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19652
Sample ID: N019652-006/ MW-56M-Q216
Sample Collection Date: 05/05/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79769
APPL ID: AZ35065

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	Not detected	10.0	0.45	ug/L	1	05/19/16	05/19/16

Printed: 05/22/16 10:12:10 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ35065W02 DF10
Data File Name	093SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:46:40-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79769
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.037	-0.415	-16.12	73	69.98	10000	
B	11	45	NoGas	148.527	1650.296	1.49	852279	0.99	10000	
Na	23	45	He	245865.049	2731833.874	6.61	87814425	0.86	1000000	
Mg	24	45	He	9316.646	103518.290	6.97	1461483	0.94	1000000	
Al	27	45	He	1.159	12.883	82.72	269	17.37	1000000	
K	39	45	He	1650.384	18337.601	6.12	134102	0.60	500000	
Ca	40	45	H2	37631.693	418129.919	7.42	105763831	1.74	500000	
Ti	47	45	He	0.044	0.492	181.38	4	86.60	10000	
V	51	45	He	0.009	0.097	22.47	72	9.61	10000	
Cr	52	45	He	0.035	0.391	27.03	614	4.61	10000	
Mn	55	45	He	73.496	816.619	5.50	83900	0.85	50000	
Fe	56	45	He	229.014	2544.599	6.24	655123	0.18	1000000	
Co	59	45	He	0.001	0.009	179.84	124	13.75	10000	
Ni	60	45	He	0.113	1.259	16.08	396	4.79	10000	
Cu	63	45	He	0.057	0.632	1.16	2092	5.76	10000	
Zn	66	115	He	0.097	1.081	74.47	980	5.03	50000	
As	75	115	He	0.028	0.306	70.74	17	51.28	2000	
Se	78	72	H2	0.034	0.373	12.38	21	4.90	10000	
Se	78	115	He	-0.101	-1.125	-197.07	1	173.21	10000	
Sr	88	115	NoGas	776.307	8625.636	1.41	58934997	0.08	50000	
Mo	95	115	NoGas	0.800	8.889	7.78	12435	6.20	10000	
Ag	107	115	NoGas	0.003	0.036	12.70	260	6.66	5000	
Cd	111	115	He	0.006	0.065	192.28	13	77.89	10000	
Sn	118	115	He	0.057	0.635	15.89	269	10.40	10000	
Sn	118	115	NoGas	0.041	0.451	8.50	3909	0.51	10000	
Sb	121	115	NoGas	0.550	6.108	2.34	21414	1.09	10000	
Ba	137	165	NoGas	4.468	49.649	1.74	49169	1.96	50000	
Tl	205	165	NoGas	0.006	0.063	33.77	620	18.60	5000	
Pb	208	165	NoGas	-0.035	-0.387	-5.27	4027	3.55	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	210498	1.48	236257	89.10	70	120	
Sc	45	H2	483885	5.59	485596	99.65	70	120	
Sc	45	He	34184	5.94	32391	105.54	70	120	
Sc	45	NoGas	3789493	1.26	3469736	109.22	70	120	
Ge	72	H2	138417	5.08	144823	95.58	70	120	
Ge	72	He	32787	4.92	31735	103.31	70	120	
Ge	72	NoGas	898505	0.94	850290	105.67	70	120	
In	115	H2	3003908	4.06	3158297	95.11	70	120	
In	115	He	235685	5.92	233876	100.77	70	120	
In	115	NoGas	5657284	1.47	5452775	103.75	70	120	
Tb	159	H2	5929243	5.93	6131794	96.70	70	120	
Tb	159	He	1300975	5.48	1276461	101.92	70	120	
Tb	159	NoGas	7544526	1.57	7146294	105.57	70	120	
Ho	165	H2	5587655	4.75	5782470	96.63	70	120	
Ho	165	He	1296952	5.65	1264936	102.53	70	120	
Ho	165	NoGas	7089650	0.30	6686360	106.03	70	120	

Metals Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin
Project: N19652
Sample ID: N019652-007/ MW-56S-Q216
Sample Collection Date: 05/05/16

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 79769
APPL ID: AZ35066

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
6020A/3015^	CHROMIUM (CR) (DISSOLV	0.70 J	10.0	0.45	ug/L	1	05/19/16	05/19/16

J = Estimated value.

Printed: 05/22/16 10:12:10 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ35066W02 DF10
Data File Name	094SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:50:01-07:00
Sample Type	Sample
Dilution	11.11111111
Comment	Asset 79769
ISTD Ref FileName	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	45	NoGas	-0.039	-0.437	-4.70	57	26.96	10000	
B	11	45	NoGas	167.631	1862.566	1.25	956145	1.45	10000	
Na	23	45	He	104746.791	1163853.228	2.59	36878344	0.85	1000000	
Mg	24	45	He	7828.747	86986.078	1.81	1210560	0.97	1000000	
Al	27	45	He	2.999	33.325	83.46	326	25.17	1000000	
K	39	45	He	967.491	10749.901	3.05	80134	0.92	500000	
Ca	40	45	H2	21733.219	241480.215	7.50	62365580	3.03	500000	
Ti	47	45	He	0.205	2.274	68.49	12	56.76	10000	
V	51	45	He	0.048	0.535	22.43	174	14.59	10000	
Cr	52	45	He	0.063	0.705	3.64	710	2.86	10000	
Mn	55	45	He	113.226	1258.069	2.17	127268	0.27	50000	
Fe	56	45	He	662.787	7364.302	1.60	1861365	1.21	1000000	
Co	59	45	He	0.046	0.510	7.25	468	3.92	10000	
Ni	60	45	He	0.475	5.274	4.82	1237	6.16	10000	
Cu	63	45	He	0.041	0.460	61.75	1951	7.94	10000	
Zn	66	115	He	2.645	29.390	5.00	2791	3.34	50000	
As	75	115	He	0.730	8.111	0.94	310	1.56	2000	
Se	78	72	H2	0.048	0.535	21.79	28	14.03	10000	
Se	78	115	He	-0.001	-0.015	-7161.97	3	43.30	10000	
Sr	88	115	NoGas	300.074	3334.154	0.33	23204825	0.69	50000	
Mo	95	115	NoGas	2.356	26.176	1.65	36906	1.57	10000	
Ag	107	115	NoGas	0.004	0.042	45.75	287	24.50	5000	
Cd	111	115	He	0.010	0.115	133.46	17	76.83	10000	
Sn	118	115	He	0.070	0.779	56.20	287	19.42	10000	
Sn	118	115	NoGas	0.041	0.454	33.20	3991	8.78	10000	
Sb	121	115	NoGas	0.263	2.926	1.79	11638	1.37	10000	
Ba	137	165	NoGas	6.898	76.643	1.52	77395	1.37	50000	
Tl	205	165	NoGas	0.001	0.015	31.16	363	5.73	5000	
Pb	208	165	NoGas	-0.015	-0.163	-7.49	5831	2.89	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	220882	1.20	236257	93.49	70	120	
Sc	45	H2	493607	4.45	485596	101.65	70	120	
Sc	45	He	33610	1.88	32391	103.76	70	120	
Sc	45	NoGas	3794545	0.45	3469736	109.36	70	120	
Ge	72	H2	142714	4.45	144823	98.54	70	120	
Ge	72	He	33070	1.78	31735	104.21	70	120	
Ge	72	NoGas	904295	0.60	850290	106.35	70	120	
In	115	H2	3134310	5.01	3158297	99.24	70	120	
In	115	He	235781	1.03	233876	100.81	70	120	
In	115	NoGas	5761163	0.98	5452775	105.66	70	120	
Tb	159	H2	6124705	4.44	6131794	99.88	70	120	
Tb	159	He	1294423	1.22	1276461	101.41	70	120	
Tb	159	NoGas	7667349	1.25	7146294	107.29	70	120	
Ho	165	H2	5766450	4.53	5782470	99.72	70	120	
Ho	165	He	1288530	1.47	1264936	101.87	70	120	
Ho	165	NoGas	7252546	1.34	6686360	108.47	70	120	

METALS
Calibration Data

APPL, INC.

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories
ARF No: 79769 SDG: 79769
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 05/19/16 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 15:50	%R(1)	True CCV1	Found 19:18	%R(1)	True CCV1	Found 20:26	%R(1)	
Chromium (Cr)	100	104.185	104	50	48.2626	96.5	50	48.8641	97.7	P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No: 79769 SDG: 79769

Initial Calibration Source: CPI

Continuing Calibration Source: Environmental Express

Analysis Date: 05/19/16 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 15:50	%R(1)	True CCV1	Found 21:20	%R(1)	True	Found	%R(1)	
Chromium (Cr)	100	104.185	104	50	47.0868	94.2				P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No.: 79769 SDG: 79769

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 05/19/16

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)								Preparation Blank		M
		C	1	C	2	C	3	C			C		
	16:32		19:25		20:33		21:26						
Chromium (Cr)	10.00	U	10.00	U	10.00	U	10.00	U					P

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories
ARF No.: 79769 SDG: 79769
ICP ID Number: Megatron ICS Source: Environmental Express

Analysis Date: 05/19/16 Concentration Units: ug/L

Analyte	True		Initial Found		
	Sol A	Sol AB	Sol A 16:36	Sol AB 16:39	%R(1)
Chromium (Cr)		50	0.451793	47.102517	94.2

(1) Control Limits: Metals 80-120

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories
ARF No: 79769 SDG: 79769
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 05/20/16 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 9:15	%R(1)	True CCV1	Found 11:34	%R(1)	True	Found	%R(1)	
Chromium (Cr)	100	106.219	106	50	51.2559	103				P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No.: 79769 SDG: 79769

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 05/20/16

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	1	C	2	C	3	C		C	
	10:04		11:41						11:06		
Chromium (Cr)	10.00	U	10.00	U					10.00	U	P

A.P.P.L. INC.

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name:	A.P.P.L. INC.	Contract:	ASSET Laboratories
ARF No.:	79769	SDG:	79769
ICP ID Number:	Megatron	ICS Source:	Environmental Express

Analysis Date: 05/20/16 Concentration Units: ug/L

Analyte	True		Initial Found		
	Sol A	Sol AB	Sol A 10:32	Sol AB 10:26	%R(1)
Chromium (Cr)		50	0.624589	53.963584	108

(1) Control Limits: Metals 80-120

Calibration Blank Report

Sample Table

Sample Name	Calibration Blank 05/19/16
Data File Name	005CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:33:26-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD
Be	9	45	NoGas	353	18.19
B	11	45	NoGas	50762	1.97
Na	23	45	He	18268	2.13
Mg	24	45	He	137	24.02
Al	27	45	He	216	9.45
K	39	45	He	6268	2.21
Ca	40	45	H2	55390	2.33
Ca (no)	44	45	He	123	2.70
Ti	47	45	He	2	86.60
V	51	45	He	47	65.47
Cr	52	45	He	457	9.54
Mn	55	45	He	101	18.16
Fe	56	45	He	3593	1.48
Co	59	45	He	111	35.15
Ni	60	45	He	121	29.43
Cu	63	45	He	1610	5.93
Zn	66	115	He	904	8.24
As	75	115	He	5	47.19
Se	78	72	H2	5	40.70
Se	78	115	He	3	43.30
Sr	88	115	NoGas	4688	2.49
Mo	95	115	NoGas	200	13.23
Ag	107	115	NoGas	127	39.74
Cd	111	115	He	7	31.49
Sn	118	115	He	187	19.32
Sn	118	115	NoGas	2888	4.97
Sb	121	115	NoGas	2160	10.31
Ba	137	165	NoGas	410	34.58
Tl	205	165	NoGas	260	37.88
[Pb]	206	165	NoGas	1627	3.76
[Pb]	207	165	NoGas	1420	3.07
Pb	208	165	NoGas	6521	1.62

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	NoGas	236257	0.38
Sc	45	H2	485596	4.25
Sc	45	He	32391	1.76
Sc	45	NoGas	3469736	0.68
Ge	72	H2	144823	4.83
Ge	72	He	31735	2.77
Ge	72	NoGas	850290	0.09
In	115	H2	3158297	4.15
In	115	He	233876	1.28
In	115	NoGas	5452775	0.59
Tb	159	H2	6131794	5.05
Tb	159	He	1276461	1.57
Tb	159	NoGas	7146294	1.12
Ho	165	H2	5782470	4.94
Ho	165	He	1264936	1.25
Ho	165	NoGas	6686360	0.64

Calibration Standard Report

Sample Table

Sample Name	Standard 1 05/19/16
Data File Name	006CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:36:55-07:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	1220	13.54	1.0000
B	11	45	NoGas	51391	2.32	-1.0000
Na	23	45	He	19729	0.75	1.0000
Mg	24	45	He	957	9.96	1.0000
Al	27	45	He	311	3.44	1.0000
K	39	45	He	6876	4.96	1.0000
Ca	40	45	H2	82546	1.02	1.0000
Ca (no)	44	45	He	139	7.72	
Ti	47	45	He	13	43.29	1.0000
V	51	45	He	323	14.29	1.0000
Cr	52	45	He	850	1.18	1.0000
Mn	55	45	He	241	11.09	1.0000
Fe	56	45	He	10135	3.79	1.0000
Co	59	45	He	934	9.85	1.0000
Ni	60	45	He	438	4.33	1.0000
Cu	63	45	He	2814	2.99	1.0000
Zn	66	115	He	994	8.38	1.0000
As	75	115	He	42	29.83	1.0000
Se	78	72	H2	46	15.22	1.0000
Se	78	115	He	3	105.36	1.0000
Sr	88	115	NoGas	12051	0.29	1.0000
Mo	95	115	NoGas	1507	14.99	1.0000
Ag	107	115	NoGas	2097	7.18	1.0000
Cd	111	115	He	118	15.53	1.0000
Sn	118	115	He	319	10.73	1.0000
Sn	118	115	NoGas	4675	5.98	1.0000
Sb	121	115	NoGas	5314	4.63	1.0000
Ba	137	165	NoGas	1770	9.40	1.0000
Tl	205	165	NoGas	6428	0.70	1.0000
[Pb]	206	165	NoGas	3614	3.06	
[Pb]	207	165	NoGas	3324	5.98	
Pb	208	165	NoGas	14557	1.79	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	238215	2.42	236257	100.83	70	120	
Sc	45	H2	485801	3.07	485596	100.04	70	120	
Sc	45	He	32220	1.78	32391	99.47	70	120	
Sc	45	NoGas	3515807	1.04	3469736	101.33	70	120	
Ge	72	H2	143058	4.46	144823	98.78	70	120	
Ge	72	He	31271	1.91	31735	98.54	70	120	
Ge	72	NoGas	844417	0.70	850290	99.31	70	120	
In	115	H2	3187705	4.73	3158297	100.93	70	120	
In	115	He	234251	1.13	233876	100.16	70	120	
In	115	NoGas	5492362	0.27	5452775	100.73	70	120	
Tb	159	H2	6174668	4.54	6131794	100.70	70	120	
Tb	159	He	1287728	1.09	1276461	100.88	70	120	
Tb	159	NoGas	7219231	1.77	7146294	101.02	70	120	
Ho	165	H2	5811323	5.03	5782470	100.50	70	120	
Ho	165	He	1271704	0.65	1264936	100.54	70	120	
Ho	165	NoGas	6756987	1.43	6686360	101.06	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 2 05/19/16
Data File Name	007CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:40:20-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	8012	2.06	1.0000
B	11	45	NoGas	54823	1.51	0.9951
Na	23	45	He	28583	2.52	0.9989
Mg	24	45	He	7615	0.65	1.0000
Al	27	45	He	934	2.91	0.9995
K	39	45	He	7854	2.98	0.9544
Ca	40	45	H2	202358	1.46	0.9968
Ca (no)	44	45	He	420	19.31	
Ti	47	45	He	80	41.05	0.9991
V	51	45	He	2445	1.73	0.9999
Cr	52	45	He	4113	3.53	1.0000
Mn	55	45	He	1273	5.26	0.9998
Fe	56	45	He	56708	0.82	0.9998
Co	59	45	He	7478	0.78	0.9999
Ni	60	45	He	2467	1.52	0.9994
Cu	63	45	He	8791	4.96	0.9978
Zn	66	115	He	1653	3.24	0.9999
As	75	115	He	392	3.26	1.0000
Se	78	72	H2	471	1.49	0.9999
Se	78	115	He	15	42.43	0.9990
Sr	88	115	NoGas	75390	0.71	1.0000
Mo	95	115	NoGas	14396	4.94	1.0000
Ag	107	115	NoGas	18627	2.04	1.0000
Cd	111	115	He	977	4.80	0.9999
Sn	118	115	He	1519	4.63	1.0000
Sn	118	115	NoGas	23029	1.62	0.9999
Sb	121	115	NoGas	34843	2.58	1.0000
Ba	137	165	NoGas	11521	4.04	0.9998
Tl	205	165	NoGas	54579	2.18	0.9999
[Pb]	206	165	NoGas	19703	1.36	
[Pb]	207	165	NoGas	17507	2.19	
Pb	208	165	NoGas	80352	0.17	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	234060	0.90	236257	99.07	70	120	
Sc	45	H2	479835	4.56	485596	98.81	70	120	
Sc	45	He	32030	0.86	32391	98.89	70	120	
Sc	45	NoGas	3442503	2.24	3469736	99.22	70	120	
Ge	72	H2	141963	4.18	144823	98.02	70	120	
Ge	72	He	31188	0.84	31735	98.28	70	120	
Ge	72	NoGas	836242	1.37	850290	98.35	70	120	
In	115	H2	3135071	4.57	3158297	99.26	70	120	
In	115	He	230804	1.92	233876	98.69	70	120	
In	115	NoGas	5461311	0.53	5452775	100.16	70	120	
Tb	159	H2	6106488	4.62	6131794	99.59	70	120	
Tb	159	He	1277212	1.18	1276461	100.06	70	120	
Tb	159	NoGas	7118414	1.15	7146294	99.61	70	120	
Ho	165	H2	5731155	4.89	5782470	99.11	70	120	
Ho	165	He	1257782	1.31	1264936	99.43	70	120	
Ho	165	NoGas	6693189	1.34	6686360	100.10	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 3 05/19/16
Data File Name	008CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:43:45-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	383302	0.67	1.0000
B	11	45	NoGas	296337	1.35	1.0000
Na	23	45	He	449935	0.68	1.0000
Mg	24	45	He	375927	0.06	1.0000
Al	27	45	He	33762	1.83	1.0000
K	39	45	He	80982	0.44	1.0000
Ca	40	45	H2	7198251	1.79	1.0000
Ca (no)	44	45	He	12101	2.13	
Ti	47	45	He	2270	7.77	0.9999
V	51	45	He	128417	0.36	1.0000
Cr	52	45	He	180727	0.96	1.0000
Mn	55	45	He	55186	1.54	1.0000
Fe	56	45	He	2758609	0.67	1.0000
Co	59	45	He	372214	0.72	1.0000
Ni	60	45	He	115096	0.94	1.0000
Cu	63	45	He	334336	0.29	1.0000
Zn	66	115	He	35421	1.01	1.0000
As	75	115	He	20317	1.48	1.0000
Se	78	72	H2	24321	1.47	1.0000
Se	78	115	He	612	8.87	1.0000
Sr	88	115	NoGas	3687775	0.16	1.0000
Mo	95	115	NoGas	710522	0.95	1.0000
Ag	107	115	NoGas	922271	0.89	1.0000
Cd	111	115	He	47814	1.05	1.0000
Sn	118	115	He	69344	0.22	1.0000
Sn	118	115	NoGas	1053529	0.85	1.0000
Sb	121	115	NoGas	1703877	0.83	1.0000
Ba	137	165	NoGas	524873	1.85	1.0000
Tl	205	165	NoGas	2966792	0.49	1.0000
[Pb]	206	165	NoGas	937334	0.83	
[Pb]	207	165	NoGas	813896	1.54	
Pb	208	165	NoGas	3903526	1.25	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	228618	1.04	236257	96.77	70	120	
Sc	45	H2	486873	4.92	485596	100.26	70	120	
Sc	45	He	32464	1.40	32391	100.23	70	120	
Sc	45	NoGas	3463517	0.61	3469736	99.82	70	120	
Ge	72	H2	143806	5.17	144823	99.30	70	120	
Ge	72	He	31510	0.49	31735	99.29	70	120	
Ge	72	NoGas	836987	0.39	850290	98.44	70	120	
In	115	H2	3119776	4.49	3158297	98.78	70	120	
In	115	He	230277	1.58	233876	98.46	70	120	
In	115	NoGas	5387784	0.53	5452775	98.81	70	120	
Tb	159	H2	6210687	4.95	6131794	101.29	70	120	
Tb	159	He	1278711	1.48	1276461	100.18	70	120	
Tb	159	NoGas	7085156	1.02	7146294	99.14	70	120	
Ho	165	H2	5801845	4.53	5782470	100.34	70	120	
Ho	165	He	1261724	1.40	1264936	99.75	70	120	
Ho	165	NoGas	6695226	0.08	6686360	100.13	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 4 05/19/16
Data File Name	009CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:47:13-07:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	766289	1.33	1.0000
B	11	45	NoGas	542210	1.33	1.0000
Na	23	45	He	852548	0.35	1.0000
Mg	24	45	He	735082	0.21	1.0000
Al	27	45	He	64956	0.64	0.9999
K	39	45	He	150579	0.32	1.0000
Ca	40	45	H2	14064024	1.26	1.0000
Ca (no)	44	45	He	24174	1.39	
Ti	47	45	He	4627	5.45	0.9998
V	51	45	He	249841	0.46	1.0000
Cr	52	45	He	353443	0.85	1.0000
Mn	55	45	He	106642	0.51	1.0000
Fe	56	45	He	5317946	0.53	0.9999
Co	59	45	He	729852	0.73	1.0000
Ni	60	45	He	221930	1.18	0.9999
Cu	63	45	He	645104	0.55	1.0000
Zn	66	115	He	69452	1.09	1.0000
As	75	115	He	40196	0.99	1.0000
Se	78	72	H2	47766	1.85	1.0000
Se	78	115	He	1200	0.64	1.0000
Sr	88	115	NoGas	7248929	0.85	0.9999
Mo	95	115	NoGas	1475698	0.26	0.9999
Ag	107	115	NoGas	1931388	0.47	0.9998
Cd	111	115	He	93519	0.56	1.0000
Sn	118	115	He	134643	0.24	1.0000
Sn	118	115	NoGas	2172351	1.48	0.9999
Sb	121	115	NoGas	3325939	1.79	0.9999
Ba	137	165	NoGas	1034992	1.33	0.9999
Tl	205	165	NoGas	5710381	1.44	0.9997
[Pb]	206	165	NoGas	1989560	0.66	
[Pb]	207	165	NoGas	1747253	1.02	
Pb	208	165	NoGas	7912969	0.72	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	231871	0.48	236257	98.14	70	120	
Sc	45	H2	483272	4.25	485596	99.52	70	120	
Sc	45	He	32006	1.94	32391	98.81	70	120	
Sc	45	NoGas	3472503	0.51	3469736	100.08	70	120	
Ge	72	H2	142059	5.13	144823	98.09	70	120	
Ge	72	He	31208	2.24	31735	98.34	70	120	
Ge	72	NoGas	845501	0.65	850290	99.44	70	120	
In	115	H2	3092042	5.61	3158297	97.90	70	120	
In	115	He	227377	1.15	233876	97.22	70	120	
In	115	NoGas	5423764	0.47	5452775	99.47	70	120	
Tb	159	H2	6154720	5.08	6131794	100.37	70	120	
Tb	159	He	1286571	1.20	1276461	100.79	70	120	
Tb	159	NoGas	7148326	0.36	7146294	100.03	70	120	
Ho	165	H2	5717087	4.72	5782470	98.87	70	120	
Ho	165	He	1266269	1.14	1264936	100.11	70	120	
Ho	165	NoGas	6756924	0.26	6686360	101.06	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV 160519
Data File Name	010_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T15:50:33-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	105.195	1.408	806909	1.09	100	105.2	89.6	110.4	
B	11	45	NoGas	104.163	1.885	563181	1.20	100	104.2	89.6	110.4	
Na	23	45	He	2612.144	1.083	909130	0.80	2500	104.5	89.6	110.4	
Mg	24	45	He	2644.102	1.437	396281	1.81	2500	105.8	89.6	110.4	
Al	27	45	He	2649.877	1.499	87874	1.45	2500	106.0	89.6	110.4	
K	39	45	He	2638.676	2.160	200899	1.05	2500	105.5	89.6	110.4	
Ca	40	45	H2	2720.673	6.394	7809832	1.38	2500	108.8	89.6	110.4	
Ti	47	45	He	100.235	1.741	4686	2.43	100	100.2	89.6	110.4	
V	51	45	He	104.137	0.990	265432	0.59	100	104.1	89.6	110.4	
Cr	52	45	He	104.185	1.141	375178	1.02	100	104.2	89.6	110.4	
Mn	55	45	He	105.174	0.550	114568	0.80	100	105.2	89.6	110.4	
Fe	56	45	He	2630.623	1.442	7147161	0.37	2500	105.2	89.6	110.4	
Co	59	45	He	104.529	0.519	777115	0.88	100	104.5	89.6	110.4	
Ni	60	45	He	106.771	0.645	242153	0.73	100	106.8	89.6	110.4	
Cu	63	45	He	106.889	0.174	704273	1.19	100	106.9	89.6	110.4	
Zn	66	115	He	104.555	1.325	73950	0.88	100	104.6	89.6	110.4	
As	75	115	He	97.471	1.029	39950	1.35	100	97.5	89.6	110.4	
Se	78	72	H2	108.396	7.580	52254	1.95	100	108.4	89.6	110.4	
Se	78	115	He	104.905	1.463	1286	2.18	100	104.9	89.6	110.4	
Sr	88	115	NoGas	104.906	1.539	7702796	1.42	100	104.9	89.6	110.4	
Mo	95	115	NoGas	105.291	1.668	1556791	1.32	100	105.3	89.6	110.4	
Ag	107	115	NoGas	51.977	0.858	2008762	2.06	50	104.0	89.6	110.4	
Cd	111	115	He	103.195	0.141	98638	0.90	100	103.2	89.6	110.4	
Sn	118	115	He	53.648	0.271	74006	0.64	100	53.6	89.6	110.4	>+\- 10%
Sn	118	115	NoGas	51.271	1.697	1118594	0.75	100	51.3	89.6	110.4	>+\- 10%
Sb	121	115	NoGas	93.490	1.461	3154190	0.59	100	93.5	89.6	110.4	
Ba	137	165	NoGas	106.965	0.298	1113042	1.34	100	107.0	89.6	110.4	
Tl	205	165	NoGas	107.710	1.905	6214626	1.72	100	107.7	89.6	110.4	
Pb	208	165	NoGas	106.945	0.948	8459991	1.91	100	106.9	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	230824	1.79	236257	97.70	70	120	
Sc	45	H2	490645	5.09	485596	101.04	70	120	
Sc	45	He	32562	1.17	32391	100.53	70	120	
Sc	45	NoGas	3474373	1.19	3469736	100.13	70	120	
Ge	72	H2	143279	5.80	144823	98.93	70	120	
Ge	72	He	31435	1.10	31735	99.06	70	120	
Ge	72	NoGas	846574	1.16	850290	99.56	70	120	
In	115	H2	3131184	5.96	3158297	99.14	70	120	
In	115	He	231935	0.88	233876	99.17	70	120	
In	115	NoGas	5468618	1.77	5452775	100.29	70	120	
Tb	159	H2	6162012	4.80	6131794	100.49	70	120	
Tb	159	He	1292756	1.56	1276461	101.28	70	120	
Tb	159	NoGas	7160421	1.05	7146294	100.20	70	120	
Ho	165	H2	5820319	4.89	5782470	100.65	70	120	
Ho	165	He	1278477	1.57	1264936	101.07	70	120	
Ho	165	NoGas	6762016	1.48	6686360	101.13	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB 160519
Data File Name	019_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T16:32:54-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.019	-26.6	203	19.9	0.1	
B	11	45	NoGas	0.433	47.9	52129	0.8	8	
Na	23	45	He	6.216	41.2	20153	2.7	50	
Mg	24	45	He	0.243	49.5	171	13.0	20	
Al	27	45	He	3.223	50.1	319	18.3	10	
K	39	45	He	13.437	40.4	7173	2.6	40	
Ca	40	45	H2	2.320	37.1	61586	0.8	150	
Ti	47	45	He	0.026	287.5	3	100.1	0.5	
V	51	45	He	0.014	51.1	80	23.2	0.4	
Cr	52	45	He	0.002	669.0	460	10.7	0.2	
Mn	55	45	He	-0.002	-1200.6	98	18.8	0.3	
Fe	56	45	He	0.309	9.5	4384	4.0	30	
Co	59	45	He	0.003	132.2	130	17.9	0.4	
Ni	60	45	He	0.023	39.5	171	11.1	0.4	
Cu	63	45	He	0.040	43.1	1851	5.3	0.4	
Zn	66	115	He	-0.130	-14.0	800	2.3	15	
As	75	115	He	0.012	145.9	10	70.0	0.2	
Se	78	72	H2	0.011	53.2	10	26.6	0.4	
Se	78	115	He	-0.076	-318.8	2	173.2	0.4	
Sr	88	115	NoGas	0.015	4.3	5638	0.2	0.1	
Mo	95	115	NoGas	0.012	41.5	370	18.7	0.3	
Ag	107	115	NoGas	0.001	213.6	150	37.1	0.1	
Cd	111	115	He	0.009	73.4	15	39.8	0.1	
Sn	118	115	He	0.033	128.7	228	23.7	0.1	
Sn	118	115	NoGas	0.026	15.3	3379	3.1	0.1	
Sb	121	115	NoGas	0.020	60.3	2760	13.5	0.5	
Ba	137	165	NoGas	-0.004	-376.1	370	38.1	0.4	
Tl	205	165	NoGas	0.007	43.6	663	27.1	0.2	
Pb	208	165	NoGas	-0.026	-4.9	4484	2.2	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	226005	0.43	236257	95.66	70	120	
Sc	45	H2	482988	4.11	485596	99.46	70	120	
Sc	45	He	32057	2.95	32391	98.97	70	120	
Sc	45	NoGas	3420624	1.28	3469736	98.58	70	120	
Ge	72	H2	140812	4.42	144823	97.23	70	120	
Ge	72	He	31129	0.58	31735	98.09	70	120	
Ge	72	NoGas	832044	0.98	850290	97.85	70	120	
In	115	H2	3137737	4.69	3158297	99.35	70	120	
In	115	He	230036	1.73	233876	98.36	70	120	
In	115	NoGas	5331751	1.02	5452775	97.78	70	120	
Tb	159	H2	6201285	3.83	6131794	101.13	70	120	
Tb	159	He	1267259	1.26	1276461	99.28	70	120	
Tb	159	NoGas	6983404	0.66	7146294	97.72	70	120	
Ho	165	H2	5820581	4.67	5782470	100.66	70	120	
Ho	165	He	1255723	1.19	1264936	99.27	70	120	
Ho	165	NoGas	6631486	0.51	6686360	99.18	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA 160519
Data File Name	020ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T16:36:16-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.003	-200.4	320	11.3	0.1	
B	11	45	NoGas	1.044	22.8	53921	1.7	8	
Na	23	45	He	46371.335	0.3	15543988	0.3	60000	
Mg	24	45	He	43287.435	1.7	6367359	1.6	60000	
Al	27	45	He	45132.383	1.8	1466078	1.9	60000	
K	39	45	He	43318.960	1.2	3143166	1.3	60000	
Ca	40	45	H2	45123.276	5.4	123990653	0.9	60000	
Ti	47	45	He	915.264	0.9	41991	0.8	1200	
V	51	45	He	0.033	31.2	128	19.9	0.2	
Cr	52	45	He	0.452	2.9	2047	2.5	30	
Mn	55	45	He	1.917	2.5	2148	2.4	24	
Fe	56	45	He	44147.304	0.7	117715431	0.6	60000	
Co	59	45	He	0.101	11.9	844	10.5	5	
Ni	60	45	He	0.236	5.5	646	4.4	20	
Cu	63	45	He	0.401	9.7	4179	5.9	25	
Zn	66	115	He	0.673	12.8	1252	5.1	60	
As	75	115	He	0.198	10.7	79	10.7	0.4	
Se	78	72	H2	0.057	4.0	30	5.5	0.4	
Se	78	115	He	0.141	110.4	4	43.3	0.4	
Sr	88	115	NoGas	0.556	1.6	41657	1.0	5	
Mo	95	115	NoGas	920.398	1.2	12450211	0.3	1200	
Ag	107	115	NoGas	0.091	0.5	3320	0.5	5	
Cd	111	115	He	0.115	17.7	107	17.3	0.5	
Sn	118	115	He	0.281	14.0	523	9.0	5	
Sn	118	115	NoGas	0.242	2.6	7468	2.1	5	
Sb	121	115	NoGas	0.179	6.7	7502	4.0	5	
Ba	137	165	NoGas	0.367	8.3	4057	7.7	1.5	
Tl	205	165	NoGas	0.019	6.6	1313	5.1	0.2	
Pb	208	165	NoGas	0.267	0.0	26616	1.3	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	202453	0.51	236257	85.69	70	120	
Sc	45	H2	472587	4.41	485596	97.32	70	120	
Sc	45	He	31969	0.17	32391	98.70	70	120	
Sc	45	NoGas	3347931	1.38	3469736	96.49	70	120	
Ge	72	H2	133261	4.46	144823	92.02	70	120	
Ge	72	He	29755	1.60	31735	93.76	70	120	
Ge	72	NoGas	816760	0.34	850290	96.06	70	120	
In	115	H2	2879418	6.82	3158297	91.17	70	120	
In	115	He	212327	0.70	233876	90.79	70	120	
In	115	NoGas	5003385	0.97	5452775	91.76	70	120	
Tb	159	H2	5902356	4.09	6131794	96.26	70	120	
Tb	159	He	1231320	0.75	1276461	96.46	70	120	
Tb	159	NoGas	6862916	0.22	7146294	96.03	70	120	
Ho	165	H2	5560178	4.76	5782470	96.16	70	120	
Ho	165	He	1223576	1.19	1264936	96.73	70	120	
Ho	165	NoGas	6488671	1.28	6686360	97.04	70	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB 160519
Data File Name	021ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T16:39:33-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	45	NoGas	45.157	1.601	336077	1.18	50	90.3	80	120	
B	11	45	NoGas	0.892	33.396	53543	2.98	-8	-11.2	80	120	
Na	23	45	He	48160.319	0.841	16281675	0.13	50000	96.3	80	120	
Mg	24	45	He	44550.482	0.685	6609577	0.31	50000	89.1	80	120	
Al	27	45	He	45152.691	1.003	1479424	1.52	50000	90.3	80	120	
K	39	45	He	44909.728	0.263	3286501	0.86	50000	89.8	80	120	
Ca	40	45	H2	46038.756	4.809	127614186	1.16	50000	92.1	80	120	
Ti	47	45	He	920.582	1.607	42597	1.06	1000	92.1	80	120	
V	51	45	He	48.539	1.329	122542	1.05	50	97.1	80	120	
Cr	52	45	He	47.103	1.835	168214	1.36	50	94.2	80	120	
Mn	55	45	He	50.065	0.678	54059	0.87	50	100.1	80	120	
Fe	56	45	He	44854.794	1.041	120628769	0.28	50000	89.7	80	120	
Co	59	45	He	47.498	0.290	349750	0.55	50	95.0	80	120	
Ni	60	45	He	93.791	0.802	210667	1.11	100	93.8	80	120	
Cu	63	45	He	47.308	0.394	309555	0.52	50	94.6	80	120	
Zn	66	115	He	96.900	1.528	62732	0.67	100	96.9	80	120	
As	75	115	He	49.358	2.398	18498	0.56	50	98.7	80	120	
Se	78	72	H2	47.997	5.510	21682	1.39	50	96.0	80	120	
Se	78	115	He	47.928	10.786	539	11.48	50	95.9	80	120	
Sr	88	115	NoGas	0.567	1.245	42839	1.31	-5	-11.3	80	120	
Mo	95	115	NoGas	988.663	1.696	13510034	0.76	1050	94.2	80	120	
Ag	107	115	NoGas	87.119	1.316	3111670	0.97	100	87.1	80	120	
Cd	111	115	He	97.840	2.007	85507	0.52	100	97.8	80	120	
Sn	118	115	He	0.249	24.518	484	17.53	50	0.5	80	120	>+\- 20%
Sn	118	115	NoGas	0.244	3.520	7592	1.61	50	0.5	80	120	>+\- 20%
Sb	121	115	NoGas	48.272	1.283	1506408	0.73	50	96.5	80	120	
Ba	137	165	NoGas	48.423	0.842	490552	0.76	50	96.8	80	120	
Tl	205	165	NoGas	46.159	0.685	2592130	1.03	50	92.3	80	120	
Pb	208	165	NoGas	92.486	0.098	7120379	0.87	100	92.5	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	206474	0.63	236257	87.39	70	120	
Sc	45	H2	476558	3.95	485596	98.14	70	120	
Sc	45	He	32245	0.78	32391	99.55	70	120	
Sc	45	NoGas	3369074	1.14	3469736	97.10	70	120	
Ge	72	H2	134062	4.14	144823	92.57	70	120	
Ge	72	He	30806	1.93	31735	97.08	70	120	
Ge	72	NoGas	825533	0.07	850290	97.09	70	120	
In	115	H2	2891387	4.38	3158297	91.55	70	120	
In	115	He	212115	1.87	233876	90.70	70	120	
In	115	NoGas	5054551	0.93	5452775	92.70	70	120	
Tb	159	H2	6034549	4.90	6131794	98.41	70	120	
Tb	159	He	1218901	0.95	1276461	95.49	70	120	
Tb	159	NoGas	6907989	0.53	7146294	96.67	70	120	
Ho	165	H2	5680012	4.92	5782470	98.23	70	120	
Ho	165	He	1217490	1.32	1264936	96.25	70	120	
Ho	165	NoGas	6580337	0.79	6686360	98.41	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 160519
Data File Name	067_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:18:16-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	44.665	0.937	375128	0.83	50	89.3	89.6	110.4	>+/- 10%
B	11	45	NoGas	44.616	0.952	295769	0.57	50	89.2	89.6	110.4	>+/- 10%
Na	23	45	He	1267.634	4.094	465188	0.96	1250	101.4	89.6	110.4	
Mg	24	45	He	2450.669	3.745	379152	0.76	2500	98.0	89.6	110.4	
Al	27	45	He	937.050	3.407	32228	1.57	1000	93.7	89.6	110.4	
K	39	45	He	979.314	3.874	81074	0.90	1000	97.9	89.6	110.4	
Ca	40	45	H2	2673.506	6.876	7624897	2.32	2500	106.9	89.6	110.4	
Ti	47	45	He	45.789	2.702	2212	3.62	50	91.6	89.6	110.4	
V	51	45	He	48.567	3.675	127821	0.80	50	97.1	89.6	110.4	
Cr	52	45	He	48.263	3.352	179682	0.37	50	96.5	89.6	110.4	
Mn	55	45	He	48.286	3.303	54359	0.79	50	96.6	89.6	110.4	
Fe	56	45	He	988.388	3.150	2775026	1.00	1000	98.8	89.6	110.4	
Co	59	45	He	48.408	3.362	371601	0.57	50	96.8	89.6	110.4	
Ni	60	45	He	48.072	3.520	112623	0.92	50	96.1	89.6	110.4	
Cu	63	45	He	48.352	2.766	329840	0.23	50	96.7	89.6	110.4	
Zn	66	115	He	47.755	0.424	35305	1.41	50	95.5	89.6	110.4	
As	75	115	He	46.867	1.887	19791	0.92	50	93.7	89.6	110.4	
Se	78	72	H2	51.575	7.375	24611	2.36	50	103.2	89.6	110.4	
Se	78	115	He	47.228	3.473	598	2.28	50	94.5	89.6	110.4	
Sr	88	115	NoGas	46.393	1.578	3706989	0.76	50	92.8	89.6	110.4	
Mo	95	115	NoGas	44.439	0.422	714659	0.46	50	88.9	89.6	110.4	>+/- 10%
Ag	107	115	NoGas	21.851	0.849	918262	0.01	25	87.4	89.6	110.4	>+/- 10%
Cd	111	115	He	47.277	1.062	46559	0.24	50	94.6	89.6	110.4	
Sn	118	115	He	48.036	1.928	68284	0.77	50	96.1	89.6	110.4	
Sn	118	115	NoGas	44.654	0.427	1059908	0.55	50	89.3	89.6	110.4	>+/- 10%
Sb	121	115	NoGas	48.991	1.092	1798582	0.79	50	98.0	89.6	110.4	
Ba	137	165	NoGas	46.286	0.837	536195	0.09	50	92.6	89.6	110.4	
Tl	205	165	NoGas	47.335	1.081	3039415	0.33	50	94.7	89.6	110.4	
Pb	208	165	NoGas	45.163	0.346	3979718	0.83	50	90.3	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	249333	0.27	236257	105.53	70	120	
Sc	45	H2	487392	4.68	485596	100.37	70	120	
Sc	45	He	33637	2.95	32391	103.85	70	120	
Sc	45	NoGas	3801674	0.21	3469736	109.57	70	120	
Ge	72	H2	141771	5.37	144823	97.89	70	120	
Ge	72	He	33003	1.05	31735	104.00	70	120	
Ge	72	NoGas	905583	0.57	850290	106.50	70	120	
In	115	H2	3189197	3.06	3158297	100.98	70	120	
In	115	He	238967	1.30	233876	102.18	70	120	
In	115	NoGas	5946315	0.84	5452775	109.05	70	120	
Tb	159	H2	6434569	4.73	6131794	104.94	70	120	
Tb	159	He	1327770	1.11	1276461	104.02	70	120	
Tb	159	NoGas	7901007	0.90	7146294	110.56	70	120	
Ho	165	H2	6023247	5.08	5782470	104.16	70	120	
Ho	165	He	1308483	1.22	1264936	103.44	70	120	
Ho	165	NoGas	7524609	0.81	6686360	112.54	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 160519
Data File Name	069_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T19:25:03-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.032	-12.2	117	27.6	0.1	
B	11	45	NoGas	0.579	59.8	56723	1.5	8	
Na	23	45	He	28.326	13.7	27788	1.4	50	
Mg	24	45	He	0.333	23.4	186	7.5	20	
Al	27	45	He	0.388	420.5	227	20.6	10	
K	39	45	He	10.957	49.3	7049	2.1	40	
Ca	40	45	H2	1.705	46.3	58001	1.7	150	
Ti	47	45	He	-0.024	-175.2	1	173.2	0.5	
V	51	45	He	0.010	53.3	71	16.5	0.4	
Cr	52	45	He	-0.010	-106.1	422	12.3	0.2	
Mn	55	45	He	-0.005	-607.9	94	33.4	0.3	
Fe	56	45	He	0.111	54.4	3882	1.2	30	
Co	59	45	He	-0.002	-188.2	96	34.9	0.4	
Ni	60	45	He	0.005	117.0	132	10.2	0.4	
Cu	63	45	He	0.005	553.8	1639	10.0	0.4	
Zn	66	115	He	0.104	41.8	966	2.7	15	
As	75	115	He	0.022	31.5	14	17.6	0.2	
Se	78	72	H2	0.021	56.6	14	32.3	0.4	
Se	78	115	He	0.083	143.5	4	41.7	0.4	
Sr	88	115	NoGas	-0.001	-238.4	4911	2.9	0.1	
Mo	95	115	NoGas	0.043	34.9	880	26.6	0.3	
Ag	107	115	NoGas	0.003	19.8	240	8.3	0.1	
Cd	111	115	He	0.006	75.8	13	34.6	0.1	
Sn	118	115	He	0.035	87.6	232	16.8	0.1	
Sn	118	115	NoGas	0.033	25.6	3835	5.2	0.1	
Sb	121	115	NoGas	0.165	6.2	8189	5.3	0.5	
Ba	137	165	NoGas	-0.005	-35.9	380	5.3	0.4	
Tl	205	165	NoGas	0.019	5.6	1447	3.9	0.2	
Pb	208	165	NoGas	-0.043	-2.4	3384	2.2	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	244118	1.02	236257	103.33	70	120	
Sc	45	H2	468139	5.40	485596	96.41	70	120	
Sc	45	He	32327	3.93	32391	99.80	70	120	
Sc	45	NoGas	3673238	2.28	3469736	105.87	70	120	
Ge	72	H2	135920	5.69	144823	93.85	70	120	
Ge	72	He	31445	1.81	31735	99.09	70	120	
Ge	72	NoGas	882261	0.14	850290	103.76	70	120	
In	115	H2	3140291	6.05	3158297	99.43	70	120	
In	115	He	230843	2.40	233876	98.70	70	120	
In	115	NoGas	5803041	0.93	5452775	106.42	70	120	
Tb	159	H2	6135656	5.30	6131794	100.06	70	120	
Tb	159	He	1264191	2.18	1276461	99.04	70	120	
Tb	159	NoGas	7654438	1.70	7146294	107.11	70	120	
Ho	165	H2	5830865	5.04	5782470	100.84	70	120	
Ho	165	He	1255525	1.69	1264936	99.26	70	120	
Ho	165	NoGas	7138297	0.70	6686360	106.76	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 160519
Data File Name	087_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:26:18-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	44.760	0.139	371050	0.45	50	89.5	89.6	110.4	>+/- 10%
B	11	45	NoGas	46.169	0.134	300185	0.46	50	92.3	89.6	110.4	
Na	23	45	He	1333.607	2.325	489990	0.31	1250	106.7	89.6	110.4	
Mg	24	45	He	2448.711	2.043	380069	0.08	2500	97.9	89.6	110.4	
Al	27	45	He	980.910	3.113	33825	1.22	1000	98.1	89.6	110.4	
K	39	45	He	982.326	1.848	81565	0.53	1000	98.2	89.6	110.4	
Ca	40	45	H2	2679.735	5.087	7665606	1.36	2500	107.2	89.6	110.4	
Tl	47	45	He	48.803	5.460	2365	5.95	50	97.6	89.6	110.4	
V	51	45	He	49.200	1.798	129904	0.19	50	98.4	89.6	110.4	
Cr	52	45	He	48.864	1.791	182493	0.37	50	97.7	89.6	110.4	
Mn	55	45	He	49.264	2.621	55627	0.64	50	98.5	89.6	110.4	
Fe	56	45	He	985.016	2.145	2774086	0.77	1000	98.5	89.6	110.4	
Co	59	45	He	48.760	1.315	375511	0.66	50	97.5	89.6	110.4	
Ni	60	45	He	48.147	2.020	113157	0.38	50	96.3	89.6	110.4	
Cu	63	45	He	48.259	1.200	330245	0.80	50	96.5	89.6	110.4	
Zn	66	115	He	48.602	1.360	35517	1.54	50	97.2	89.6	110.4	
As	75	115	He	48.218	1.647	20137	0.50	50	96.4	89.6	110.4	
Se	78	72	H2	51.619	6.151	24535	2.28	50	103.2	89.6	110.4	
Se	78	115	He	50.309	0.987	630	2.23	50	100.6	89.6	110.4	
Sr	88	115	NoGas	47.391	1.082	3740109	1.44	50	94.8	89.6	110.4	
Mo	95	115	NoGas	44.950	1.329	713936	1.30	50	89.9	89.6	110.4	
Ag	107	115	NoGas	22.344	0.575	927423	0.86	25	89.4	89.6	110.4	>+/- 10%
Cd	111	115	He	48.275	1.678	47016	1.18	50	96.6	89.6	110.4	
Sn	118	115	He	49.079	1.293	68997	0.82	50	98.2	89.6	110.4	
Sn	118	115	NoGas	45.545	0.269	1067621	0.45	50	91.1	89.6	110.4	
Sb	121	115	NoGas	48.258	0.373	1749854	0.79	50	96.5	89.6	110.4	
Ba	137	165	NoGas	47.991	0.512	540325	0.13	50	96.0	89.6	110.4	
Tl	205	165	NoGas	48.486	0.875	3025951	0.98	50	97.0	89.6	110.4	
Pb	208	165	NoGas	46.131	1.157	3950514	0.95	50	92.3	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	249775	1.44	236257	105.72	70	120	
Sc	45	H2	488438	3.65	485596	100.59	70	120	
Sc	45	He	33730	1.95	32391	104.13	70	120	
Sc	45	NoGas	3752371	0.45	3469736	108.15	70	120	
Ge	72	H2	141072	3.89	144823	97.41	70	120	
Ge	72	He	32625	1.91	31735	102.81	70	120	
Ge	72	NoGas	902243	1.03	850290	106.11	70	120	
In	115	H2	3165136	3.47	3158297	100.22	70	120	
In	115	He	236328	1.32	233876	101.05	70	120	
In	115	NoGas	5872708	0.47	5452775	107.70	70	120	
Tb	159	H2	6240282	3.91	6131794	101.77	70	120	
Tb	159	He	1308580	1.36	1276461	102.52	70	120	
Tb	159	NoGas	7830679	0.77	7146294	109.58	70	120	
Ho	165	H2	5910510	3.64	5782470	102.21	70	120	
Ho	165	He	1300169	1.51	1264936	102.79	70	120	
Ho	165	NoGas	7313093	0.39	6686360	109.37	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 160519
Data File Name	089_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T20:33:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.033	-21.1	103	55.9	0.1	
B	11	45	NoGas	1.612	2.5	62504	0.8	8	
Na	23	45	He	67.116	1.0	42492	1.5	50	>LOD
Mg	24	45	He	0.368	68.1	198	19.2	20	
Al	27	45	He	-0.166	-629.9	218	16.9	10	
K	39	45	He	5.049	78.9	6872	3.0	40	
Ca	40	45	H2	1.403	55.3	58349	1.1	150	
Ti	47	45	He	-0.003	-3053.0	2	173.2	0.5	
V	51	45	He	-0.001	-535.3	46	29.6	0.4	
Cr	52	45	He	-0.023	-7.1	390	2.3	0.2	
Mn	55	45	He	0.022	44.9	129	9.1	0.3	
Fe	56	45	He	0.011	266.4	3753	2.4	30	
Co	59	45	He	-0.003	-141.7	92	33.6	0.4	
Ni	60	45	He	0.025	33.2	182	9.2	0.4	
Cu	63	45	He	-0.007	-203.8	1620	7.7	0.4	
Zn	66	115	He	-0.050	-184.0	883	7.5	15	
As	75	115	He	0.012	93.3	10	44.7	0.2	
Se	78	72	H2	0.018	15.7	13	6.4	0.4	
Se	78	115	He	-0.029	-655.0	2	99.0	0.4	
Sr	88	115	NoGas	0.003	63.0	5331	3.6	0.1	
Mo	95	115	NoGas	0.037	15.4	803	11.2	0.3	
Ag	107	115	NoGas	0.001	71.8	197	21.2	0.1	
Cd	111	115	He	0.012	53.6	19	30.9	0.1	
Sn	118	115	He	0.045	37.5	253	10.4	0.1	
Sn	118	115	NoGas	0.027	3.8	3764	1.3	0.1	
Sb	121	115	NoGas	0.078	1.2	5181	1.2	0.5	
Ba	137	165	NoGas	-0.003	-166.8	410	14.8	0.4	
Tl	205	165	NoGas	0.018	12.1	1380	9.3	0.2	
Pb	208	165	NoGas	-0.052	-6.6	2687	11.0	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	245405	0.65	236257	103.87	70	120	
Sc	45	H2	477624	4.71	485596	98.36	70	120	
Sc	45	He	33542	1.70	32391	103.55	70	120	
Sc	45	NoGas	3696010	0.68	3469736	106.52	70	120	
Ge	72	H2	137311	3.35	144823	94.81	70	120	
Ge	72	He	32211	1.49	31735	101.50	70	120	
Ge	72	NoGas	897025	1.12	850290	105.50	70	120	
In	115	H2	3163239	4.36	3158297	100.16	70	120	
In	115	He	237380	1.95	233876	101.50	70	120	
In	115	NoGas	5915130	0.68	5452775	108.48	70	120	
Tb	159	H2	6215178	5.73	6131794	101.36	70	120	
Tb	159	He	1298259	1.66	1276461	101.71	70	120	
Tb	159	NoGas	7678284	0.05	7146294	107.44	70	120	
Ho	165	H2	5851266	4.54	5782470	101.19	70	120	
Ho	165	He	1296382	2.04	1264936	102.49	70	120	
Ho	165	NoGas	7268435	0.38	6686360	108.71	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 160519
Data File Name	103_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T21:20:15-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	45	NoGas	44.117	12.341	349552	0.58	50	88.2	89.6	110.4	>+/- 10%
B	11	45	NoGas	44.419	12.417	278546	1.85	50	88.8	89.6	110.4	>+/- 10%
Na	23	45	He	1261.433	1.417	478737	0.54	1250	100.9	89.6	110.4	
Mg	24	45	He	2377.184	0.723	380283	0.19	2500	95.1	89.6	110.4	
Al	27	45	He	934.367	2.214	33221	1.44	1000	93.4	89.6	110.4	
K	39	45	He	971.098	2.200	83171	1.12	1000	97.1	89.6	110.4	
Ca	40	45	H2	2607.970	5.891	7573525	1.20	2500	104.3	89.6	110.4	
Ti	47	45	He	46.623	7.235	2327	6.38	50	93.2	89.6	110.4	
V	51	45	He	47.241	1.513	128549	0.71	50	94.5	89.6	110.4	
Cr	52	45	He	47.087	0.950	181256	0.25	50	94.2	89.6	110.4	
Mn	55	45	He	47.507	0.873	55295	0.41	50	95.0	89.6	110.4	
Fe	56	45	He	955.102	0.866	2772410	0.50	1000	95.5	89.6	110.4	
Co	59	45	He	47.307	0.950	375451	0.25	50	94.6	89.6	110.4	
Ni	60	45	He	47.115	1.285	114125	0.94	50	94.2	89.6	110.4	
Cu	63	45	He	46.763	0.781	329840	0.72	50	93.5	89.6	110.4	
Zn	66	115	He	48.437	1.843	36086	1.05	50	96.9	89.6	110.4	
As	75	115	He	47.696	1.901	20307	0.32	50	95.4	89.6	110.4	
Se	78	72	H2	50.852	8.292	24718	2.12	50	101.7	89.6	110.4	
Se	78	115	He	49.086	4.916	626	2.99	50	98.2	89.6	110.4	
Sr	88	115	NoGas	48.640	12.379	3620014	1.10	50	97.3	89.6	110.4	
Mo	95	115	NoGas	46.086	13.248	689756	0.57	50	92.2	89.6	110.4	
Ag	107	115	NoGas	22.728	13.077	889058	1.17	25	90.9	89.6	110.4	
Cd	111	115	He	47.179	2.116	46840	0.77	50	94.4	89.6	110.4	
Sn	118	115	He	48.164	2.854	69023	1.66	50	96.3	89.6	110.4	
Sn	118	115	NoGas	46.429	12.773	1025992	0.86	50	92.9	89.6	110.4	
Sb	121	115	NoGas	49.647	12.077	1698198	0.99	50	99.3	89.6	110.4	
Ba	137	165	NoGas	48.758	13.277	515980	1.04	50	97.5	89.6	110.4	
Tl	205	165	NoGas	48.829	13.491	2863685	0.97	50	97.7	89.6	110.4	
Pb	208	165	NoGas	46.593	12.747	3752312	1.14	50	93.2	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	228233	11.45	236257	96.60	70	120	
Sc	45	H2	496055	4.74	485596	102.15	70	120	
Sc	45	He	34756	0.89	32391	107.30	70	120	
Sc	45	NoGas	3623109	12.35	3469736	104.42	70	120	
Ge	72	H2	144524	6.13	144823	99.79	70	120	
Ge	72	He	32955	1.31	31735	103.84	70	120	
Ge	72	NoGas	864202	13.19	850290	101.64	70	120	
In	115	H2	3194377	4.02	3158297	101.14	70	120	
In	115	He	240950	1.97	233876	103.02	70	120	
In	115	NoGas	5601936	13.75	5452775	102.74	70	120	
Tb	159	H2	6317319	4.29	6131794	103.03	70	120	
Tb	159	He	1323029	1.56	1276461	103.65	70	120	
Tb	159	NoGas	7471107	13.93	7146294	104.55	70	120	
Ho	165	H2	5919857	4.72	5782470	102.38	70	120	
Ho	165	He	1311713	1.20	1264936	103.70	70	120	
Ho	165	NoGas	6958638	13.79	6686360	104.07	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 160519
Data File Name	105_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Acq Date Time	2016-05-19T21:26:57-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	45	NoGas	-0.037	-15.7	73	67.3	0.1	
B	11	45	NoGas	0.677	23.7	59310	1.4	8	
Na	23	45	He	52.002	2.7	37493	1.6	50	>LOD
Mg	24	45	He	0.106	247.1	159	25.6	20	
Al	27	45	He	-0.018	-3925.9	224	10.4	10	
K	39	45	He	11.192	39.1	7402	3.8	40	
Ca	40	45	H2	1.766	47.3	59386	1.0	150	
Ti	47	45	He	0.068	213.9	6	124.9	0.5	
V	51	45	He	0.000	-1877.5	48	24.5	0.4	
Cr	52	45	He	-0.013	-68.7	428	8.8	0.2	
Mn	55	45	He	-0.016	-148.7	87	30.8	0.3	
Fe	56	45	He	0.008	400.9	3776	2.4	30	
Co	59	45	He	0.000	21811.9	117	28.1	0.4	
Ni	60	45	He	0.013	64.5	158	12.9	0.4	
Cu	63	45	He	0.006	135.6	1722	1.7	0.4	
Zn	66	115	He	0.032	335.2	959	7.5	15	
As	75	115	He	0.019	35.9	14	22.4	0.2	
Se	78	72	H2	0.018	12.3	13	11.2	0.4	
Se	78	115	He	-0.165	-54.4	1	173.2	0.4	
Sr	88	115	NoGas	0.000	602.0	5171	3.3	0.1	
Mo	95	115	NoGas	0.046	15.2	970	11.7	0.3	
Ag	107	115	NoGas	0.004	13.1	297	7.0	0.1	
Cd	111	115	He	0.008	132.4	15	66.9	0.1	
Sn	118	115	He	0.028	125.8	233	20.8	0.1	
Sn	118	115	NoGas	0.033	25.8	3947	5.1	0.1	
Sb	121	115	NoGas	0.204	1.5	9907	1.1	0.5	
Ba	137	165	NoGas	-0.004	-150.9	407	17.8	0.4	
Tl	205	165	NoGas	0.019	26.9	1510	21.2	0.2	
Pb	208	165	NoGas	-0.047	-6.0	3150	7.5	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	243779	1.29	236257	103.18	70	120	
Sc	45	H2	477910	4.88	485596	98.42	70	120	
Sc	45	He	33822	1.68	32391	104.42	70	120	
Sc	45	NoGas	3804886	0.68	3469736	109.66	70	120	
Ge	72	H2	137809	5.54	144823	95.16	70	120	
Ge	72	He	32808	0.94	31735	103.38	70	120	
Ge	72	NoGas	916359	0.19	850290	107.77	70	120	
In	115	H2	3140573	5.93	3158297	99.44	70	120	
In	115	He	241888	1.00	233876	103.43	70	120	
In	115	NoGas	5982035	0.07	5452775	109.71	70	120	
Tb	159	H2	6222184	4.92	6131794	101.47	70	120	
Tb	159	He	1314978	0.83	1276461	103.02	70	120	
Tb	159	NoGas	7872431	0.46	7146294	110.16	70	120	
Ho	165	H2	5887153	5.40	5782470	101.81	70	120	
Ho	165	He	1300064	1.19	1264936	102.78	70	120	
Ho	165	NoGas	7394790	0.80	6686360	110.60	70	120	

Calibration Blank Report

Sample Table

Sample Name	Calibration Blank 05/20/16
Data File Name	006CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T08:58:46-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD
Be	9	6	NoGas	127	16.43
B	11	45	NoGas	39776	0.68
Na	23	45	He	25071	1.35
Mg	24	45	He	108	12.88
Al	27	45	He	198	1.94
K	39	45	He	5471	5.42
Ca	40	45	H2	78096	1.63
Ca (no)	44	45	He	117	29.00
Ti	47	45	He	1	173.21
V	51	45	He	62	35.67
Cr	52	45	He	583	8.93
Mn	55	45	He	58	33.81
Fe	56	45	He	2588	9.25
Co	59	45	He	43	33.52
Ni	60	45	He	210	24.95
Cu	63	45	He	2450	3.27
Zn	66	115	He	1047	2.23
As	75	115	He	5	21.65
Se	78	72	H2	7	24.74
Se	78	115	He	0	173.21
Sr	88	115	NoGas	5698	2.84
Mo	95	115	NoGas	130	60.08
Ag	107	115	NoGas	53	57.28
Cd	111	115	He	11	20.38
Sn	118	115	He	299	2.81
Sn	118	115	NoGas	3854	2.99
Sb	121	115	NoGas	2510	8.52
Ba	137	165	NoGas	247	30.43
Tl	205	165	NoGas	217	17.48
[Pb]	206	165	NoGas	1123	12.91
[Pb]	207	165	NoGas	1180	9.77
Pb	208	165	NoGas	5017	4.99

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	NoGas	115259	0.48
Sc	45	H2	497539	3.68
Sc	45	He	29688	2.77
Sc	45	NoGas	3567710	0.87
Ge	72	H2	154208	3.77
Ge	72	He	30282	2.25
Ge	72	NoGas	872567	0.96
In	115	H2	3044907	4.19
In	115	He	224982	2.32
In	115	NoGas	5525169	0.27
Tb	159	H2	5558678	4.55
Tb	159	He	1315002	1.82
Tb	159	NoGas	7249592	1.36
Ho	165	H2	5171419	5.19
Ho	165	He	1293090	1.99
Ho	165	NoGas	6788564	1.03

Calibration Standard Report

Sample Table

Sample Name	Standard 1 05/20/16
Data File Name	007CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:02:17-07:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	6	NoGas	543	12.25	1.0000
B	11	45	NoGas	41086	2.52	0.9997
Na	23	45	He	24468	1.90	0.9999
Mg	24	45	He	736	7.11	0.9999
Al	27	45	He	286	14.12	0.9999
K	39	45	He	5311	2.58	0.9999
Ca	40	45	H2	90886	0.52	0.9997
Ca (no)	44	45	He	133	13.23	
Ti	47	45	He	2	173.21	1.0000
V	51	45	He	317	16.94	0.9999
Cr	52	45	He	912	10.70	0.9998
Mn	55	45	He	144	35.48	0.9999
Fe	56	45	He	7652	1.07	0.9996
Co	59	45	He	800	11.92	0.9999
Ni	60	45	He	426	9.08	0.9998
Cu	63	45	He	3016	4.45	0.9998
Zn	66	115	He	1128	6.23	0.9999
As	75	115	He	40	19.26	1.0000
Se	78	72	H2	52	12.29	0.9999
Se	78	115	He	3	88.19	1.0000
Sr	88	115	NoGas	12341	3.94	1.0000
Mo	95	115	NoGas	1537	8.67	0.9999
Ag	107	115	NoGas	1790	12.10	0.9999
Cd	111	115	He	88	15.91	1.0000
Sn	118	115	He	364	10.03	1.0000
Sn	118	115	NoGas	5984	1.61	0.9999
Sb	121	115	NoGas	5441	3.14	0.9999
Ba	137	165	NoGas	1323	0.44	1.0000
Tl	205	165	NoGas	5845	0.43	0.9998
[Pb]	206	165	NoGas	2810	0.94	
[Pb]	207	165	NoGas	2580	4.57	
Pb	208	165	NoGas	11739	3.43	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	116149	1.46	115259	100.77	70	120	
Sc	45	H2	505207	4.22	497539	101.54	70	120	
Sc	45	He	29750	1.13	29688	100.21	70	120	
Sc	45	NoGas	3527242	0.66	3567710	98.87	70	120	
Ge	72	H2	156581	4.95	154208	101.54	70	120	
Ge	72	He	29748	2.74	30282	98.24	70	120	
Ge	72	NoGas	868568	0.37	872567	99.54	70	120	
In	115	H2	3058692	4.72	3044907	100.45	70	120	
In	115	He	225286	2.06	224982	100.14	70	120	
In	115	NoGas	5522041	0.70	5525169	99.94	70	120	
Tb	159	H2	5602554	5.03	5558678	100.79	70	120	
Tb	159	He	1328338	2.04	1315002	101.01	70	120	
Tb	159	NoGas	7270480	1.20	7249592	100.29	70	120	
Ho	165	H2	5247981	3.63	5171419	101.48	70	120	
Ho	165	He	1299204	1.31	1293090	100.47	70	120	
Ho	165	NoGas	6790152	0.87	6788564	100.02	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 2 05/20/16
Data File Name	008CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:05:39-07:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	6	NoGas	4554	3.63	1.0000
B	11	45	NoGas	43066	1.60	0.9997
Na	23	45	He	30604	0.43	0.9999
Mg	24	45	He	6200	1.33	0.9999
Al	27	45	He	739	8.47	0.9999
K	39	45	He	6819	5.30	0.9999
Ca	40	45	H2	240321	1.43	0.9997
Ca (no)	44	45	He	308	3.80	
Ti	47	45	He	37	56.77	1.0000
V	51	45	He	2269	5.73	0.9999
Cr	52	45	He	3724	2.78	0.9998
Mn	55	45	He	1012	4.89	0.9999
Fe	56	45	He	49161	1.08	0.9996
Co	59	45	He	6746	0.29	0.9999
Ni	60	45	He	2378	0.35	0.9998
Cu	63	45	He	8533	3.58	0.9998
Zn	66	115	He	1675	5.58	0.9999
As	75	115	He	362	4.25	1.0000
Se	78	72	H2	508	2.02	0.9999
Se	78	115	He	14	12.37	1.0000
Sr	88	115	NoGas	70584	2.63	1.0000
Mo	95	115	NoGas	13616	6.21	0.9999
Ag	107	115	NoGas	18003	0.90	0.9999
Cd	111	115	He	885	1.73	1.0000
Sn	118	115	He	1406	5.59	1.0000
Sn	118	115	NoGas	23565	3.11	0.9999
Sb	121	115	NoGas	30842	0.32	0.9999
Ba	137	165	NoGas	10320	1.31	1.0000
Tl	205	165	NoGas	53255	0.40	0.9998
[Pb]	206	165	NoGas	19452	0.76	
[Pb]	207	165	NoGas	17153	6.81	
Pb	208	165	NoGas	77946	1.61	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	114774	0.65	115259	99.58	70	120	
Sc	45	H2	504032	4.20	497539	101.31	70	120	
Sc	45	He	29407	3.10	29688	99.05	70	120	
Sc	45	NoGas	3514677	1.27	3567710	98.51	70	120	
Ge	72	H2	155195	3.46	154208	100.64	70	120	
Ge	72	He	30228	2.33	30282	99.82	70	120	
Ge	72	NoGas	871019	0.56	872567	99.82	70	120	
In	115	H2	3064004	3.53	3044907	100.63	70	120	
In	115	He	224528	2.42	224982	99.80	70	120	
In	115	NoGas	5504769	0.68	5525169	99.63	70	120	
Tb	159	H2	5587094	3.59	5558678	100.51	70	120	
Tb	159	He	1321215	2.09	1315002	100.47	70	120	
Tb	159	NoGas	7303683	0.23	7249592	100.75	70	120	
Ho	165	H2	5240017	4.32	5171419	101.33	70	120	
Ho	165	He	1301875	2.33	1293090	100.68	70	120	
Ho	165	NoGas	6864188	0.82	6788564	101.11	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 3 05/20/16
Data File Name	009CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:09:03-07:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	6	NoGas	229326	0.61	1.0000
B	11	45	NoGas	194827	0.74	0.9997
Na	23	45	He	375012	0.32	0.9999
Mg	24	45	He	311659	0.87	0.9999
Al	27	45	He	27164	1.46	0.9999
K	39	45	He	65793	0.93	0.9999
Ca	40	45	H2	8144743	3.48	0.9997
Ca (no)	44	45	He	10970	0.90	
Ti	47	45	He	2015	3.08	1.0000
V	51	45	He	112349	0.12	0.9999
Cr	52	45	He	162856	0.42	0.9998
Mn	55	45	He	47955	0.25	0.9999
Fe	56	45	He	2464427	1.37	0.9996
Co	59	45	He	339992	0.51	0.9999
Ni	60	45	He	105442	0.90	0.9998
Cu	63	45	He	309236	0.60	0.9998
Zn	66	115	He	32721	0.64	0.9999
As	75	115	He	18309	0.10	1.0000
Se	78	72	H2	25149	1.96	0.9999
Se	78	115	He	524	3.79	1.0000
Sr	88	115	NoGas	3358441	0.66	1.0000
Mo	95	115	NoGas	687798	0.41	0.9999
Ag	107	115	NoGas	893523	0.63	0.9999
Cd	111	115	He	44175	1.11	1.0000
Sn	118	115	He	64770	0.21	1.0000
Sn	118	115	NoGas	1018701	0.61	0.9999
Sb	121	115	NoGas	1491570	0.29	0.9999
Ba	137	165	NoGas	502074	0.75	1.0000
Tl	205	165	NoGas	2791174	1.43	0.9998
[Pb]	206	165	NoGas	918489	0.69	
[Pb]	207	165	NoGas	800072	0.69	
Pb	208	165	NoGas	3719482	0.98	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	114960	1.15	115259	99.74	70	120	
Sc	45	H2	497518	4.50	497539	100.00	70	120	
Sc	45	He	30140	2.61	29688	101.52	70	120	
Sc	45	NoGas	3636306	1.39	3567710	101.92	70	120	
Ge	72	H2	153478	4.63	154208	99.53	70	120	
Ge	72	He	30500	1.81	30282	100.72	70	120	
Ge	72	NoGas	874396	0.53	872567	100.21	70	120	
In	115	H2	3016790	5.95	3044907	99.08	70	120	
In	115	He	230109	1.50	224982	102.28	70	120	
In	115	NoGas	5562579	0.84	5525169	100.68	70	120	
Tb	159	H2	5596951	4.55	5558678	100.69	70	120	
Tb	159	He	1354057	2.08	1315002	102.97	70	120	
Tb	159	NoGas	7398528	0.85	7249592	102.05	70	120	
Ho	165	H2	5208007	5.16	5171419	100.71	70	120	
Ho	165	He	1333325	2.33	1293090	103.11	70	120	
Ho	165	NoGas	6916746	0.13	6788564	101.89	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 4 05/20/16
Data File Name	010CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:12:28-07:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	6	NoGas	462231	1.06	1.0000
B	11	45	NoGas	350689	1.06	0.9997
Na	23	45	He	702590	1.06	0.9999
Mg	24	45	He	605605	0.37	0.9999
Al	27	45	He	52594	0.39	0.9999
K	39	45	He	122421	0.58	0.9999
Ca	40	45	H2	15658118	0.23	0.9997
Ca (no)	44	45	He	20646	0.11	
Ti	47	45	He	3976	4.20	1.0000
V	51	45	He	218658	0.32	0.9999
Cr	52	45	He	313340	0.73	0.9998
Mn	55	45	He	92707	0.57	0.9999
Fe	56	45	He	4651558	0.86	0.9996
Co	59	45	He	659180	0.50	0.9999
Ni	60	45	He	202132	0.28	0.9998
Cu	63	45	He	593442	0.22	0.9998
Zn	66	115	He	61639	1.04	0.9999
As	75	115	He	35740	1.01	1.0000
Se	78	72	H2	49780	2.11	0.9999
Se	78	115	He	1033	1.74	1.0000
Sr	88	115	NoGas	6513149	1.35	1.0000
Mo	95	115	NoGas	1357799	3.47	0.9999
Ag	107	115	NoGas	1767671	1.08	0.9999
Cd	111	115	He	85991	1.15	1.0000
Sn	118	115	He	126421	0.76	1.0000
Sn	118	115	NoGas	2030963	1.16	0.9999
Sb	121	115	NoGas	2968223	0.34	0.9999
Ba	137	165	NoGas	975138	0.79	1.0000
Tl	205	165	NoGas	5303889	0.88	0.9998
[Pb]	206	165	NoGas	1826986	0.88	
[Pb]	207	165	NoGas	1605435	1.29	
Pb	208	165	NoGas	7218408	0.52	1.0000

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	117906	1.13	115259	102.30	70	120	
Sc	45	H2	505444	3.06	497539	101.59	70	120	
Sc	45	He	30114	0.41	29688	101.43	70	120	
Sc	45	NoGas	3500228	2.24	3567710	98.11	70	120	
Ge	72	H2	154996	3.44	154208	100.51	70	120	
Ge	72	He	30263	2.46	30282	99.94	70	120	
Ge	72	NoGas	864924	0.66	872567	99.12	70	120	
In	115	H2	3032610	1.01	3044907	99.60	70	120	
In	115	He	225429	1.61	224982	100.20	70	120	
In	115	NoGas	5365689	1.37	5525169	97.11	70	120	
Tb	159	H2	5655793	2.49	5558678	101.75	70	120	
Tb	159	He	1344698	1.12	1315002	102.26	70	120	
Tb	159	NoGas	7255210	0.64	7249592	100.08	70	120	
Ho	165	H2	5263632	2.46	5171419	101.78	70	120	
Ho	165	He	1329038	1.48	1293090	102.78	70	120	
Ho	165	NoGas	6851988	1.42	6788564	100.93	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV 160519
Data File Name	011_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T09:15:47-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	6	NoGas	103.592	0.850	477171	1.25	100	103.6	89.6	110.4	
B	11	45	NoGas	104.499	0.898	372974	0.63	100	104.5	89.6	110.4	
Na	23	45	He	2708.300	2.835	741679	0.34	2500	108.3	89.6	110.4	
Mg	24	45	He	2704.777	2.284	320049	0.40	2500	108.2	89.6	110.4	
Al	27	45	He	2683.349	2.881	68854	0.26	2500	107.3	89.6	110.4	
K	39	45	He	2697.843	2.356	159438	0.83	2500	107.9	89.6	110.4	
Ca	40	45	H2	2696.130	6.722	8438692	1.04	2500	107.8	89.6	110.4	
Ti	47	45	He	104.462	1.610	4045	1.13	100	104.5	89.6	110.4	
V	51	45	He	106.322	2.912	226983	0.58	100	106.3	89.6	110.4	
Cr	52	45	He	106.220	3.010	325586	0.39	100	106.2	89.6	110.4	
Mn	55	45	He	107.349	2.642	97297	0.19	100	107.3	89.6	110.4	
Fe	56	45	He	2671.095	2.795	6102790	0.78	2500	106.8	89.6	110.4	
Co	59	45	He	106.556	2.647	686407	0.45	100	106.6	89.6	110.4	
Ni	60	45	He	108.647	2.369	215049	0.33	100	108.6	89.6	110.4	
Cu	63	45	He	108.681	2.187	630929	0.60	100	108.7	89.6	110.4	
Zn	66	115	He	105.540	1.401	64955	0.37	100	105.5	89.6	110.4	
As	75	115	He	96.686	1.510	34399	0.24	100	96.7	89.6	110.4	
Se	78	72	H2	107.342	8.166	52772	2.66	100	107.3	89.6	110.4	
Se	78	115	He	106.174	2.958	1089	1.67	100	106.2	89.6	110.4	
Sr	88	115	NoGas	102.481	1.281	6812044	0.83	100	102.5	89.6	110.4	
Mo	95	115	NoGas	99.278	0.958	1371030	1.40	100	99.3	89.6	110.4	
Ag	107	115	NoGas	49.313	1.665	1772609	1.02	50	98.6	89.6	110.4	
Cd	111	115	He	104.137	1.362	89212	0.77	100	104.1	89.6	110.4	
Sn	118	115	He	52.798	1.188	66563	0.60	100	52.8	89.6	110.4	>+\- 10%
Sn	118	115	NoGas	50.422	0.755	1041151	0.16	100	50.4	89.6	110.4	>+\- 10%
Sb	121	115	NoGas	93.561	0.590	2820291	0.43	100	93.6	89.6	110.4	
Ba	137	165	NoGas	102.588	0.775	1014292	0.90	100	102.6	89.6	110.4	
Tl	205	165	NoGas	104.278	0.396	5633254	0.83	100	104.3	89.6	110.4	
Pb	208	165	NoGas	105.267	0.632	7704729	0.21	100	105.3	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	117092	1.37	115259	101.59	70	120	
Sc	45	H2	498590	5.61	497539	100.21	70	120	
Sc	45	He	29259	2.63	29688	98.55	70	120	
Sc	45	NoGas	3609088	0.57	3567710	101.16	70	120	
Ge	72	H2	152689	5.29	154208	99.02	70	120	
Ge	72	He	30083	2.66	30282	99.34	70	120	
Ge	72	NoGas	867767	1.50	872567	99.45	70	120	
In	115	H2	3008645	4.87	3044907	98.81	70	120	
In	115	He	224254	1.28	224982	99.68	70	120	
In	115	NoGas	5482874	0.72	5525169	99.23	70	120	
Tb	159	H2	5604230	5.54	5558678	100.82	70	120	
Tb	159	He	1334526	2.01	1315002	101.48	70	120	
Tb	159	NoGas	7423272	0.22	7249592	102.40	70	120	
Ho	165	H2	5183139	6.34	5171419	100.23	70	120	
Ho	165	He	1315500	1.93	1293090	101.73	70	120	
Ho	165	NoGas	6919543	0.59	6788564	101.93	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB 160520
Data File Name	017_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T10:04:03-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	6	NoGas	-0.002	-122.7	117	9.9	0.1	
B	11	45	NoGas	1.022	24.6	42001	1.9	8	
Na	23	45	He	-5.854	-10.1	22816	1.9	50	
Mg	24	45	He	-0.206	-81.3	81	26.1	20	
Al	27	45	He	1.494	47.9	230	10.1	10	
K	39	45	He	-6.633	-32.9	4945	3.7	40	
Ca	40	45	H2	-2.319	-41.3	69015	0.7	150	
Ti	47	45	He	0.001	9848.8	1	173.2	0.5	
V	51	45	He	0.006	170.1	72	26.6	0.4	
Cr	52	45	He	0.002	449.4	573	6.6	0.2	
Mn	55	45	He	-0.006	-136.3	50	13.3	0.3	
Fe	56	45	He	0.000	12489.7	2512	2.3	30	
Co	59	45	He	0.001	171.5	49	25.8	0.4	
Ni	60	45	He	-0.020	-9.9	164	1.2	0.4	
Cu	63	45	He	-0.120	-4.1	1693	1.6	0.4	
Zn	66	115	He	-0.367	-34.3	814	10.8	15	
As	75	115	He	0.007	171.6	8	52.7	0.2	
Se	78	72	H2	0.000	729.4	6	10.8	0.4	
Se	78	115	He	0.261	98.8	3	88.2	0.4	
Sr	88	115	NoGas	-0.002	-37.5	5618	1.8	0.1	
Mo	95	115	NoGas	0.002	218.5	163	43.4	0.3	
Ag	107	115	NoGas	0.002	98.8	120	54.6	0.1	
Cd	111	115	He	0.001	817.1	12	57.7	0.1	
Sn	118	115	He	-0.069	-14.8	210	7.9	0.1	
Sn	118	115	NoGas	-0.020	-22.8	3468	3.3	0.1	
Sb	121	115	NoGas	0.002	208.0	2600	5.7	0.5	
Ba	137	165	NoGas	-0.005	-99.0	207	24.4	0.4	
Tl	205	165	NoGas	0.004	36.3	440	18.6	0.2	
Pb	208	165	NoGas	-0.021	-8.0	3690	3.4	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	114433	2.23	115259	99.28	70	120	
Sc	45	H2	484687	4.89	497539	97.42	70	120	
Sc	45	He	28821	2.48	29688	97.08	70	120	
Sc	45	NoGas	3485321	0.46	3567710	97.69	70	120	
Ge	72	H2	148961	4.77	154208	96.60	70	120	
Ge	72	He	29547	2.48	30282	97.57	70	120	
Ge	72	NoGas	860284	0.91	872567	98.59	70	120	
In	115	H2	3033044	4.57	3044907	99.61	70	120	
In	115	He	222132	1.95	224982	98.73	70	120	
In	115	NoGas	5562179	1.20	5525169	100.67	70	120	
Tb	159	H2	5689981	5.47	5558678	102.36	70	120	
Tb	159	He	1318974	1.61	1315002	100.30	70	120	
Tb	159	NoGas	7543022	1.31	7249592	104.05	70	120	
Ho	165	H2	5345218	4.85	5171419	103.36	70	120	
Ho	165	He	1303711	1.39	1293090	100.82	70	120	
Ho	165	NoGas	7067440	1.19	6788564	104.11	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSAB 160520
Data File Name	020ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T10:26:06-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	NoGas	55.999	3.4	165102	0.9	60	
B	11	NoGas	-0.345	-5.9	31935	2.1	9.6	
Na	23	He	58619.592	2.2	13317916	0.1	60000	
Mg	24	He	52127.585	1.6	5283433	0.6	60000	
Al	27	He	47184.131	2.4	1034635	0.4	60000	
K	39	He	51489.829	1.2	2523812	1.0	60000	
Ca	40	H2	48523.463	4.1	132724159	1.4	60000	
Ti	47	He	1007.368	1.4	33411	0.7	1200	
V	51	He	55.767	3.7	102018	1.6	60	
Cr	52	He	53.964	3.5	141955	1.6	60	
Mn	55	He	56.816	3.7	44136	1.5	60	
Fe	56	He	50165.351	2.6	98161138	0.5	60000	
Co	59	He	55.061	2.4	303910	0.3	60	
Ni	60	He	108.422	1.9	183877	0.3	120	
Cu	63	He	54.646	3.0	272795	1.0	60	
Zn	66	He	111.893	3.0	56856	0.7	120	
As	75	He	51.753	2.2	15221	1.6	60	
Se	78	H2	54.883	5.5	22592	1.9	60	
Se	78	He	51.671	2.5	438	0.8	60	
Sr	88	NoGas	0.613	4.9	41934	3.0	6	
Mo	95	NoGas	1029.077	3.0	12859905	1.2	1260	
Ag	107	NoGas	92.582	3.3	3012009	1.9	120	
Cd	111	He	113.644	3.9	80434	0.9	120	
Sn	118	He	0.176	45.7	429	19.3	60	>+\- 20%
Sn	118	NoGas	0.223	4.7	7611	1.1	60	>+\- 20%
Sb	121	NoGas	49.205	2.8	1343453	1.1	60	
Ba	137	NoGas	50.856	2.3	507642	1.4	60	
Tl	205	NoGas	52.756	1.4	2876850	0.9	60	
Pb	208	NoGas	106.571	2.1	7873151	1.1	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	74977	3.06	115259	65.05	70	120	ISTD Failed
Sc	45	H2	438781	2.59	497539	88.19	70	120	
Sc	45	He	25066	2.17	29688	84.43	70	120	
Sc	45	NoGas	2944878	2.21	3567710	82.54	70	120	
Ge	72	H2	127627	3.55	154208	82.76	70	120	
Ge	72	He	25537	3.28	30282	84.33	70	120	
Ge	72	NoGas	768434	0.70	872567	88.07	70	120	
In	115	H2	2728642	3.91	3044907	89.61	70	120	
In	115	He	185400	2.97	224982	82.41	70	120	
In	115	NoGas	4963898	2.02	5525169	89.84	70	120	
Tb	159	H2	5626069	4.20	5558678	101.21	70	120	
Tb	159	He	1192908	2.73	1315002	90.72	70	120	
Tb	159	NoGas	7301424	1.73	7249592	100.71	70	120	
Ho	165	H2	5252516	4.06	5171419	101.57	70	120	
Ho	165	He	1195754	2.20	1293090	92.47	70	120	
Ho	165	NoGas	6985499	1.57	6788564	102.90	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA 160520
Data File Name	022ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T10:32:46-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	NoGas	0.059	39.0	220	27.3	0.1	
B	11	NoGas	-1.165	-21.7	27270	2.1	8	
Na	23	He	58887.126	4.7	12630962	1.2	60000	
Mg	24	He	51415.269	4.7	4919526	1.0	60000	
Al	27	He	46655.630	5.1	965728	0.2	60000	
K	39	He	51010.824	4.8	2360161	0.8	60000	
Ca	40	H2	48487.155	5.7	122994617	0.6	60000	
Ti	47	He	1006.928	4.2	31533	1.4	1200	
V	51	He	0.050	10.4	137	6.5	0.2	
Cr	52	He	0.625	8.7	2009	1.5	30	
Mn	55	He	2.245	6.3	1690	2.5	24	
Fe	56	He	50126.797	5.9	92566083	0.8	60000	
Co	59	He	0.134	9.9	732	5.7	5	
Ni	60	He	0.322	4.6	682	2.2	20	
Cu	63	He	0.395	9.6	3802	5.0	25	
Zn	66	He	2.394	1.4	1970	7.9	60	
As	75	He	0.223	16.8	67	14.4	0.4	
Se	78	H2	0.068	24.7	31	17.0	0.4	
Se	78	He	0.005	1326.2	0	173.2	0.4	
Sr	88	NoGas	0.575	3.4	38443	2.2	5	
Mo	95	NoGas	960.809	0.6	11627138	0.8	1200	
Ag	107	NoGas	0.122	9.0	3887	9.1	5	
Cd	111	He	0.160	16.0	118	20.0	0.5	
Sn	118	He	0.211	24.2	444	11.9	5	
Sn	118	NoGas	0.197	4.5	6908	2.6	5	
Sb	121	NoGas	0.540	4.4	16438	3.3	5	
Ba	137	NoGas	0.456	2.3	4677	2.3	1.5	
Tl	205	NoGas	0.044	9.4	2564	7.8	0.2	
Pb	208	NoGas	0.347	2.8	30025	1.6	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	64256	0.84	115259	55.75	70	120	ISTD Failed
Sc	45	H2	407423	5.11	497539	81.89	70	120	
Sc	45	He	23696	5.34	29688	79.82	70	120	
Sc	45	NoGas	2694394	0.23	3567710	75.52	70	120	
Ge	72	H2	118266	5.23	154208	76.69	70	120	
Ge	72	He	24965	5.98	30282	82.44	70	120	
Ge	72	NoGas	723764	1.04	872567	82.95	70	120	
In	115	H2	2632474	5.32	3044907	86.45	70	120	
In	115	He	177133	7.12	224982	78.73	70	120	
In	115	NoGas	4805059	0.76	5525169	86.97	70	120	
Tb	159	H2	5539865	5.01	5558678	99.66	70	120	
Tb	159	He	1154042	6.01	1315002	87.76	70	120	
Tb	159	NoGas	7207618	0.74	7249592	99.42	70	120	
Ho	165	H2	5199498	4.45	5171419	100.54	70	120	
Ho	165	He	1162083	6.21	1293090	89.87	70	120	
Ho	165	NoGas	6806686	0.86	6788564	100.27	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 160520
Data File Name	033_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T11:34:22-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	6	NoGas	49.795	1.887	182196	0.38	50	99.6	89.6	110.4	
B	11	45	NoGas	40.751	2.170	154449	1.50	50	81.5	89.6	110.4	>+/- 10%
Na	23	45	He	1310.012	8.032	354025	1.06	1250	104.8	89.6	110.4	
Mg	24	45	He	2537.668	7.850	286103	1.92	2500	101.5	89.6	110.4	
Al	27	45	He	978.832	7.977	24051	2.18	1000	97.9	89.6	110.4	
K	39	45	He	1011.592	9.316	60150	2.00	1000	101.2	89.6	110.4	
Ca	40	45	H2	2337.741	6.375	7668310	1.52	2500	93.5	89.6	110.4	
Ti	47	45	He	49.934	6.713	1843	1.19	50	99.9	89.6	110.4	
V	51	45	He	51.102	8.467	103950	2.08	50	102.2	89.6	110.4	
Cr	52	45	He	51.256	8.762	149918	2.06	50	102.5	89.6	110.4	
Mn	55	45	He	52.529	6.285	45423	0.81	50	105.1	89.6	110.4	
Fe	56	45	He	1033.151	7.862	2250481	1.18	1000	103.3	89.6	110.4	
Co	59	45	He	51.912	7.371	318700	0.92	50	103.8	89.6	110.4	
Ni	60	45	He	51.378	8.371	96967	1.67	50	102.8	89.6	110.4	
Cu	63	45	He	51.582	7.982	286493	1.61	50	103.2	89.6	110.4	
Zn	66	115	He	49.917	8.403	30502	2.18	50	99.8	89.6	110.4	
As	75	115	He	49.095	6.953	17049	1.04	50	98.2	89.6	110.4	
Se	78	72	H2	49.071	5.603	24459	0.49	50	98.1	89.6	110.4	
Se	78	115	He	48.165	11.212	482	5.52	50	96.3	89.6	110.4	
Sr	88	115	NoGas	47.056	2.522	3146828	0.53	50	94.1	89.6	110.4	
Mo	95	115	NoGas	46.331	3.088	643048	0.80	50	92.7	89.6	110.4	
Ag	107	115	NoGas	23.230	2.864	839259	0.87	25	92.9	89.6	110.4	
Cd	111	115	He	50.125	8.046	41891	2.01	50	100.2	89.6	110.4	
Sn	118	115	He	50.102	7.100	61650	1.01	50	100.2	89.6	110.4	
Sn	118	115	NoGas	47.422	3.129	984281	0.72	50	94.8	89.6	110.4	
Sb	121	115	NoGas	49.057	4.561	1486938	2.17	50	98.1	89.6	110.4	
Ba	137	165	NoGas	47.030	0.234	491281	0.39	50	94.1	89.6	110.4	
Tl	205	165	NoGas	49.586	1.877	2829416	1.91	50	99.2	89.6	110.4	
Pb	208	165	NoGas	49.201	1.190	3806631	1.35	50	98.4	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	93005	2.18	115259	80.69	70	120	
Sc	45	H2	521577	4.99	497539	104.83	70	120	
Sc	45	He	27967	7.06	29688	94.20	70	120	
Sc	45	NoGas	3279422	1.88	3567710	91.92	70	120	
Ge	72	H2	154628	5.04	154208	100.27	70	120	
Ge	72	He	29383	6.23	30282	97.03	70	120	
Ge	72	NoGas	846543	1.27	872567	97.02	70	120	
In	115	H2	3260185	5.08	3044907	107.07	70	120	
In	115	He	219449	6.21	224982	97.54	70	120	
In	115	NoGas	5512558	2.36	5525169	99.77	70	120	
Tb	159	H2	6383725	4.42	5558678	114.84	70	120	
Tb	159	He	1319902	5.88	1315002	100.37	70	120	
Tb	159	NoGas	7662810	0.90	7249592	105.70	70	120	
Ho	165	H2	5921081	4.34	5171419	114.50	70	120	
Ho	165	He	1312779	6.04	1293090	101.52	70	120	
Ho	165	NoGas	7308598	0.29	6788564	107.66	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 160520
Data File Name	035_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T11:41:16-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	6	NoGas	-0.010	-51.0	60	28.9	0.1	
B	11	45	NoGas	-1.836	-29.4	30242	2.1	8	
Na	23	45	He	22.319	4.7	27350	1.4	50	
Mg	24	45	He	0.617	69.2	160	28.0	20	
Al	27	45	He	-0.279	-194.1	168	8.0	10	
K	39	45	He	-6.866	-91.0	4467	5.1	40	
Ca	40	45	H2	-2.748	-24.8	64541	1.3	150	
Ti	47	45	He	0.068	2.8	3	0.0	0.5	
V	51	45	He	0.003	461.2	61	46.4	0.4	
Cr	52	45	He	0.052	32.8	654	8.3	0.2	
Mn	55	45	He	-0.001	-1834.9	50	29.1	0.3	
Fe	56	45	He	0.352	29.6	2994	5.2	30	
Co	59	45	He	-0.002	-78.8	27	33.1	0.4	
Ni	60	45	He	-0.033	-18.1	127	9.5	0.4	
Cu	63	45	He	-0.139	-7.2	1437	3.2	0.4	
Zn	66	115	He	-0.275	-22.6	802	5.2	15	
As	75	115	He	0.020	70.3	11	39.8	0.2	
Se	78	72	H2	0.021	1.9	15	4.6	0.4	
Se	78	115	He	0.144	42.0	2	34.6	0.4	
Sr	88	115	NoGas	-0.005	-52.4	5381	4.1	0.1	
Mo	95	115	NoGas	0.056	8.2	923	6.3	0.3	
Ag	107	115	NoGas	0.004	32.1	183	22.7	0.1	
Cd	111	115	He	-0.006	-22.4	5	21.7	0.1	
Sn	118	115	He	-0.037	-106.9	230	20.4	0.1	
Sn	118	115	NoGas	0.013	64.6	4168	5.0	0.1	
Sb	121	115	NoGas	0.265	2.4	10650	0.9	0.5	
Ba	137	165	NoGas	-0.001	-177.1	253	8.2	0.4	
Tl	205	165	NoGas	0.021	7.9	1430	6.1	0.2	
Pb	208	165	NoGas	-0.016	-14.7	4170	1.9	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	85732	2.86	115259	74.38	70	120	
Sc	45	H2	461696	4.25	497539	92.80	70	120	
Sc	45	He	26131	1.94	29688	88.02	70	120	
Sc	45	NoGas	3177411	4.09	3567710	89.06	70	120	
Ge	72	H2	137673	3.47	154208	89.28	70	120	
Ge	72	He	27741	2.44	30282	91.61	70	120	
Ge	72	NoGas	830005	2.29	872567	95.12	70	120	
In	115	H2	3060539	2.90	3044907	100.51	70	120	
In	115	He	205162	0.90	224982	91.19	70	120	
In	115	NoGas	5573509	0.94	5525169	100.87	70	120	
Tb	159	H2	6026921	4.30	5558678	108.42	70	120	
Tb	159	He	1252260	0.38	1315002	95.23	70	120	
Tb	159	NoGas	7774692	2.57	7249592	107.24	70	120	
Ho	165	H2	5638955	4.40	5171419	109.04	70	120	
Ho	165	He	1248085	0.97	1293090	96.52	70	120	
Ho	165	NoGas	7352213	2.53	6788564	108.30	70	120	

METALS
Raw Data

APPL, INC.

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
6020A	CHROMIUM (CR) (DISSOLV	Not detected	10.0	0.45	ug/L	05/19/16	05/20/16	#62A14-160519B1-AZ35060

Metals SC-Blank-REG MDLs
Printed: 05/22/16 10:12:14 AM

Sample Report

Sample Table

Sample Name	160519B BLK 3015F
Data File Name	027SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T11:06:13-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	6	NoGas	-0.005	-0.006	-45.00	80	12.50	10000	
B	11	45	NoGas	-1.156	-1.284	-12.19	32075	1.21	10000	
Na	23	45	He	36.899	40.999	11.73	30241	0.52	1000000	
Mg	24	45	He	2.087	2.318	24.89	311	20.39	1000000	
Al	27	45	He	1.215	1.350	94.46	199	15.93	1000000	
K	39	45	He	-14.308	-15.897	-47.69	4013	5.10	500000	
Ca	40	45	H2	4.435	4.927	20.78	81093	0.66	500000	
Ti	47	45	He	0.202	0.225	32.97	8	24.71	10000	
V	51	45	He	-0.015	-0.016	-89.13	27	94.38	10000	
Cr	52	45	He	0.053	0.059	52.71	644	7.75	10000	
Mn	55	45	He	0.047	0.053	67.56	87	25.22	50000	
Fe	56	45	He	2.090	2.322	4.01	6426	1.76	1000000	
Co	59	45	He	0.012	0.013	19.54	103	8.54	10000	
Ni	60	45	He	0.015	0.017	302.65	210	40.81	10000	
Cu	63	45	He	0.775	0.862	15.49	6041	6.38	10000	
Zn	66	115	He	0.281	0.312	17.38	1072	2.89	50000	
As	75	115	He	0.006	0.007	16.11	7	8.66	2000	
Se	78	72	H2	0.010	0.012	28.84	10	11.86	10000	
Se	78	115	He	0.038	0.042	323.42	1	173.21	10000	
Sr	88	115	NoGas	-0.040	-0.044	-8.19	2977	6.73	50000	
Mo	95	115	NoGas	0.063	0.070	24.38	987	20.78	10000	
Ag	107	115	NoGas	0.006	0.007	29.71	277	24.07	5000	
Cd	111	115	He	0.012	0.013	146.24	19	68.04	10000	
Sn	118	115	He	-0.009	-0.010	-296.49	252	8.60	10000	
Sn	118	115	NoGas	0.045	0.050	14.70	4678	3.90	10000	
Sb	121	115	NoGas	0.155	0.172	0.68	7055	1.43	10000	
Ba	137	165	NoGas	0.016	0.018	28.05	427	13.33	50000	
Tl	205	165	NoGas	0.009	0.010	26.24	740	19.91	5000	
Pb	208	165	NoGas	0.034	0.038	12.85	7851	3.57	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	90500	1.84	115259	78.52	70	120	
Sc	45	H2	439321	2.84	497539	88.30	70	120	
Sc	45	He	25677	3.76	29688	86.49	70	120	
Sc	45	NoGas	3166950	1.85	3567710	88.77	70	120	
Ge	72	H2	127978	4.00	154208	82.99	70	120	
Ge	72	He	26807	5.74	30282	88.52	70	120	
Ge	72	NoGas	798803	1.73	872567	91.55	70	120	
In	115	H2	2894809	2.87	3044907	95.07	70	120	
In	115	He	198252	4.18	224982	88.12	70	120	
In	115	NoGas	5398163	1.11	5525169	97.70	70	120	
Tb	159	H2	5716680	2.45	5558678	102.84	70	120	
Tb	159	He	1208691	4.42	1315002	91.92	70	120	
Tb	159	NoGas	7582931	2.21	7249592	104.60	70	120	
Ho	165	H2	5377023	3.07	5171419	103.98	70	120	
Ho	165	He	1205454	4.83	1293090	93.22	70	120	
Ho	165	NoGas	7124847	2.28	6788564	104.95	70	120	

Laboratory Control Spike Recovery
METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 6020A	CHROMIUM (CR) (DISSOLVED)	50.0	46.9	93.8	80-120	05/19/16	05/20/16	#62A14-160519B1-AZ35060

Comments: _____

Sample Report

Sample Table

Sample Name	160519B LCS 3015F
Data File Name	030SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Acq Date Time	2016-05-20T11:16:31-07:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	6	NoGas	8.071	8.968	2.27	30993	1.91	10000	
B	11	45	NoGas	31.820	35.355	0.68	131345	0.51	10000	
Na	23	45	He	4253.550	4726.166	0.71	1079643	0.27	1000000	
Mg	24	45	He	4124.386	4582.651	1.05	457780	0.77	1000000	
Al	27	45	He	325.783	361.981	1.90	8004	2.02	1000000	
K	39	45	He	816.389	907.099	1.07	48792	0.51	500000	
Ca	40	45	H2	3894.114	4326.794	4.85	12407916	1.17	500000	
Ti	47	45	He	38.951	43.279	4.50	1416	4.97	10000	
V	51	45	He	42.735	47.483	1.09	85631	0.69	10000	
Cr	52	45	He	42.248	46.942	1.18	121825	0.96	10000	
Mn	55	45	He	41.362	45.958	0.53	35205	0.74	50000	
Fe	56	45	He	168.205	186.895	0.41	362801	0.07	1000000	
Co	59	45	He	42.123	46.803	1.39	254588	0.96	10000	
Ni	60	45	He	41.179	45.754	1.10	76585	0.67	10000	
Cu	63	45	He	40.936	45.484	0.30	224351	0.18	10000	
Zn	66	115	He	77.723	86.359	2.69	45065	0.99	50000	
As	75	115	He	38.484	42.760	3.03	12828	1.21	2000	
Se	78	72	H2	38.564	42.849	5.50	18506	1.25	10000	
Se	78	115	He	37.761	41.957	6.23	363	4.43	10000	
Sr	88	115	NoGas	40.957	45.508	2.01	2742403	1.70	50000	
Mo	95	115	NoGas	38.522	42.802	0.62	535277	0.41	10000	
Ag	107	115	NoGas	15.140	16.822	1.18	547603	1.12	5000	
Cd	111	115	He	8.048	8.943	2.25	6469	1.25	10000	
Sn	118	115	He	42.173	46.859	2.49	49858	0.98	10000	
Sn	118	115	NoGas	39.333	43.703	0.83	817950	0.41	10000	
Sb	121	115	NoGas	34.900	38.777	0.59	1059979	0.20	10000	
Ba	137	165	NoGas	39.049	43.388	0.95	401316	0.71	50000	
Tl	205	165	NoGas	41.097	45.664	1.54	2306903	1.31	5000	
Pb	208	165	NoGas	40.687	45.208	1.80	3097548	1.65	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	97308	0.72	115259	84.43	70	120	
Sc	45	H2	508392	3.91	497539	102.18	70	120	
Sc	45	He	27438	0.48	29688	92.42	70	120	
Sc	45	NoGas	3348748	0.77	3567710	93.86	70	120	
Ge	72	H2	148808	4.21	154208	96.50	70	120	
Ge	72	He	28007	1.84	30282	92.49	70	120	
Ge	72	NoGas	836335	1.18	872567	95.85	70	120	
In	115	H2	3189136	4.79	3044907	104.74	70	120	
In	115	He	210100	1.84	224982	93.39	70	120	
In	115	NoGas	5516151	0.41	5525169	99.84	70	120	
Tb	159	H2	6067140	4.64	5558678	109.15	70	120	
Tb	159	He	1269044	2.28	1315002	96.51	70	120	
Tb	159	NoGas	7542190	0.40	7249592	104.04	70	120	
Ho	165	H2	5738129	5.02	5171419	110.96	70	120	
Ho	165	He	1260220	1.91	1293090	97.46	70	120	
Ho	165	NoGas	7189784	0.28	6788564	105.91	70	120	

US EPA Tune Check Sample Report

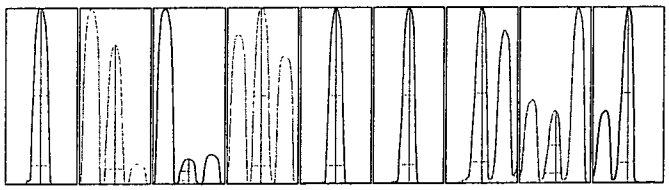
Batch Folder C:\Agilent\ICPMH\1\DATA\160519A (Ca 40).b
Report Comment C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
Instrument Name G3281A JP12101628

[NoGas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
9	649323	0.54	5.00	
24	2408282	0.75	5.00	
25	334366	0.23	5.00	
26	391239	0.17	5.00	
59	4713681	0.30	5.00	
115	6804404	0.44	5.00	
206	1461670	0.97	5.00	
207	1280734	0.67	5.00	
208	3024230	0.60	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	645006	652626	653134	648804	647043
24	2398636	2412430	2392906	2437901	2399535
25	333751	335061	334968	334709	333340
26	390240	391028	391546	391969	391412
59	4706483	4722936	4724193	4722592	4692199
115	6820366	6846947	6800380	6779519	6774808
206	1453968	1462661	1484221	1461345	1446156
207	1278746	1279242	1295574	1274305	1275802
208	2992863	3034639	3027407	3038650	3027591

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
9	100682	9.00	8.9 - 9.1		0.777	0.900	
24	386028	24.00	23.9 - 24.1		0.772	0.900	
25	53302	25.00	24.9 - 25.1		0.751	0.900	
26	62373	25.95	25.9 - 26.1		0.791	0.900	
59	781782	59.00	58.9 - 59.1		0.762	0.900	
115	1196726	115.05	114.9 - 115.1		0.749	0.900	
206	266263	206.05	205.9 - 206.1		0.748	0.900	
207	231675	207.05	206.9 - 207.1		0.718	0.900	
208	563451	208.00	207.9 - 208.1		0.725	0.900	

X% = 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Carrier Gas	0.70	L/min			
RF Matching	2.70	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

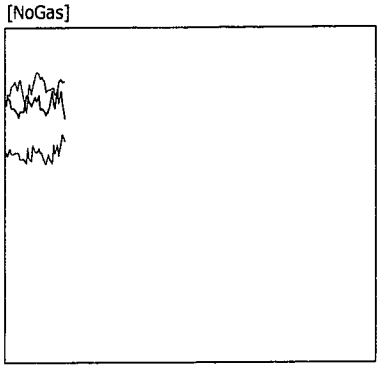
ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	10.4	V			
Extract 2	-195.0	V	Cell Entrance	-30	V			
Omega Bias	-90	V	Cell Exit	-50	V			
Deflect	13.8	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	120	V			
Energy Discrimination	5.0	V						

Current Signal

[NoGas]



Mass	Range	Count	Avg. Count	RSD [%]
7	5000	3308	3122.5	3.46
59	10000	8404	8219.8	3.37
89	20000	13658	12962.1	2.96
140	20000	12914	12812.5	3.76
205	10000	7289	7701.9	3.03
156/140	1	0.689 %	0.755 %	10.40
70/140	10	4.523 %	4.731 %	7.77
115	2000	1291	1292.2	3.29
165	1000	380	415.5	7.94
Integration Time [sec]		0.10		

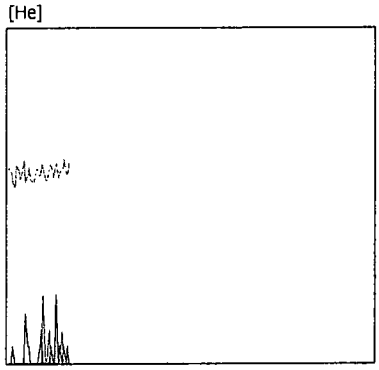
## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	10.4	V
Extract 2	-195.0	V	Cell Entrance	-30	V
Omega Bias	-90	V	Cell Exit	-50	V
Deflect	13.8	V			

## Cell Parameters ##					
Use Gas	false		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-8.0	V
H2 Flow	0.0	mL/min	OctP RF	120	V
Energy Discrimination	5.0	V			

Meters					
IF/BK Press	2.32E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.64E-4	Pa	Reflected Power	4	W
Forward Power	1549	W			

Current Signal

[He]



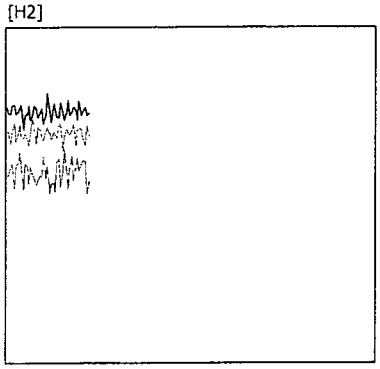
Mass	Range	Count	Avg. Count	RSD [%]
59	2000	1196	1134.4	4.03
89	1000	495	445.9	5.80
140	5000	1798	1898.0	4.96
205	5000	2628	2626.7	4.26
156/140	1	0.222 %	0.247 %	63.42
75	20	0	0.5	189.30
78	20	0	0.2	353.29
Integration Time [sec]		0.10		

## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	10.4	V
Extract 2	-195.0	V	Cell Entrance	-40	V
Omega Bias	-90	V	Cell Exit	-60	V
Deflect	0.2	V			
## Cell Parameters ##					
Use Gas	true		3rd Gas Flow	0	%
He Flow	5.3	mL/min	OctP Bias	-19.0	V
H2 Flow	0.0	mL/min	OctP RF	120	V
Energy Discrimination	5.0	V			

Meters					
IF/BK Press	2.34E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	2.92E-4	Pa	Reflected Power	4	W
Forward Power	1552	W			

Current Signal

[H2]



Mass	Range	Count	Avg. Count	RSD [%]
59	1000	540	565.3	6.39
89	10000	6703	6824.0	3.33
140	5000	2763	2820.4	3.93
205	10000	7472	7492.8	2.70
56	10000	3789	3944.7	6.05
78	20	0	0.6	152.42
80	100	74	58.6	18.29
Integration Time [sec]		0.10		

## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	10.4	V
Extract 2	-195.0	V	Cell Entrance	-30	V
Omega Bias	-90	V	Cell Exit	-60	V
Deflect	-1.0	V			
## Cell Parameters ##					
Use Gas	true		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-18.0	V
H2 Flow	6.0	mL/min	OctP RF	120	V
Energy Discrimination	3.0	V			

Meters					
IF/BK Press	2.39E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.18E-3	Pa	Reflected Power	4	W
Forward Power	1549	W			

US EPA Tune Check Sample Report

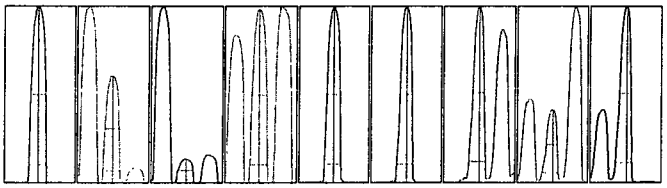
Batch Folder C:\Agilent\ICPMH\1\DATA\160520A (Ca 40).b
Report Comment C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
Instrument Name G3281A JP12101628

[NoGas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
9	482835	1.28	5.00	
24	2346296	0.93	5.00	
25	320270	0.69	5.00	
26	372185	0.85	5.00	
59	4752956	0.88	5.00	
115	6867977	0.62	5.00	
206	1448400	0.98	5.00	
207	1258028	0.85	5.00	
208	2968154	0.85	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	490392	488008	481601	476319	477855
24	2369612	2346252	2361555	2341143	2312919
25	322800	322259	319687	317576	319030
26	377117	373520	370172	369567	370549
59	4782531	4807702	4744001	4703730	4726818
115	6937377	6863464	6872587	6837310	6829148
206	1461752	1461973	1438003	1430186	1450086
207	1268502	1266170	1261091	1243014	1251363
208	2991480	2965638	2995681	2950022	2937948

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
9	76885	8.95	8.9 - 9.1		0.762	0.900	
24	390464	24.00	23.9 - 24.1		0.728	0.900	
25	51764	25.00	24.9 - 25.1		0.739	0.900	
26	61197	25.95	25.9 - 26.1		0.757	0.900	
59	816969	59.00	58.9 - 59.1		0.715	0.900	
115	1247029	115.05	114.9 - 115.1		0.696	0.900	
206	273690	206.05	205.9 - 206.1		0.722	0.900	
207	238426	207.05	206.9 - 207.1		0.695	0.900	
208	574531	208.05	207.9 - 208.1		0.697	0.900	

X% = 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Carrier Gas	0.70	L/min			
RF Matching	2.70	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

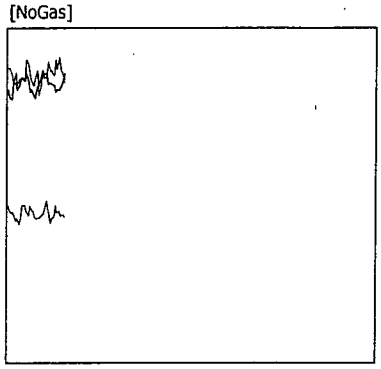
ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	11.1	V			
Extract 2	-195.0	V	Cell Entrance	-30	V			
Omega Bias	-75	V	Cell Exit	-50	V			
Deflect	14.0	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	140	V			
Energy Discrimination	5.0	V						

Current Signal

[NoGas]



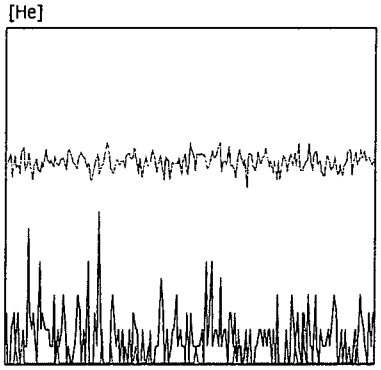
Mass	Range	Count	Avg. Count	RSD [%]
7	5000	2162	2210.3	3.88
59	10000	8359	8625.6	3.05
89	20000	13877	13906.0	2.36
140	20000	14294	13963.4	2.56
205	10000	8648	8316.4	2.76
156/140	1	0.742 %	0.663 %	16.91
70/140	5	4.401 %	4.456 %	5.41
115	500	262	255.1	8.13
165	500	255	250.5	7.01
Integration Time [sec]		0.10		

## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	11.1	V
Extract 2	-195.0	V	Cell Entrance	-30	V
Omega Bias	-75	V	Cell Exit	-50	V
Deflect	14.0	V			
## Cell Parameters ##					
Use Gas	false		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-8.0	V
H2 Flow	0.0	mL/min	OctP RF	140	V
Energy Discrimination	5.0	V			

Meters					
IF/BK Press	2.33E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.68E-4	Pa	Reflected Power	4	W
Forward Power	1550	W			

Current Signal

[He]



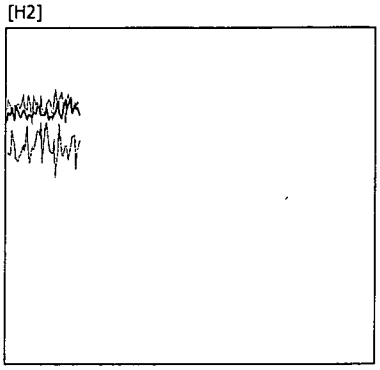
Mass	Range	Count	Avg. Count	RSD [%]
59	2000	1212	1196.7	4.38
89	1000	493	476.9	6.36
140	5000	2030	2094.5	3.64
205	5000	2939	2845.1	3.51
156/140	1	0.394 %	0.257 %	57.97
75	20	3	1.5	101.32
78	20	0	0.1	358.11
Integration Time [sec]		0.10		

## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	11.1	V
Extract 2	-195.0	V	Cell Entrance	-40	V
Omega Bias	-75	V	Cell Exit	-60	V
Deflect	1.0	V			
## Cell Parameters ##					
Use Gas	true		3rd Gas Flow	0	%
He Flow	5.3	mL/min	OctP Bias	-19.0	V
H2 Flow	0.0	mL/min	OctP RF	140	V
Energy Discrimination	5.0	V			

Meters					
IF/BK Press	2.34E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	3.11E-4	Pa	Reflected Power	4	W
Forward Power	1552	W			

Current Signal

[H2]



Mass	Range	Count	Avg. Count	RSD [%]
59	1000	664	645.0	6.15
89	10000	7790	7710.4	3.24
140	5000	3552	3381.3	3.53
205	10000	7438	7510.1	2.19
56	10000	5263	4794.0	3.50
78	20	1	0.2	235.40
80	50	32	32.3	21.18
Integration Time [sec]		0.10		

## Plasma Parameters ##					
RF Power	1550	W	Carrier Gas	0.70	L/min
RF Matching	2.70	V	Option Gas	0.0	%
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps
S/C Temp	2	°C			
## Lenses Parameters ##					
Extract 1	0.0	V	Omega Lens	11.1	V
Extract 2	-195.0	V	Cell Entrance	-30	V
Omega Bias	-75	V	Cell Exit	-60	V
Deflect	-1.4	V			
## Cell Parameters ##					
Use Gas	true		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-18.0	V
H2 Flow	6.0	mL/min	OctP RF	140	V
Energy Discrimination	3.0	V			

Meters					
IF/BK Press	2.39E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.14E-3	Pa	Reflected Power	4	W
Forward Power	1547	W			

ICP-MS STANDARDS Prep'd by: MM
Prep Date: 05/19/16
Expires: 1 week

Prep 1% HNO3/1.0%HCL
20 mL HNO3 / 2000 mL Di Water
prep: 5/16/16
20 mL HCL / 2000mL Di Water
prep: 5/16/16

Internal Standard Mix: Prep 05/02/16

Standard 4

Amount	STD	Manufacturer	Lot #
50 uL	CCV-A	ENV Express	1602141-36120
50 uL	CCV-B	ENV Express	1602140-36119
50 uL	CCV-C	ENV Express	1602139-36118

Prepared in 100 mL of 1% HNO3/1.0% HCL

Standard 3

Amount	STD
25 mL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 2

Amount	STD
500 uL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 1

Amount	STD
50 uL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICP-MS ICV

Amount	STD		
50 uL	QCS ICV A	CPI	15C180-34943
50 uL	QCS ICV B	CPI	15C181-34944

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICSA Prep: 05/19/16

1 mL	ICSA - DF2	O2Si	1086199

Prepared in 10 mL of 1% HNO3/1.0% HCL

ICSAB Prep: 05/19/16

1mL	ICSA - DF2	O2Si	1070255
100uL	INT - DF10	O2Si	1086199

Prepared in 10 mL of 1% HNO3/1.0% HCL

ICP-MS STANDARDS Prep'd by: MM
Prep Date: 05/20/16
Expires: 1 week

Prep 1% HNO3/1.0%HCL
20 mL HNO3 / 2000 mL Di Water
prep: 5/20/16
20 mL HCL / 2000mL Di Water
prep: 5/20/16

Internal Standard Mix: Prep 05/02/16

Standard 4

Amount	STD	Manufacturer	Lot #
50 uL	CCV-A	ENV Express	1602141-36120
50 uL	CCV-B	ENV Express	1602140-36119
50 uL	CCV-C	ENV Express	1602139-36118

Prepared in 100 mL of 1% HNO3/1.0% HCL

Standard 3

Amount	STD
25 mL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 2

Amount	STD
500 uL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

Standard 1

Amount	STD
50 uL	Standard 4

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICP-MS ICV

Amount	STD		
50 uL	QCS ICV A	CPI	15C180-34943
50 uL	QCS ICV B	CPI	15C181-34944

Prepared in 50 mL of 1% HNO3/1.0% HCL

ICSA Prep: 05/20/16

1 mL	ICSA - DF2	O2Si	1086199

Prepared in 10 mL of 1% HNO3/1.0% HCL

ICSAB Prep: 05/20/16

1mL	ICSA - DF2	O2Si	1070255
100uL	INT - DF10	O2Si	1086199

Prepared in 10 mL of 1% HNO3/1.0% HCL

Internal Standard Concentration

Amt	STD	Element	Vendor	Lot#	Final Conc. in Std	Expires
25 uL	1001 ug/mL	Li	BDH	F2-L102140-33279	200 ug/L	02/01/15
125 uL	1000 ug/mL	Sc	o2si	1074112-35159	500ug/L	10/21/16
125 uL	1000 ug/mL	Ge	CPI	15A047-35039	500ug/L	10/17/16
125 uL	1000 ug/mL	In	CPI	15B179-35042	500ug/L	10/17/16
125 uL	1000 ug/mL	Tb	CPI	15C302-35040	500ug/L	10/17/16
125 uL	1000 ug/mL	Ho	CPI	13G236-35041	500ug/L	10/17/16

Prep:	05/02/16	By: MM	Prep in - 1%HNO3/1.0%HCL:	1:1 prep: 5/1/16	in 250 mL
Expires:	05/31/16				

_M3015F

Metals Digestion Worksheet

Method Name 3015 Digestion (Field Filter) **Prep Method** M3015F **Set** 160519B **Units** mL

Spikes			
Spiked ID 1	LCSW LOT # 1087071-36207		
Spiked ID 2	LCSW LOT # 1087015-36208		
Spiked ID 3			
Spiked ID 4			
Spiked By	NM	Date:	05/19/16 12:35:00 PM
Witnessed By	MM	Date:	05/19/16 12:35:00 PM

Starting Temp:	33c
Ending Temp:	170c
Temperature Type:	Microwave
Sufficient Vol for Matrix QC:	Yes
End Date/Time	05/19/16 15:30

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
1	160519B Blk				45mL	50mL	05/19/16 12:35	equip: MultiWave
2	160519B LCS		90uL	1+2	45mL	50mL	05/19/16 12:35	equip: MultiWave
3	AZ34899	AZ34899W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
4	AZ34900	AZ34900W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
5	AZ34901	AZ34901W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
6	AZ34902	AZ34902W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
7	AZ34903	AZ34903W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
8	AZ34904	AZ34904W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
9	AZ34904 MS	AZ34904W02	90uL	1+2	45mL	50mL	05/19/16 12:35	equip: MultiWave
10	AZ34904 MSD	AZ34904W02	90uL	1+2	45mL	50mL	05/19/16 12:35	equip: MultiWave
11	AZ35060	AZ35060W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
12	AZ35061	AZ35061W03			45mL	50mL	05/19/16 12:35	equip: MultiWave
13	AZ35062	AZ35062W03			45mL	50mL	05/19/16 12:35	equip: MultiWave
14	AZ35063	AZ35063W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
15	AZ35064	AZ35064W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
16	AZ35065	AZ35065W02			45mL	50mL	05/19/16 12:35	equip: MultiWave
17	AZ35066	AZ35066W02			45mL	50mL	05/19/16 12:35	equip: MultiWave

Solvent and Lot#
HNO3 MERCK 55280 6003

Sample COC Transfer	
Sample prep employee Initials	nm
Analyst's initials	mm
Date	5/19/16
Time	1600
Moved to	Metals

Technician's Initials	
Scanned By	nm
Sample Preparation	nm
Digestion	nm
Bring up to volume	nm
Modified	05/19/16 11:57:53 AM

Reviewed By: mm **Date:** 5/22/16

6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	19 May 2016	15:33	Calibration Blank 05/19/16		160520A (Ca	1.
2	19 May 2016	15:36	Standard 1 05/19/16		160520A (Ca	1.
3	19 May 2016	15:40	Standard 2 05/19/16		160520A (Ca	1.
4	19 May 2016	15:43	Standard 3 05/19/16		160520A (Ca	1.
5	19 May 2016	15:47	Standard 4 05/19/16		160520A (Ca	1.
6	19 May 2016	15:50	ICV 160519		160520A (Ca	1.
10	19 May 2016	16:32	ICB 160519		160520A (Ca	1.
11	19 May 2016	16:36	ICSA 160519		160520A (Ca	1.
12	19 May 2016	16:39	ICSAB 160519		160520A (Ca	1.
39	19 May 2016	19:18	CCV 160519		160520A (Ca	1.
40	19 May 2016	19:25	CCB 160519		160520A (Ca	1.
51	19 May 2016	20:12	AZ35060W02 DF10		160520A (Ca	10.
52	19 May 2016	20:16	AZ35061W03 DF10		160520A (Ca	10.
53	19 May 2016	20:19	AZ35062W03 DF10		160520A (Ca	10.
54	19 May 2016	20:22	AZ35063W02 DF10		160520A (Ca	10.
55	19 May 2016	20:26	CCV 160519		160520A (Ca	1.
56	19 May 2016	20:33	CCB 160519		160520A (Ca	1.
58	19 May 2016	20:43	AZ35064W02 DF10		160520A (Ca	10.
59	19 May 2016	20:46	AZ35065W02 DF10		160520A (Ca	10.
60	19 May 2016	20:50	AZ35066W02 DF10		160520A (Ca	10.
68	19 May 2016	21:20	CCV 160519		160520A (Ca	1.
69	19 May 2016	21:26	CCB 160519		160520A (Ca	1.

6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
70	20 May 2016	08:58	Calibration Blank 05/20/16		160520A (Ca	1.
71	20 May 2016	09:02	Standard 1 05/20/16		160520A (Ca	1.
72	20 May 2016	09:05	Standard 2 05/20/16		160520A (Ca	1.
73	20 May 2016	09:09	Standard 3 05/20/16		160520A (Ca	1.
74	20 May 2016	09:12	Standard 4 05/20/16		160520A (Ca	1.
75	20 May 2016	09:15	ICV 160519		160520A (Ca	1.
79	20 May 2016	10:04	ICB 160520		160520A (Ca	1.
80	20 May 2016	10:26	ICSAB 160520		160520A (Ca	1.
81	20 May 2016	10:32	ICSA 160520		160520A (Ca	1.
82	20 May 2016	11:06	160519B BLK 3015F		160520A (Ca	1.
84	20 May 2016	11:16	160519B LCS 3015F		160520A (Ca	1.
86	20 May 2016	11:34	CCV 160520		160520A (Ca	1.
87	20 May 2016	11:41	CCB 160520		160520A (Ca	1.

INORGANIC ANALYSIS

APPL, INC.

INORGANIC ANALYSIS
QC Summary

APPL, INC.

WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	05/12/16	05/12/16	#2187-160512A-AZ35060
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	05/10/16	05/10/16	#2187-160510A-AZ34899

Wetlab SC-Blank-REG MDLs
Printed: 05/23/16 7:00:17 AM

Laboratory Control Spike Recovery

WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	10.00	9.95	99.5	90-110	05/10/16	05/10/16	#2187-160510A-AZ34899

Comments: _____

Laboratory Control Spike Recovery

WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	10.00	9.70	97.0	90-110	05/12/16	05/12/16	#2187-160512A-AZ35060

Comments: _____

INORGANIC ANALYSIS
Sample Data

APPL, INC.

Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19652

Sample ID: N019652-001/ MW-55-045-EB-Q216

Sample Collection Date: 05/05/16

APPL ID: AZ35060

ARF: 79769

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/12/16	05/12/16

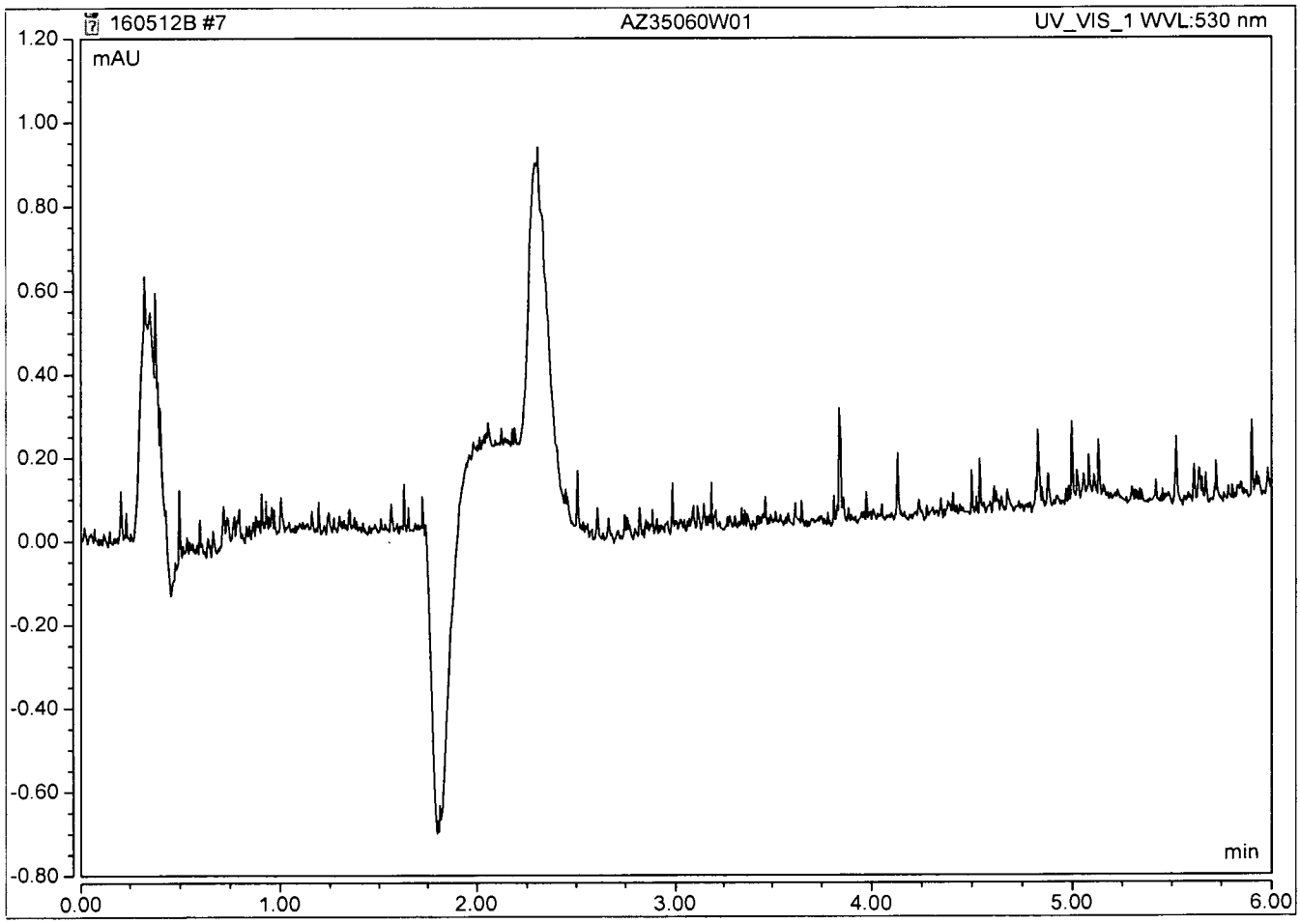
Printed: 05/23/16 7:00:13 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ35060W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**12-May-2016 / 15:45**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19652

Sample ID: N019652-002/ MW-55-045-Q216

Sample Collection Date: 05/05/16

APPL ID: AZ35061

ARF: 79769

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

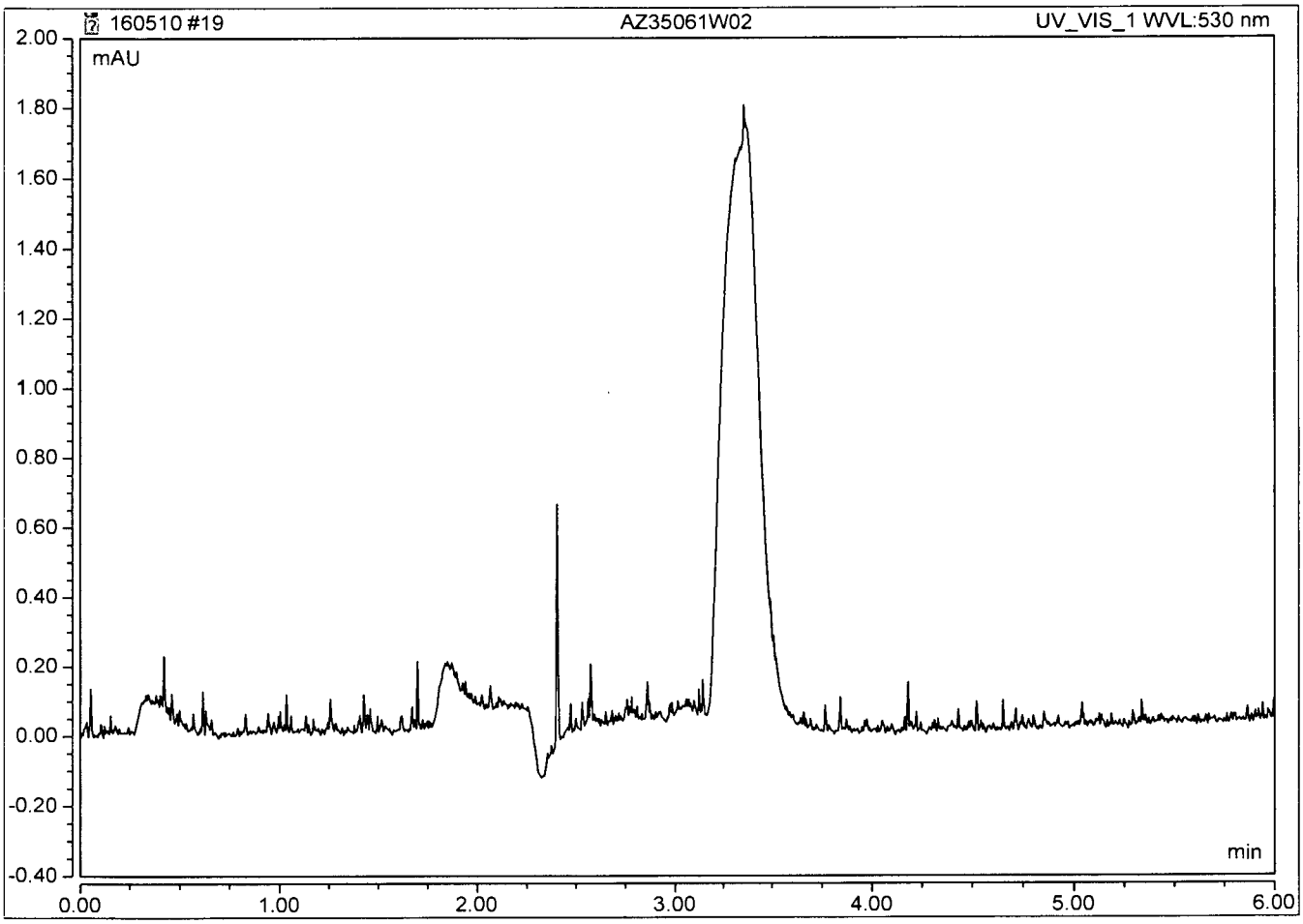
Printed: 05/23/16 7:00:13 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ35061W02**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 12:57**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19652

Sample ID: N019652-003/ MW-55-120-Q216

Sample Collection Date: 05/05/16

APPL ID: AZ35062

ARF: 79769

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	11.1	0.50	0.090	ug/L	1	05/10/16	05/10/16

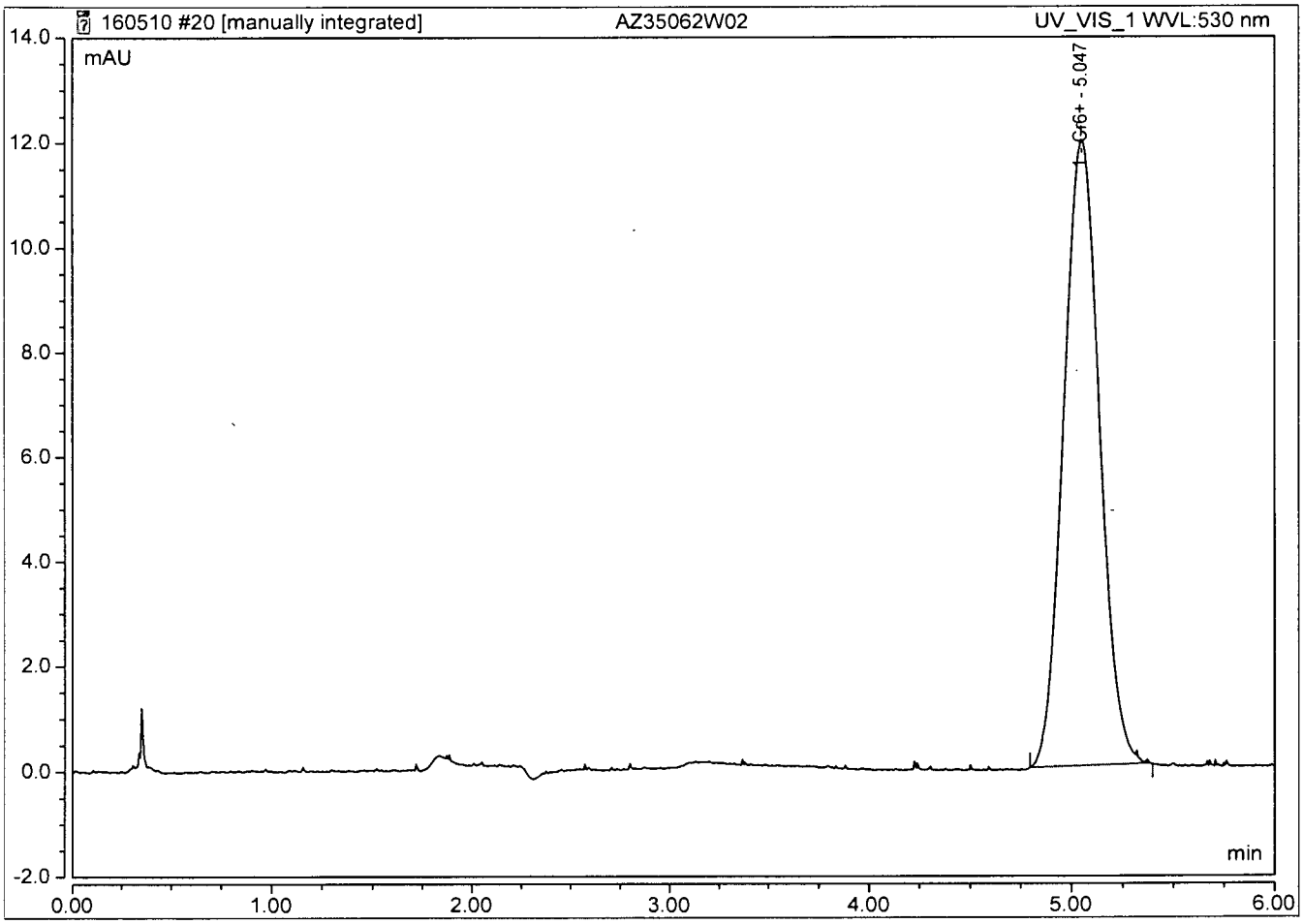
Printed: 05/23/16 7:00:13 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ35062W02**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 13:05**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.05	Cr6+	BMB*	2.417	11.946	11.1243
		TOTAL:		2.42	11.95	11.12



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19652

Sample ID: N019652-004/ MW-55-120-EB-Q216

Sample Collection Date: 05/05/16

APPL ID: AZ35063

ARF: 79769

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	0.20 J	0.50	0.090	ug/L	1	05/10/16	05/10/16

J = Estimated value.

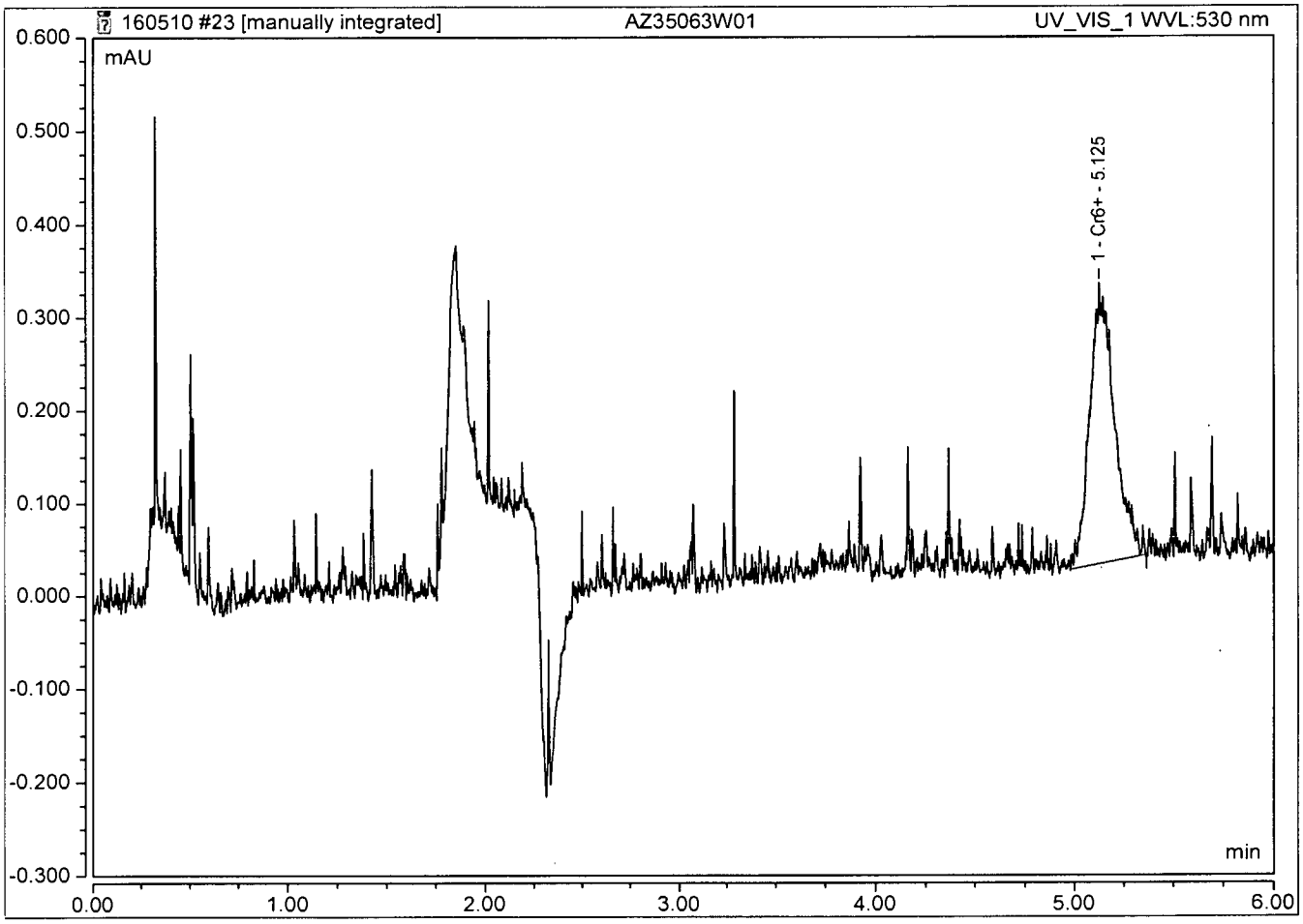
Printed: 05/23/16 7:00:13 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ35063W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 13:37**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.12	Cr6+	BMB*	0.043	0.303	0.1974
		TOTAL:		0.04	0.30	0.20



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19652

Sample ID: N019652-005/ MW-56D-Q216

Sample Collection Date: 05/05/16

APPL ID: AZ35064

ARF: 79769

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

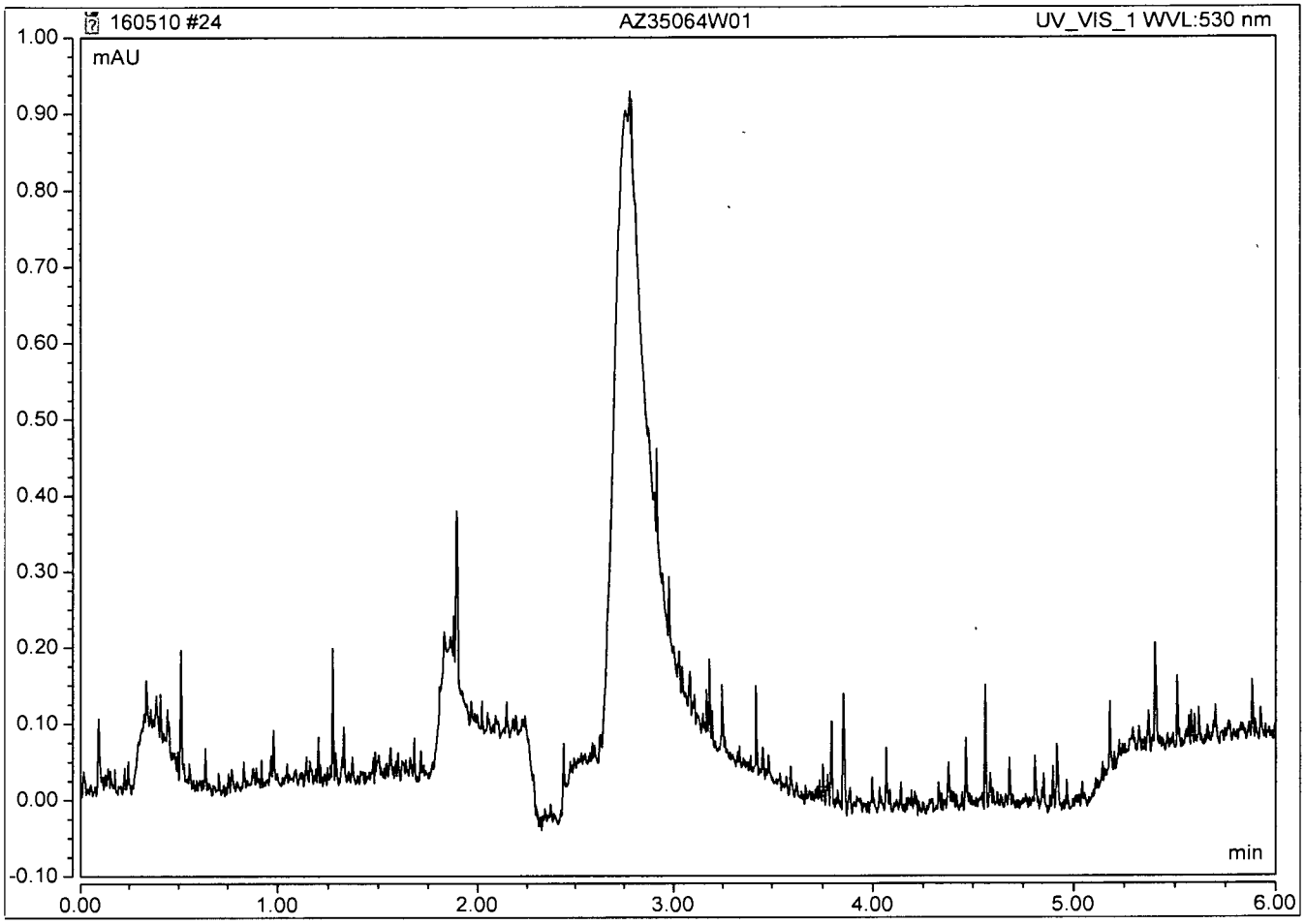
Printed: 05/23/16 7:00:13 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ35064W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 13:45**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19652

Sample ID: N019652-006/ MW-56M-Q216

Sample Collection Date: 05/05/16

APPL ID: AZ35065

ARF: 79769

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

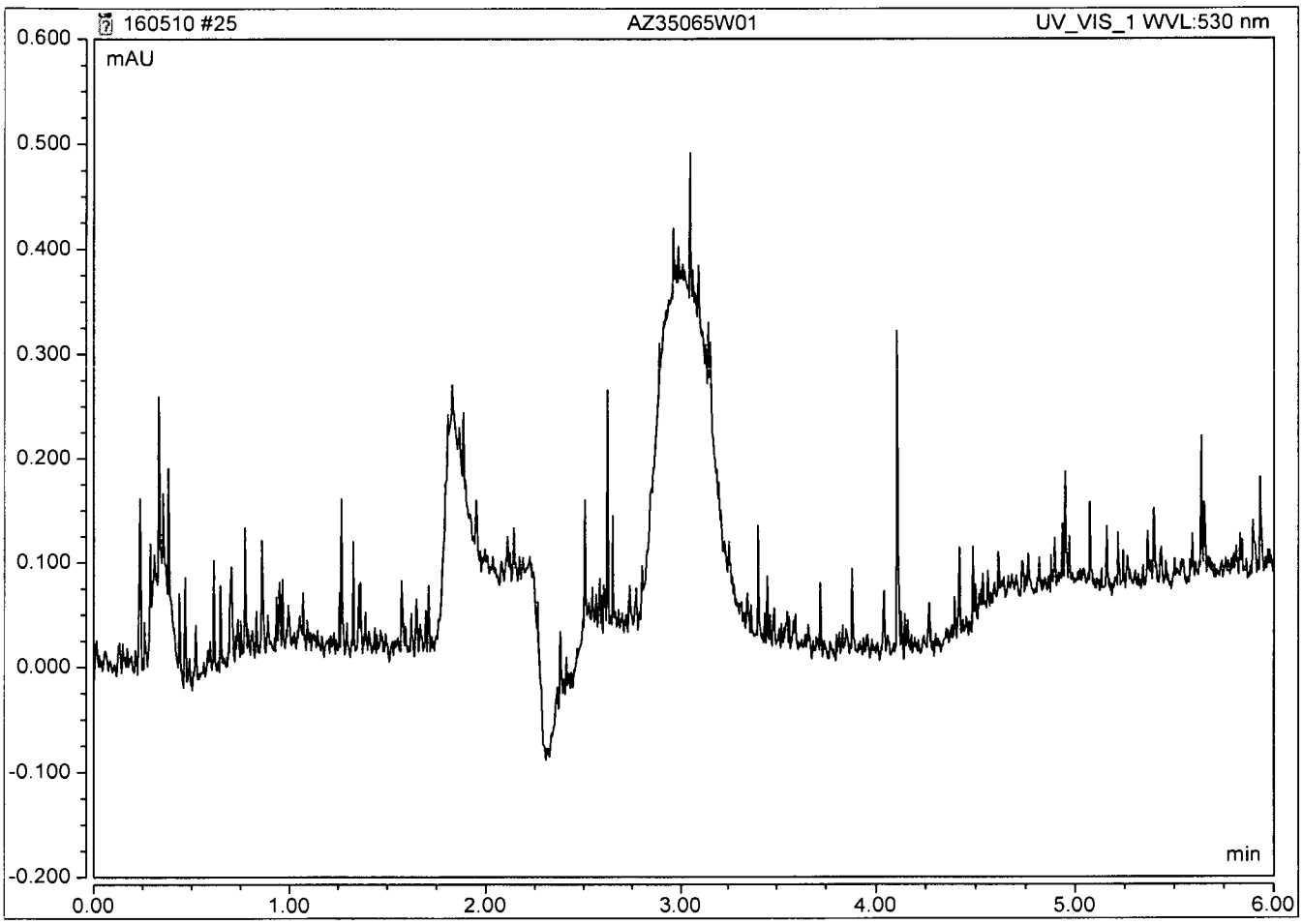
Printed: 05/23/16 7:00:13 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ35065W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 13:54**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19652

Sample ID: N019652-007/ MW-56S-Q216

Sample Collection Date: 05/05/16

APPL ID: AZ35066

ARF: 79769

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	1	05/10/16	05/10/16

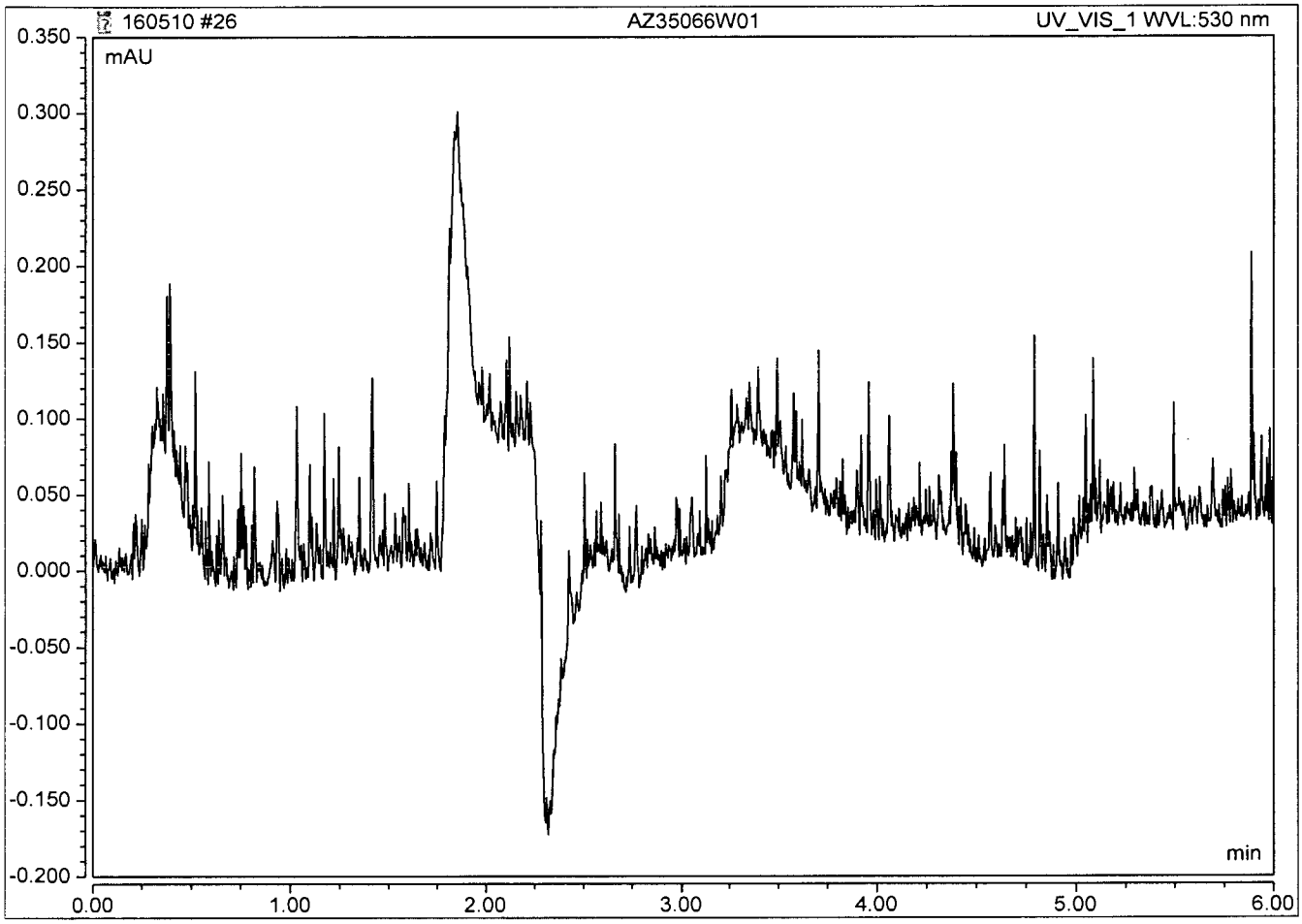
Printed: 05/23/16 7:00:13 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ35066W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 14:02**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19652

Sample ID: N019652-008/ MW-721-Q216

Sample Collection Date: 05/05/16

APPL ID: AZ35067

ARF: 79769

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	0.11 J	0.50	0.090	ug/L	1	05/10/16	05/10/16

J = Estimated value.

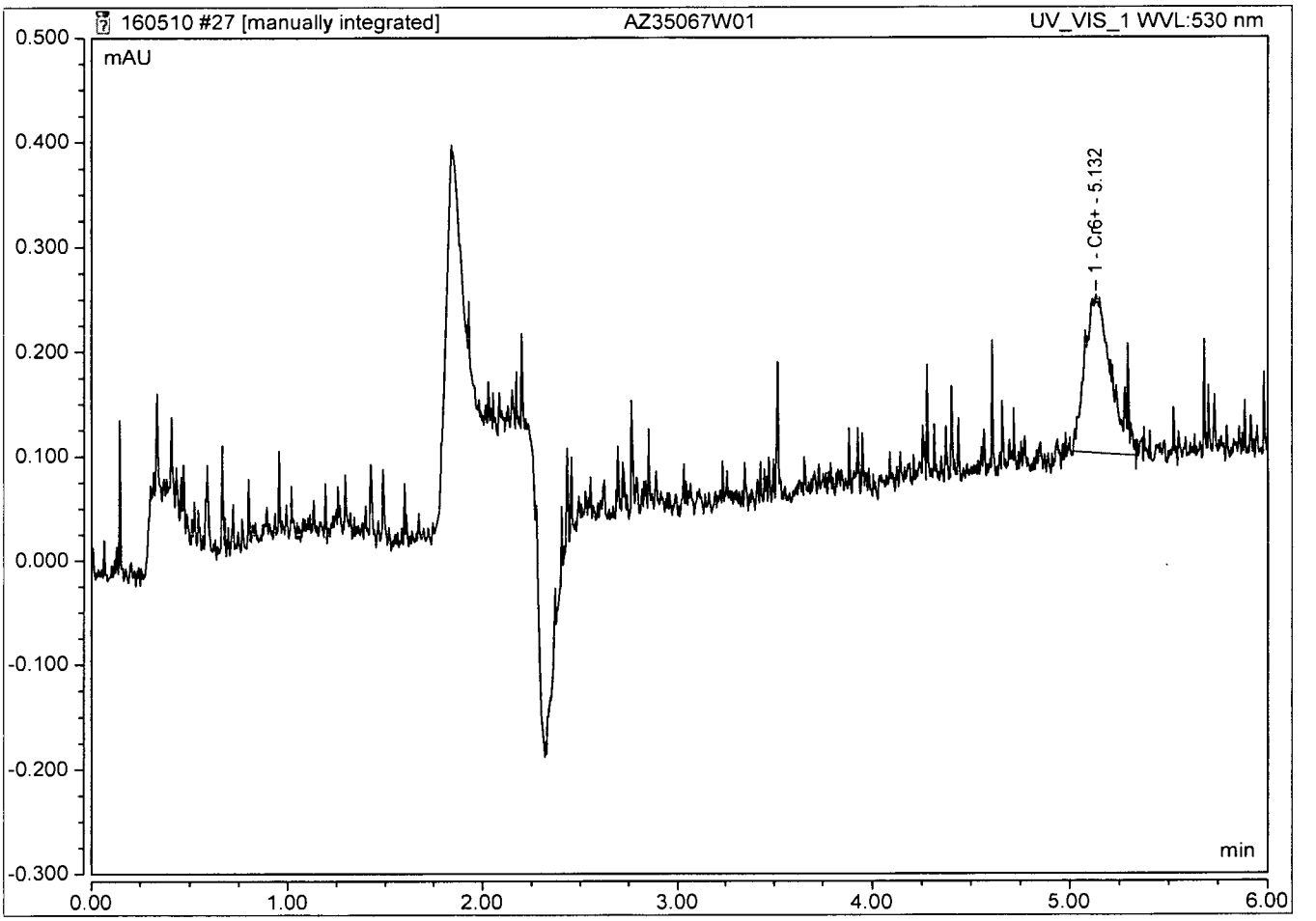
Printed: 05/23/16 7:00:13 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ35067W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 14:15**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.13	Cr6+	BMB*	0.023	0.152	0.1067
		TOTAL:		0.02	0.15	0.11



Wet Lab Analysis

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Marlon Cartin

Project: N19652

Sample ID: N019652-009/ MW-722-Q216

Sample Collection Date: 05/05/16

APPL ID: AZ35068

ARF: 79769

Method	Analyte	Result	PQL	MDL	Units	DF	Prep Date	Analysis Date
EPA 218.7	HEXAVALENT CHROMIUM	0.13 J	0.50	0.090	ug/L	1	05/10/16	05/10/16

J = Estimated value.

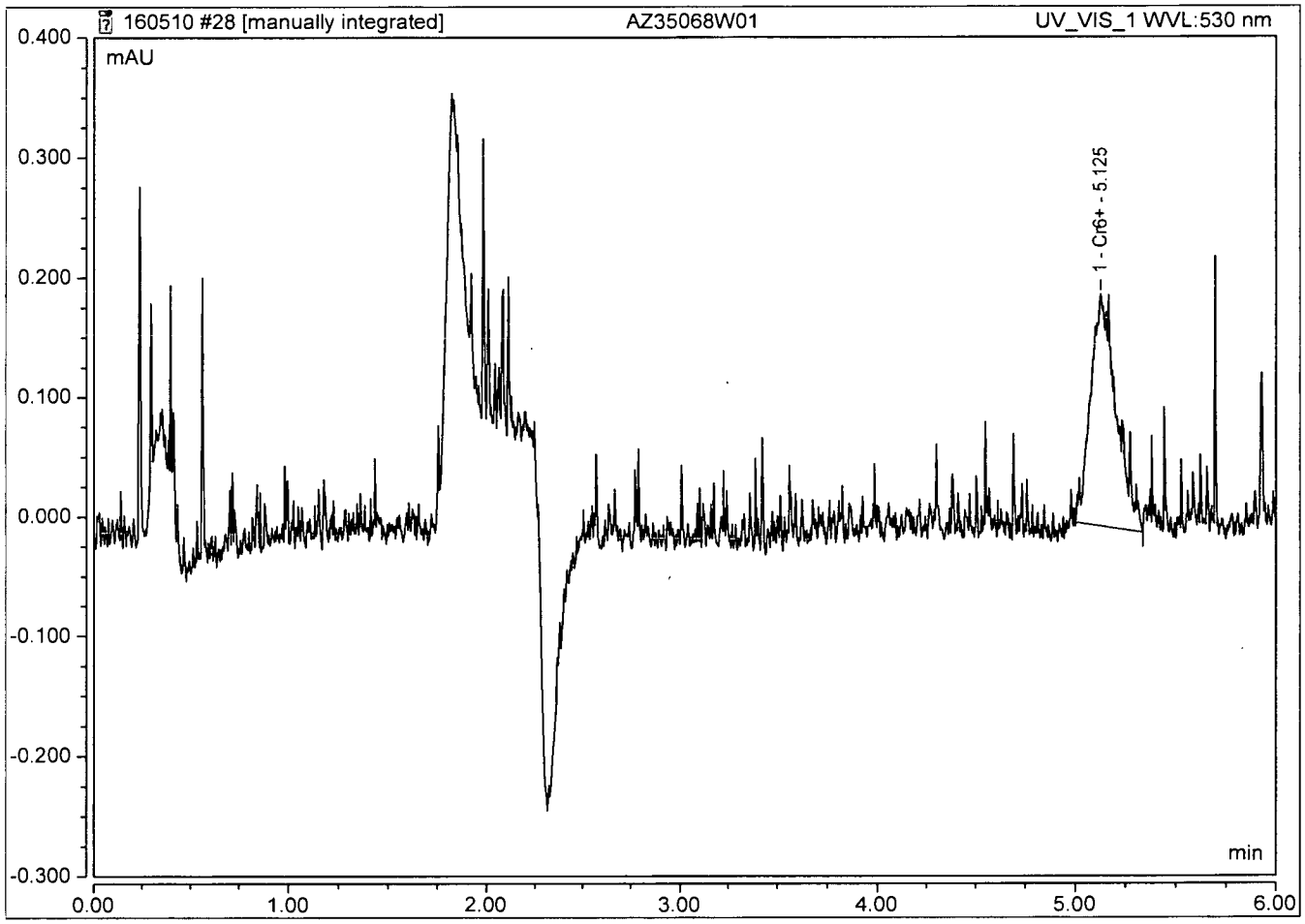
Printed: 05/23/16 7:00:13 AM

APPL-F1-SC-NoMC-REG MDLs

Peak Integration Report

Sample Name:	**AZ35068W01**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 14:24**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.12	Cr6+	BMB*	0.029	0.194	0.1339
		TOTAL:		0.03	0.19	0.13



INORGANIC ANALYSIS
Calibration Data

APPL, INC.

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract:

ARF No: SDG:

Initial Calibration Source: CPI

Continuing Calibration Source: Environmental Express

Analysis Date: 04/19/16

Analyte	Calibration Verification									M
	True ICV	Found 15:25	%R(1)	True	Found	%R(1)	True	Found	%R(1)	
Hex Chrome	10	10.7009	107							

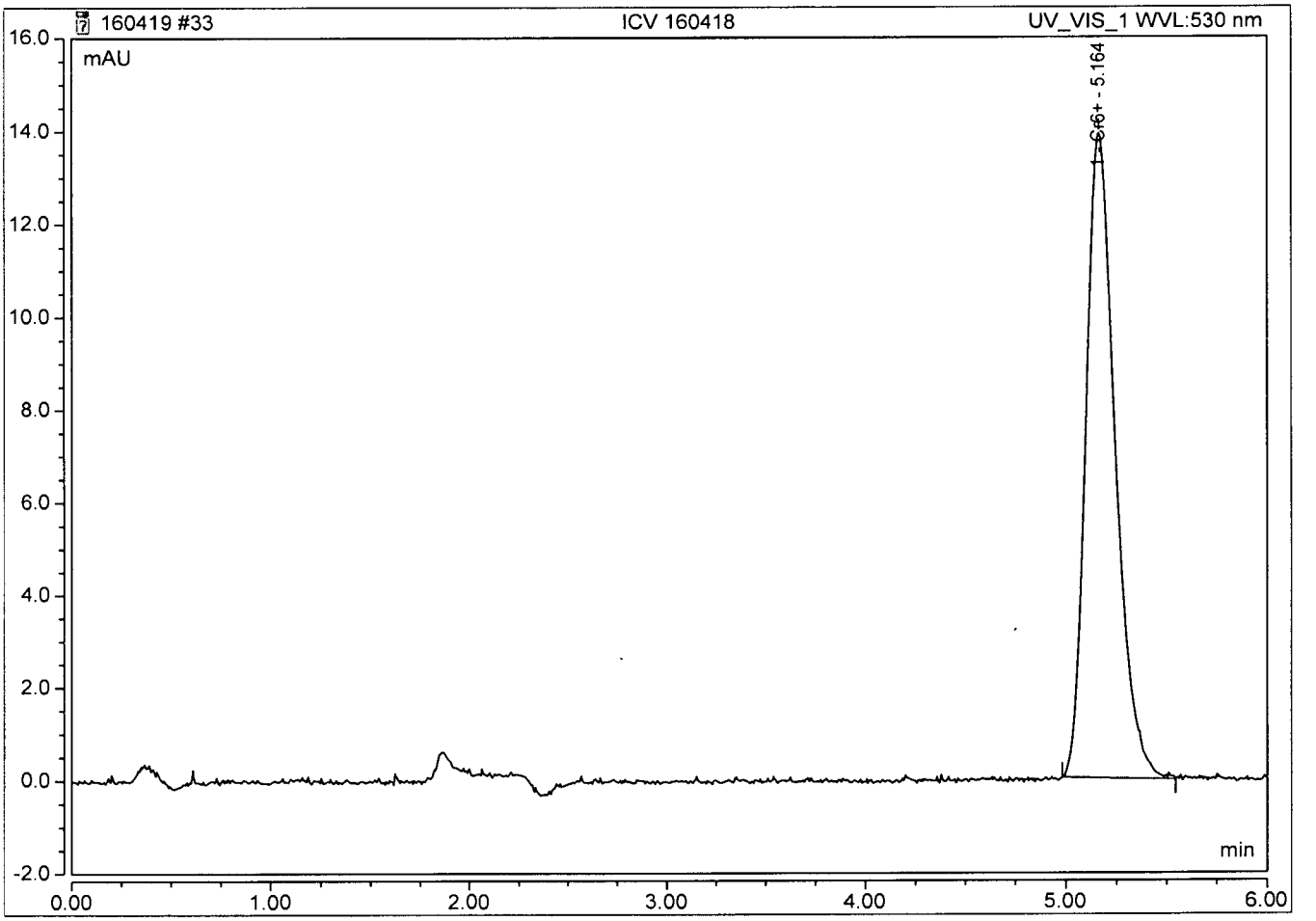
(1) Control Limits: 90-110

ILM02.0

Peak Integration Report

Sample Name:	**ICV 160418**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:25**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.16	Cr6+	BMB	2.325	13.889	✓ 10.7009
		TOTAL:		2.33	13.89	10.70



Algorithm Check
$y = mx + b$ MM 5/23/16
$x = 10.7$ ✓

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: _____

ARF No.: _____ SDG: _____

Preparation Blank Matrix (soil/water): water

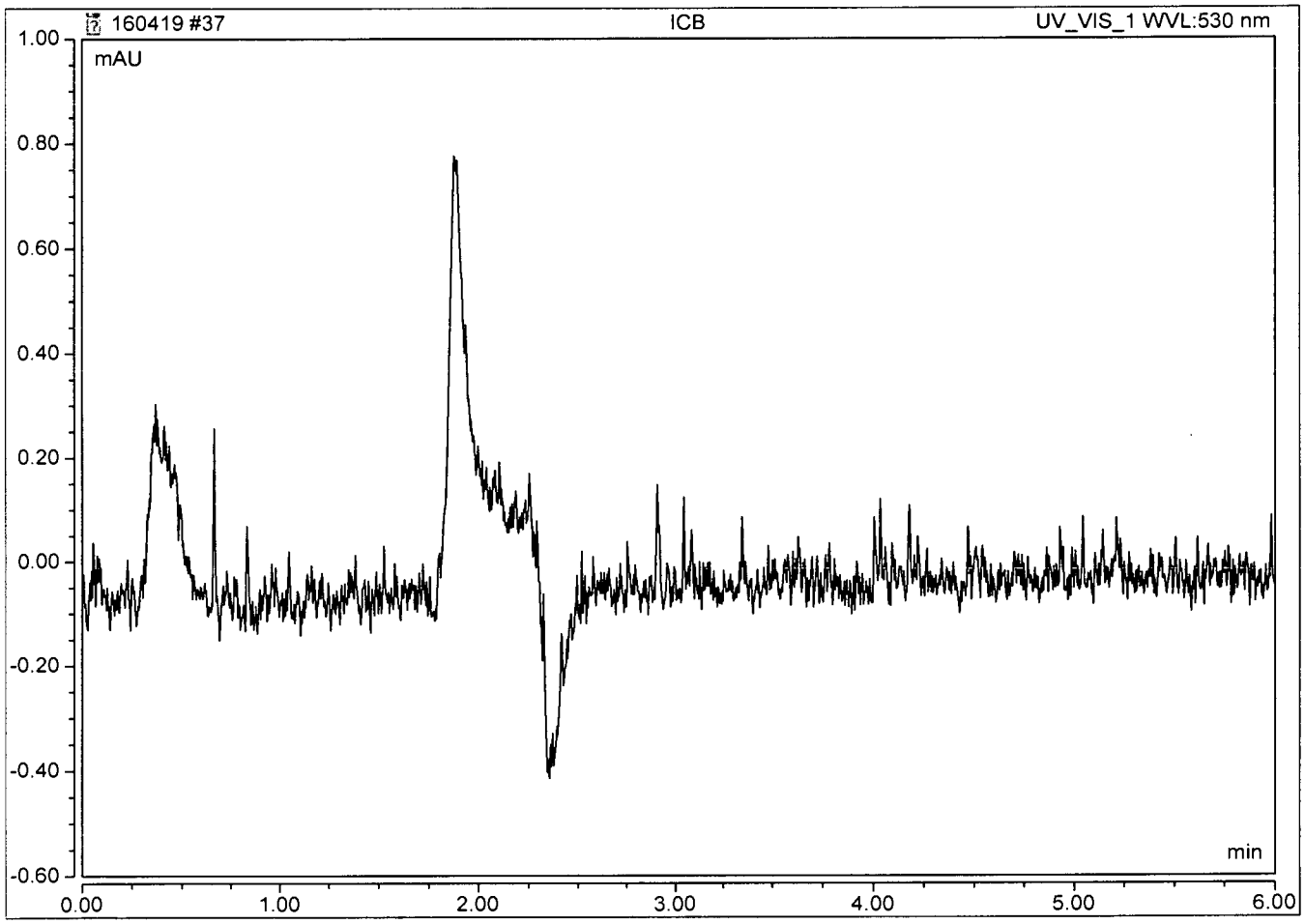
Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Calibration Blanks										M
	ICB 04/19/16 15:59	C		C		C		C		C	
Hex Chrome	.500	U									

Peak Integration Report

Sample Name:	**ICB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:59**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



A.P.P.L. INC.

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No: 79769 SDG: 79769

Initial Calibration Source: CPI

Continuing Calibration Source: Environmental Express

Analysis Date: 05/10/16

Analyte	Calibration Verification									M
	True CCV1	Found 11:16	%R(1)	True CCV1	Found 13:20	%R(1)	True CCV1	Found 14:57	%R(1)	
Hex Chrome	10	9.9179	99.2	10	9.4328	94.3	10	9.0947	90.9	

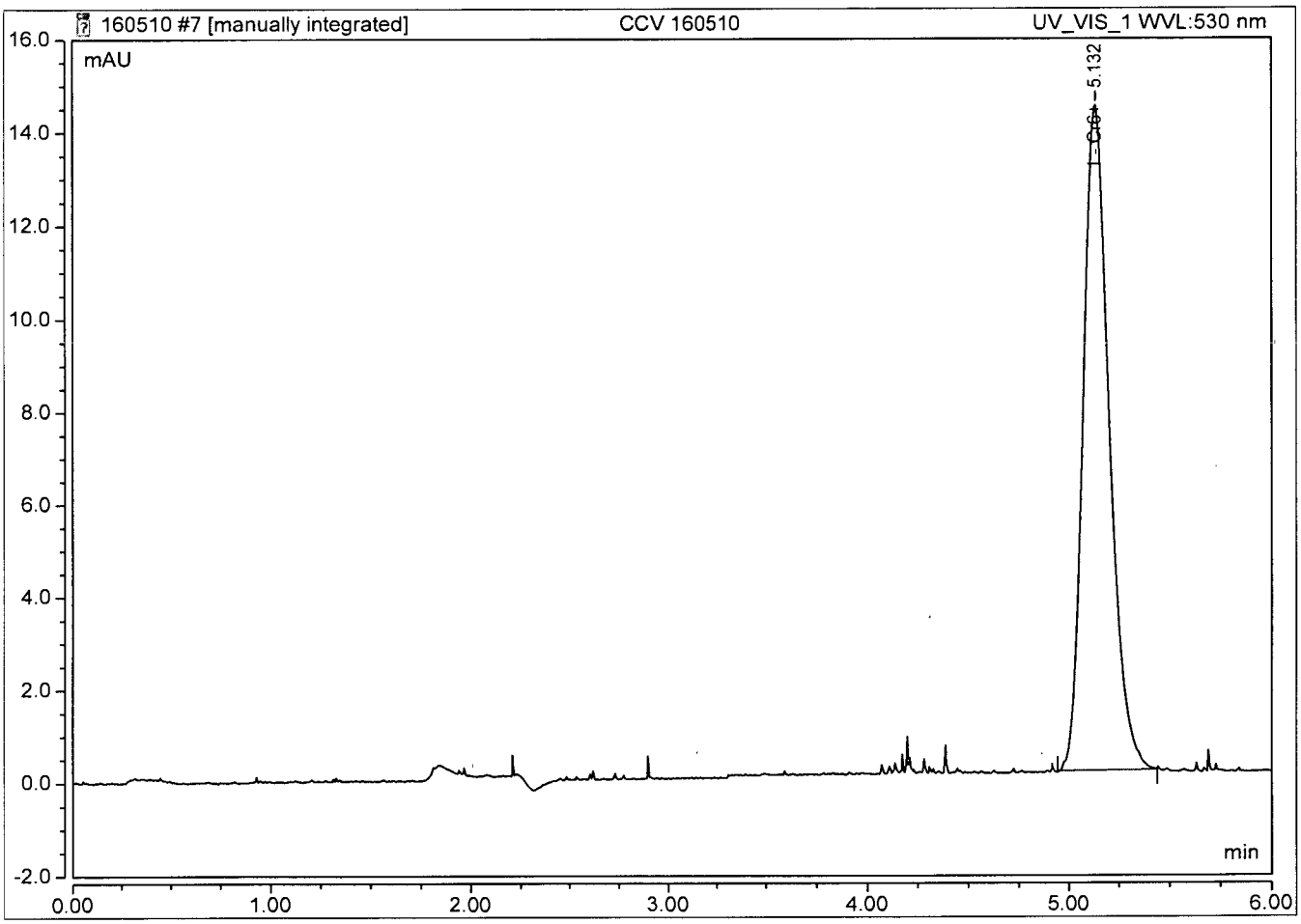
(1) Control Limits: 90-110

ILM02.0

Peak Integration Report

Sample Name:	**CCV 160510**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 11:16**	*Run Time:*	**6.00**

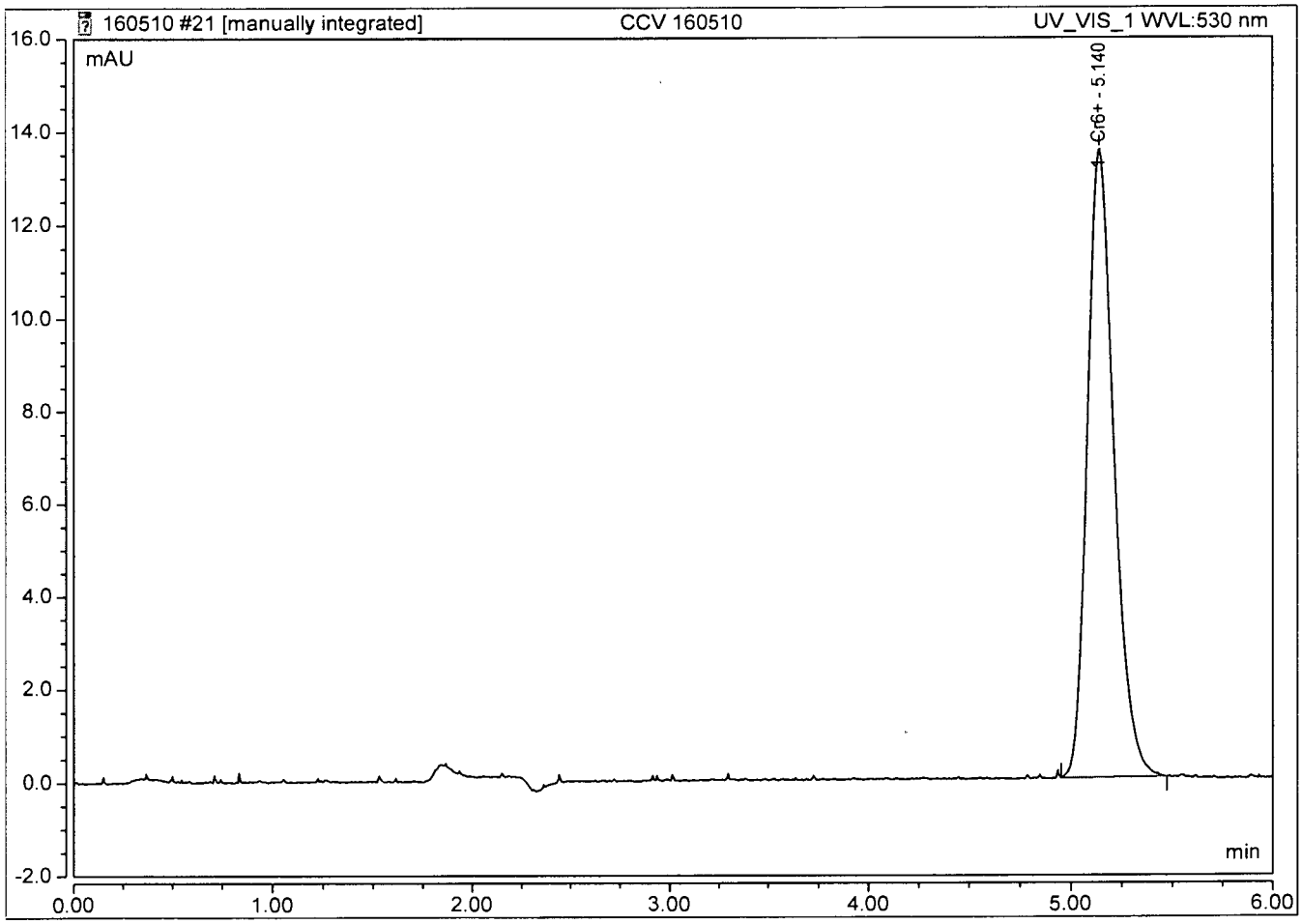
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.13	Cr6+	BMB*	2.155	14.314	9.9179
		TOTAL:		2.16	14.31	9.92



Peak Integration Report

Sample Name:	**CCV 160510**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 13:20**	*Run Time:*	**6.00**

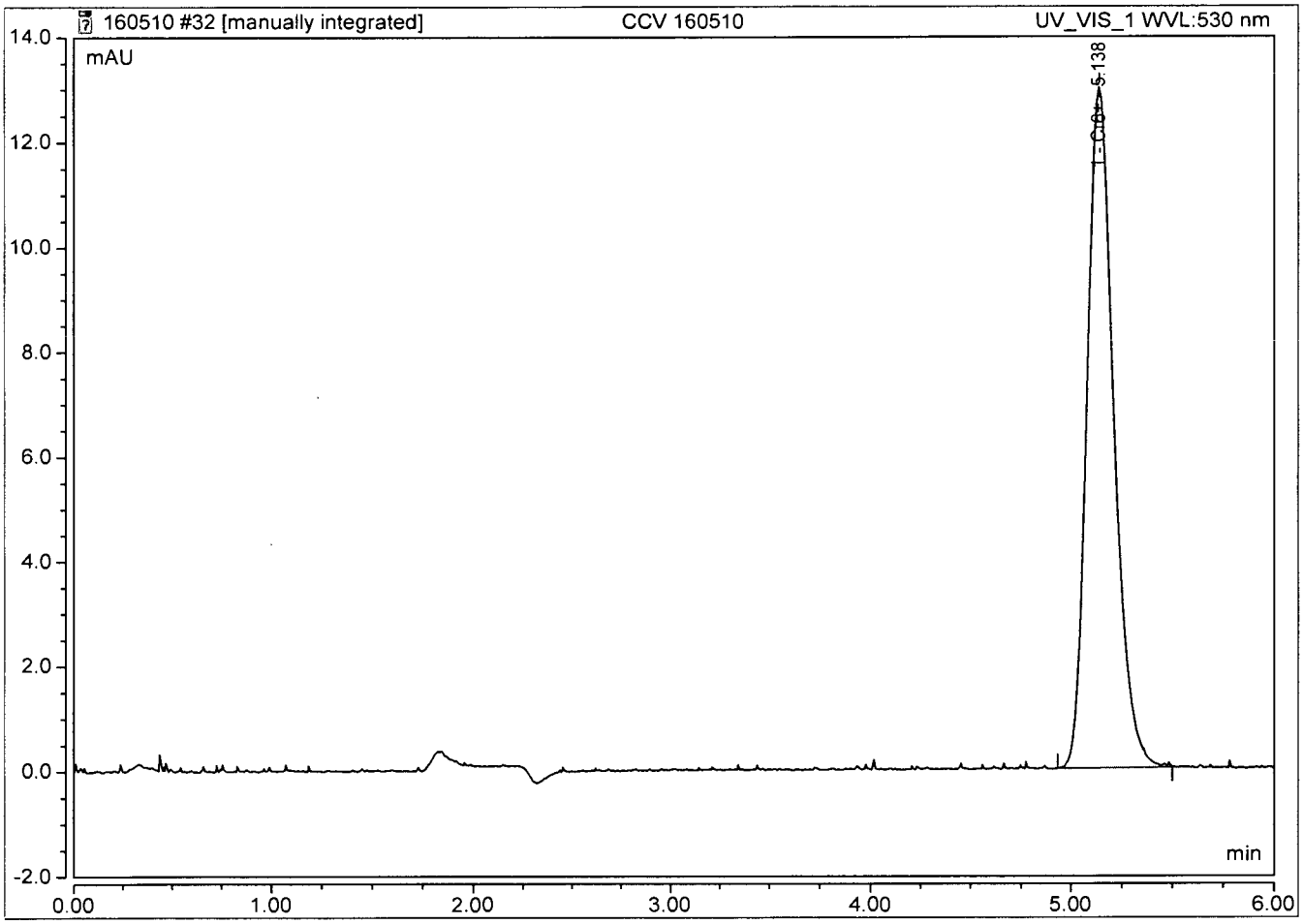
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.14	Cr6+	BMB*	2.050	13.497	9.4328
		TOTAL:		2.05	13.50	9.43



Peak Integration Report

Sample Name:	**CCV 160510**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 14:57**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.14	Cr6+	BMB*	1.976	12.981	9.0946
		TOTAL:		1.98	12.98	9.09



A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No.: 79769 SDG: 79769

Preparation Blank Matrix (soil/water): water

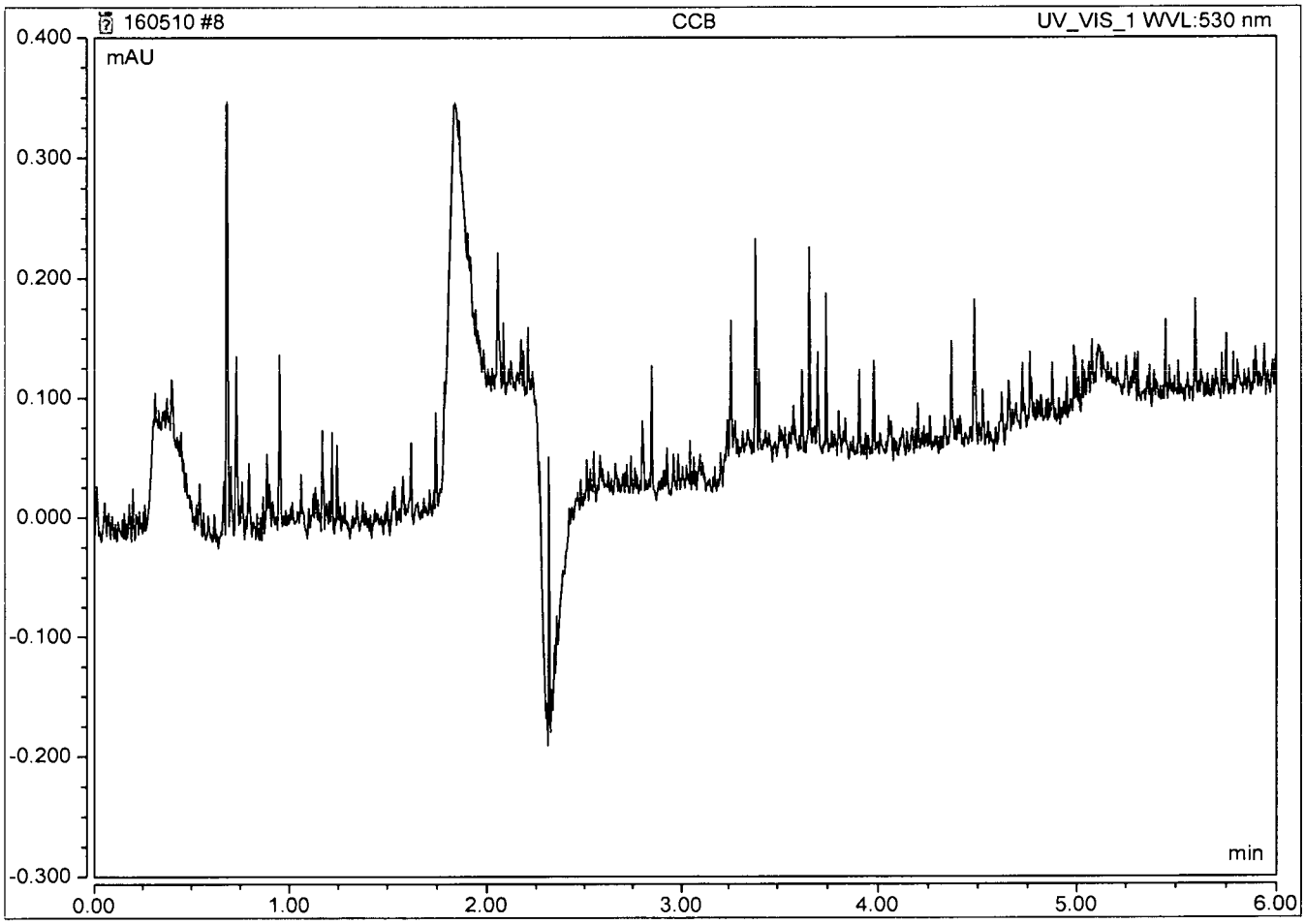
Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Calibration Blanks										M
	CCB 05/10/16 11:24	C	CCB 05/10/16 13:29	C	CCB 05/10/16 15:06	C		C		C	
Hex Chrome	.500	U	.500	U	.500	U					

Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 11:24**	*Run Time:*	**6.00**

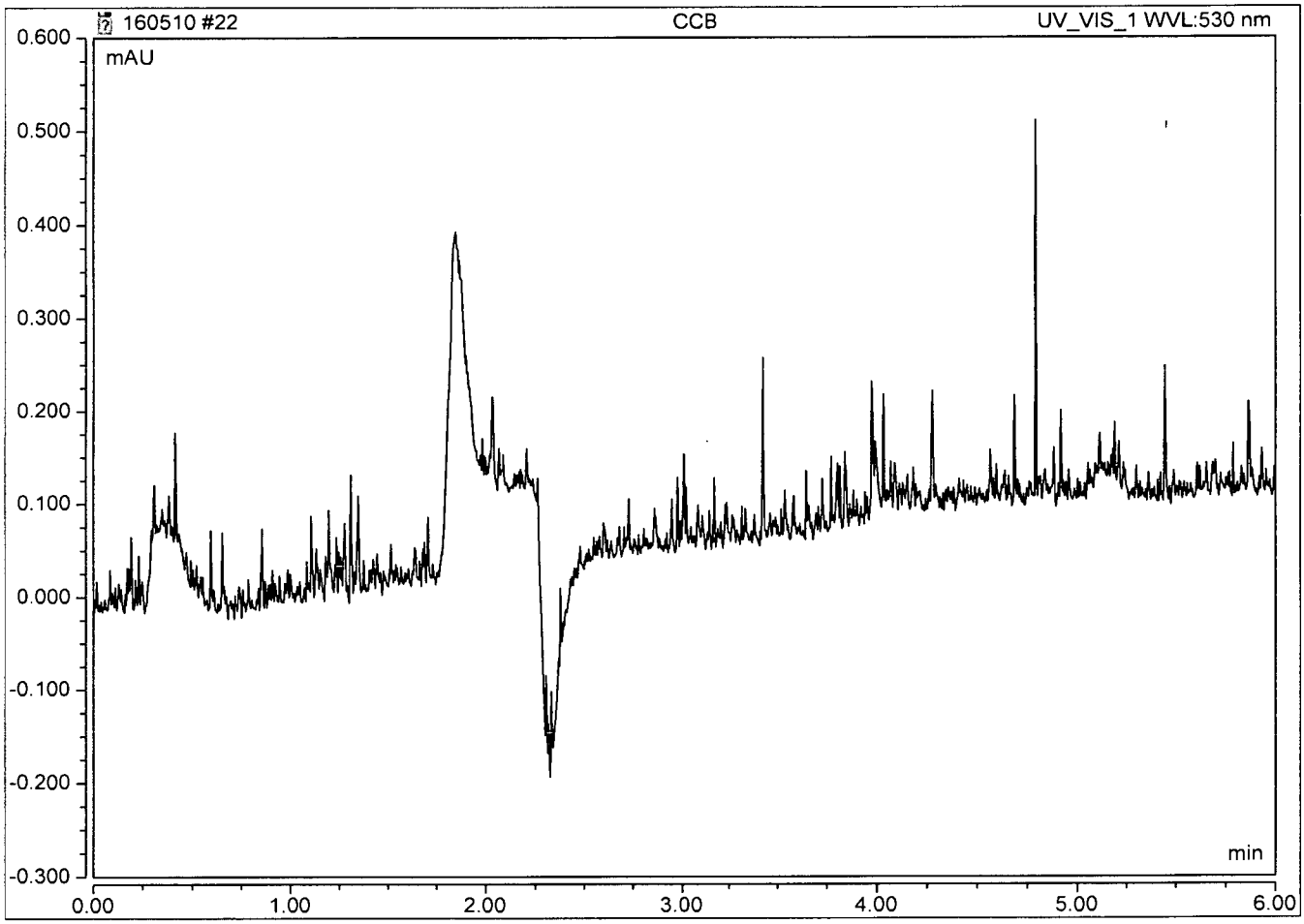
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 13:29**	*Run Time:*	**6.00**

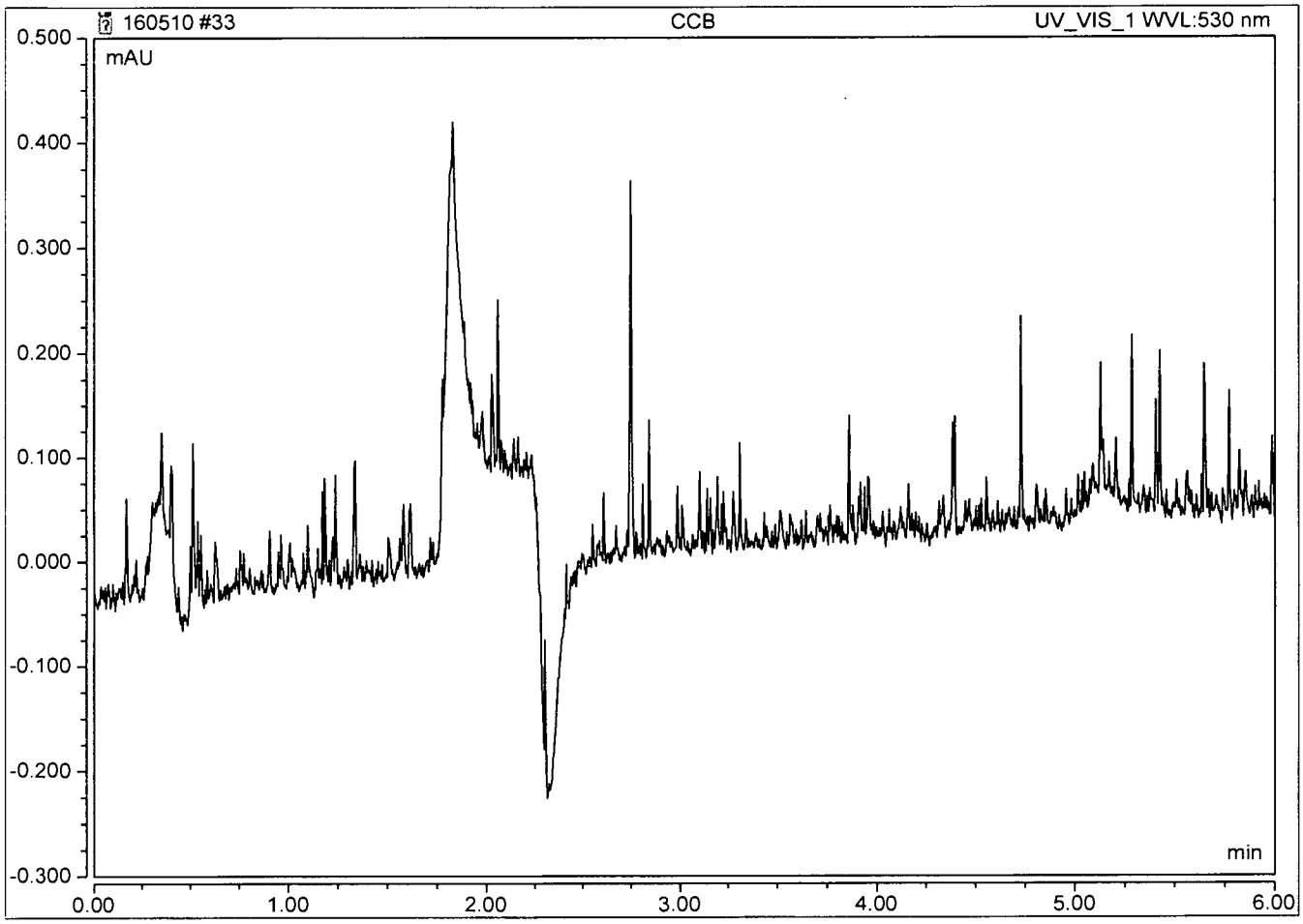
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 15:06**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories
ARF No: 79769 SDG: 79769
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 05/12/16

Analyte	Calibration Verification									M
	True CCV1	Found 15:12	%R(1)	True CCV1	Found 15:56	%R(1)	True	Found	%R(1)	
Hex Chrome	10	10.3546	104	10	10.483	105				

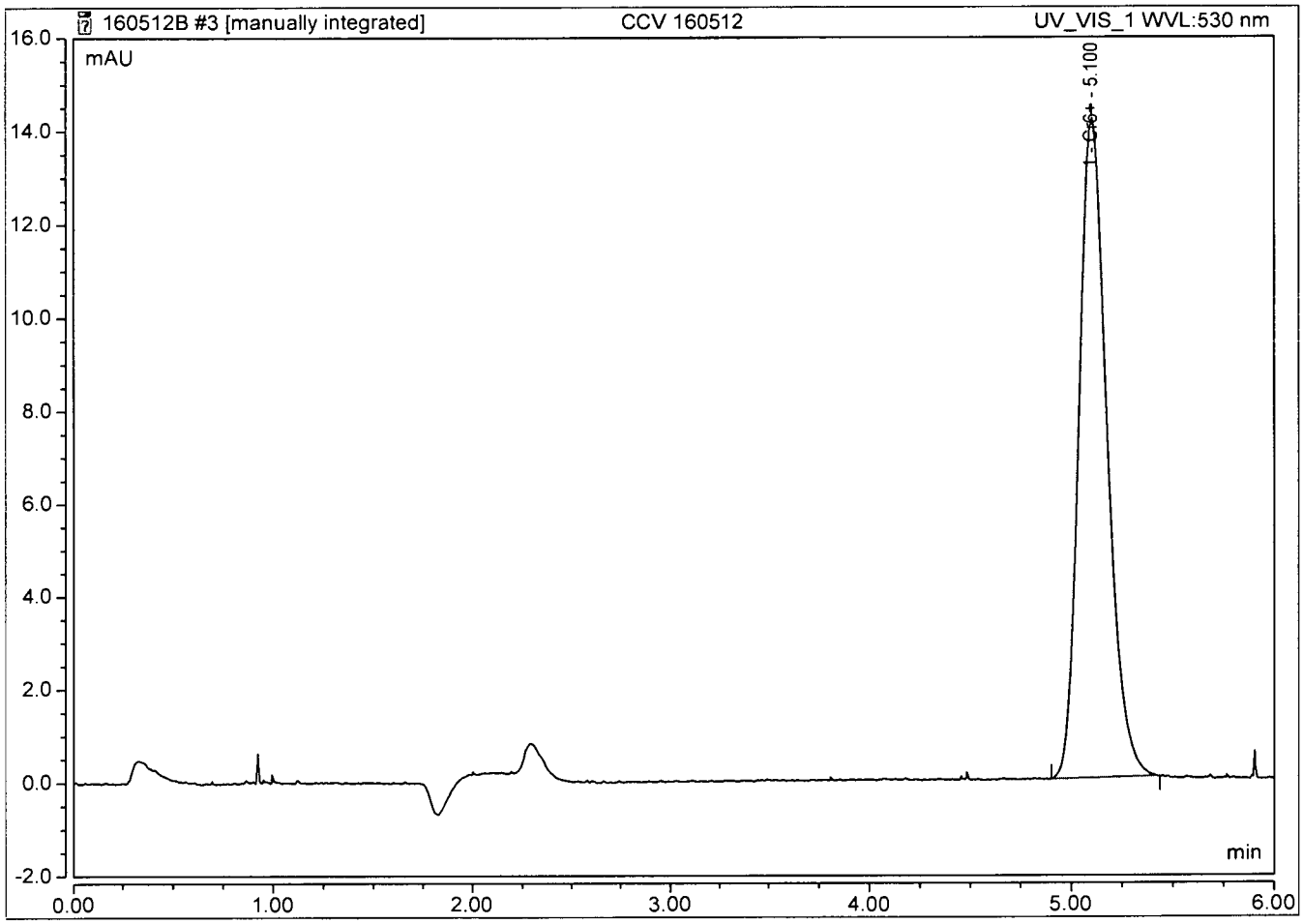
(1) Control Limits: 90-110

ILM02.0

Peak Integration Report

Sample Name:	**CCV 160512**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**12-May-2016 / 15:12**	*Run Time:*	**6.00**

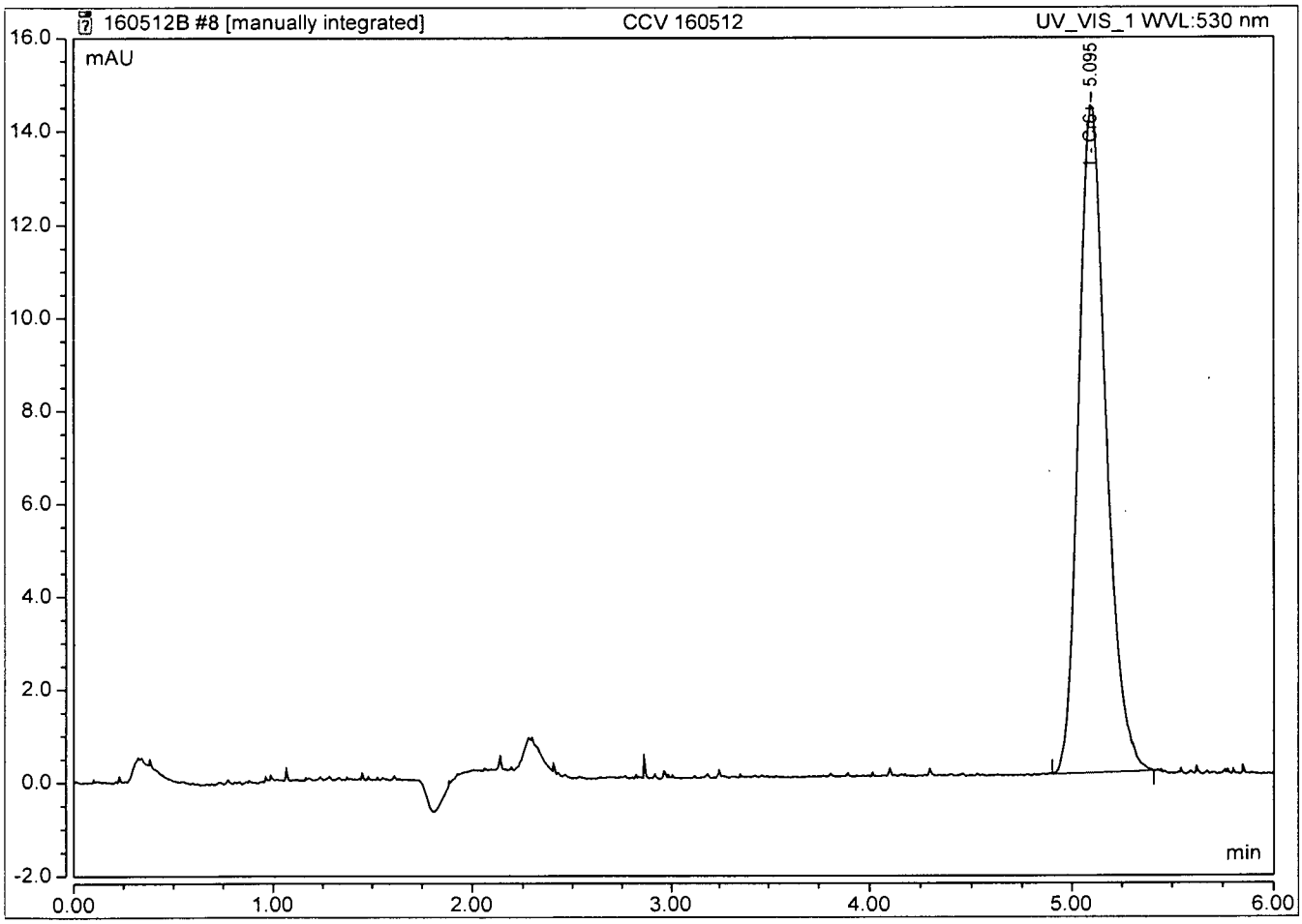
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.10	Cr6+	BMB*	2.250	14.167	10.3546
		TOTAL:		2.25	14.17	10.35



Peak Integration Report

Sample Name:	**CCV 160512**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**12-May-2016 / 15:56**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.09	Cr6+	BMB*	2.278	14.314	10.4830
		TOTAL:		2.28	14.31	10.48



A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: ASSET Laboratories

ARF No.: 79769 SDG: 79769

Preparation Blank Matrix (soil/water): water

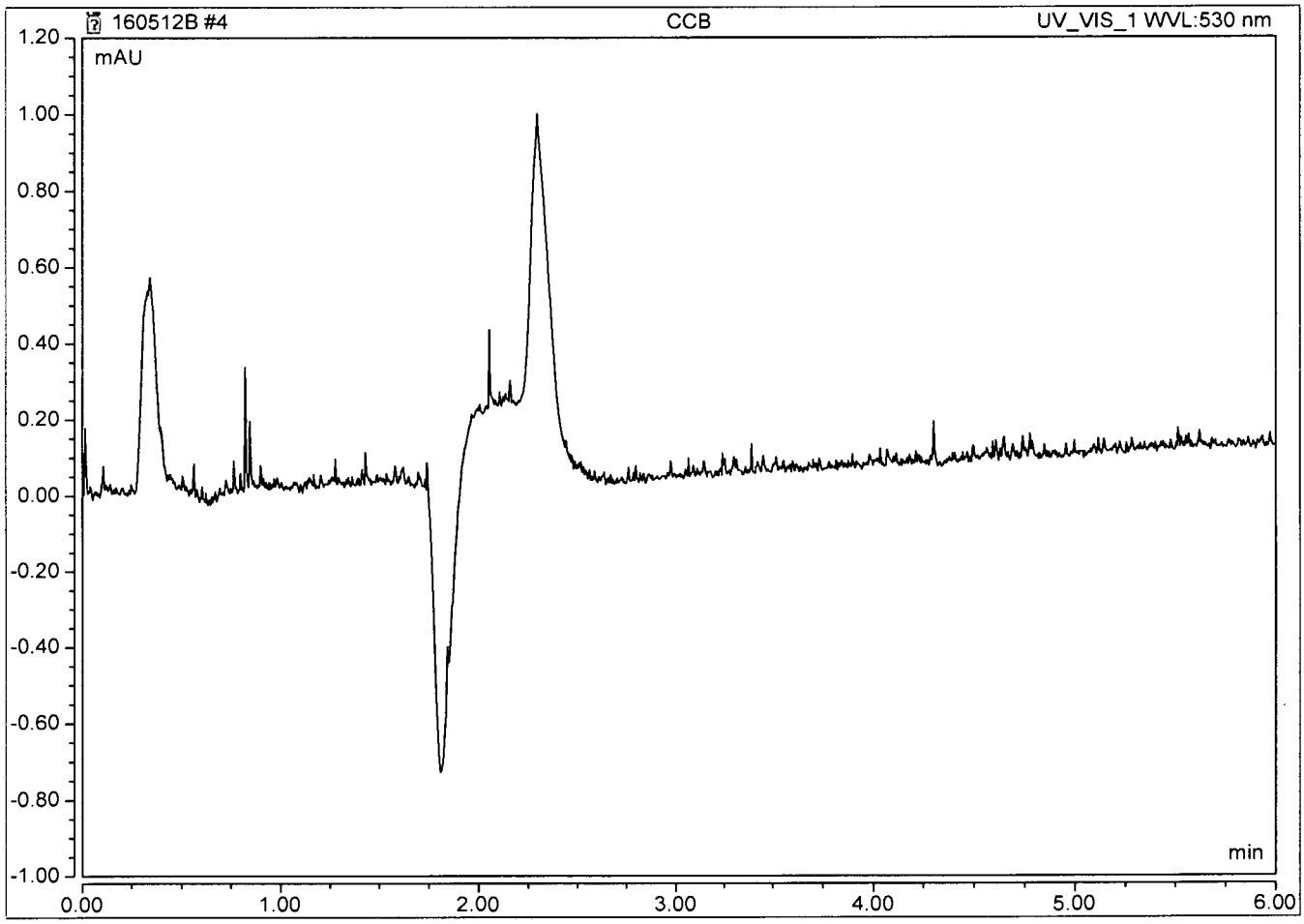
Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Calibration Blanks										M
	CCB 05/12/16 15:20	C	CCB 05/12/16 16:05	C		C		C		C	
Hex Chrome	.500	U	.500	U							

Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**12-May-2016 / 15:20**	*Run Time:*	**6.00**

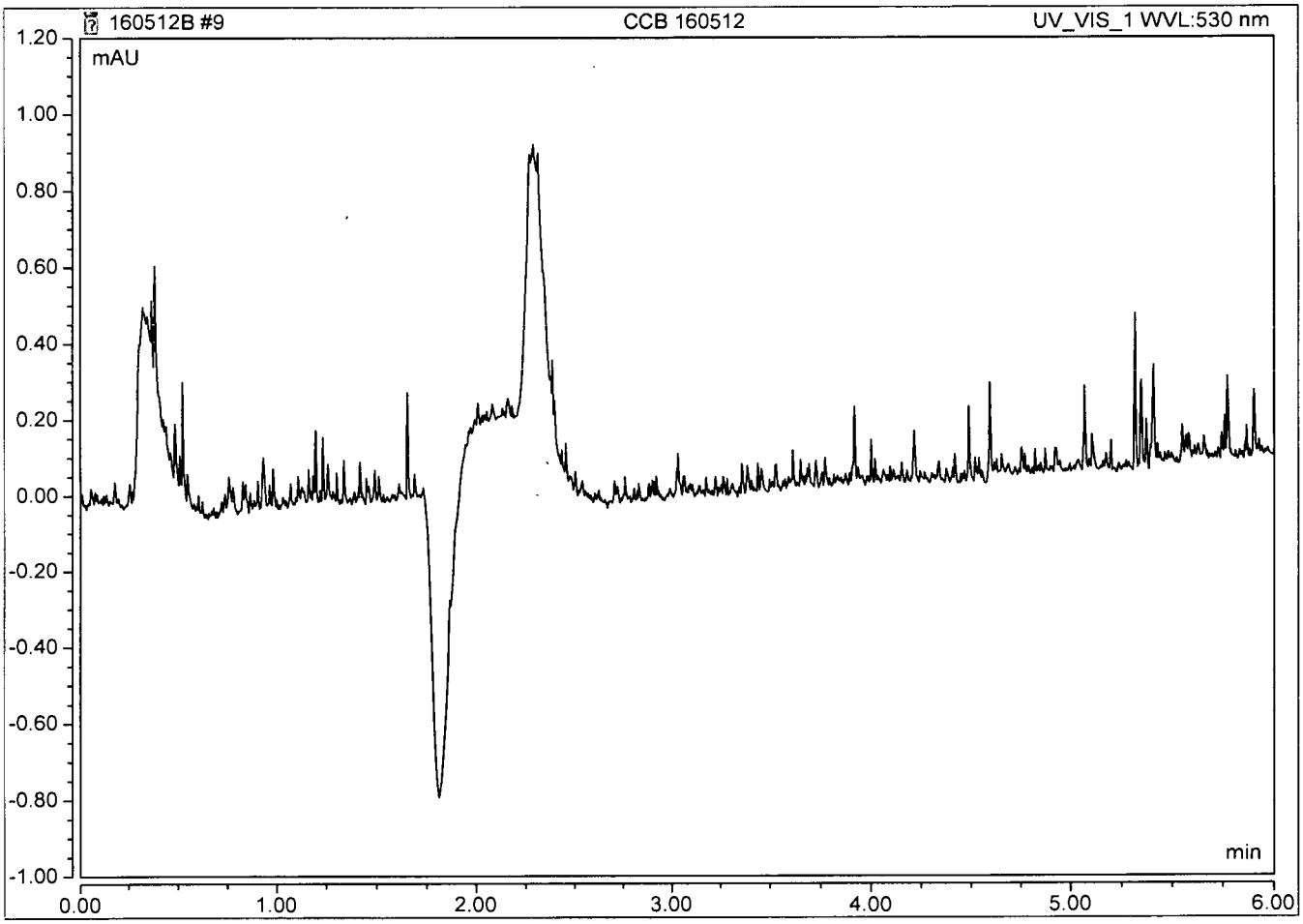
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



Peak Integration Report

Sample Name:	**CCB 160512**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**12-May-2016 / 16:05**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
		TOTAL:		0.00	0.00	0.00



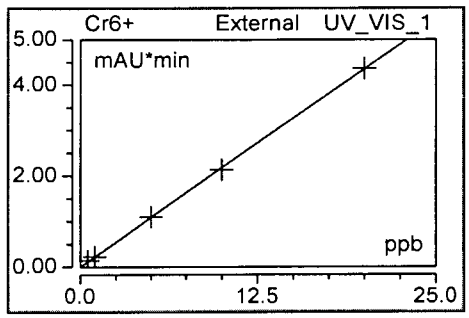
Calibration Batch Report

Sequence:	**160419**	*Injection Volume:*	**1,000.00**
Instrument Method:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 14:43**	*Run Time:*	**6.0008333**

Calibration Summary

Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Coeff.Det. %
Cr6+	Area	Lin, Avg	5.000	0.000	0.217	0.000	99.9753
		AVERAGE:		0.0000	0.2173	0.0000	99.9753

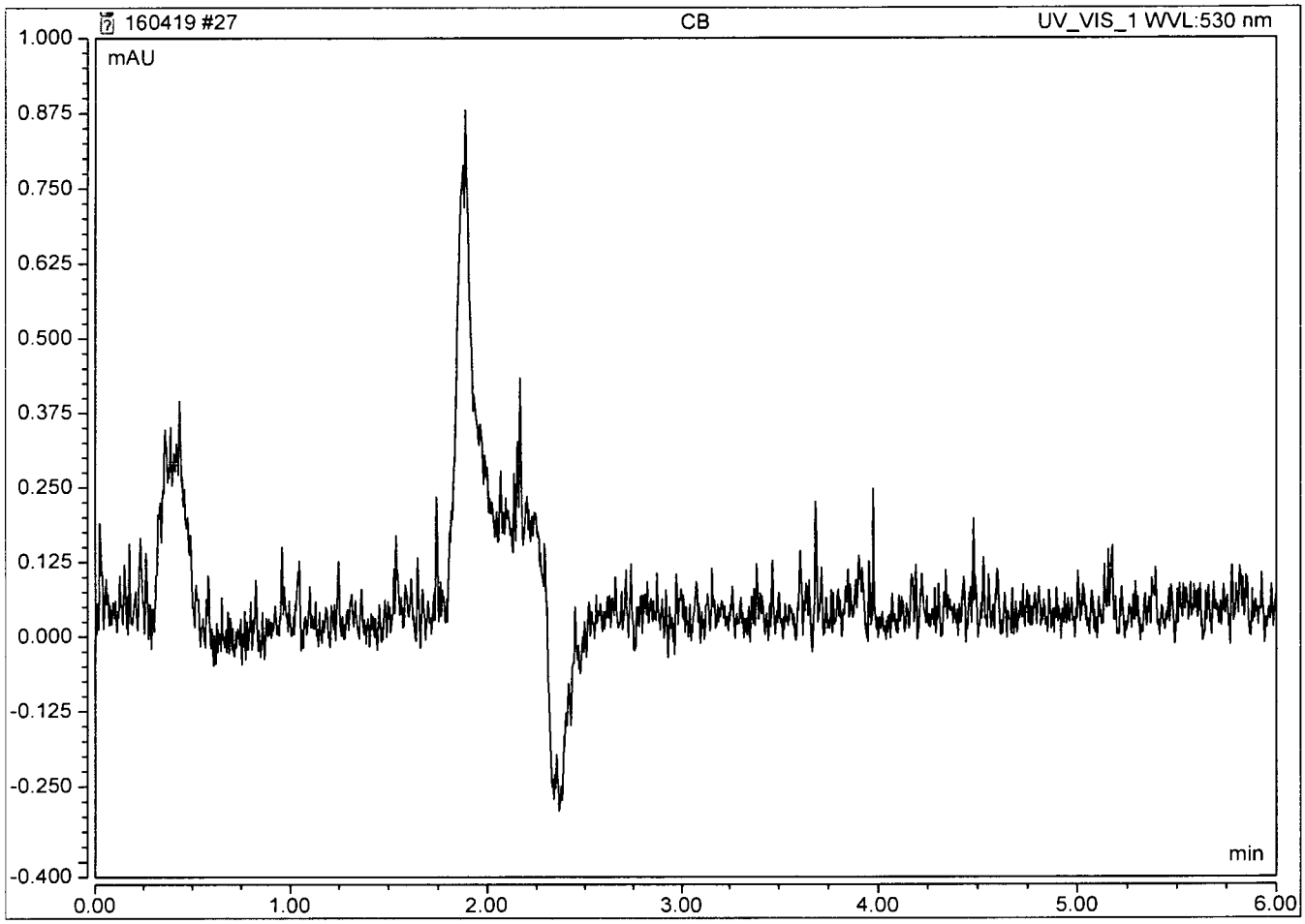
Injection Name	Ret.Time min UV_VIS_1	Area mAU*min UV_VIS_1	Height mAU UV_VIS_1	Amount ppb UV_VIS_1
	Cr6+	Cr6+	Cr6+	Cr6+
I Cal 0.5	5.114	0.1408	0.821	0.648
I Cal 1.0	5.159	0.2256	1.352	1.038
I Cal 5.0	5.159	1.0984	6.609	5.055
I Cal 10	5.151	2.1584	12.757	9.933
I Cal 20	5.156	4.3611	26.168	20.070
Average	5.148			
Rel. Std. Dev.	0.372 %			



Peak Integration Report

Sample Name:	**CB**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 14:35**	*Run Time:*	**6.00**

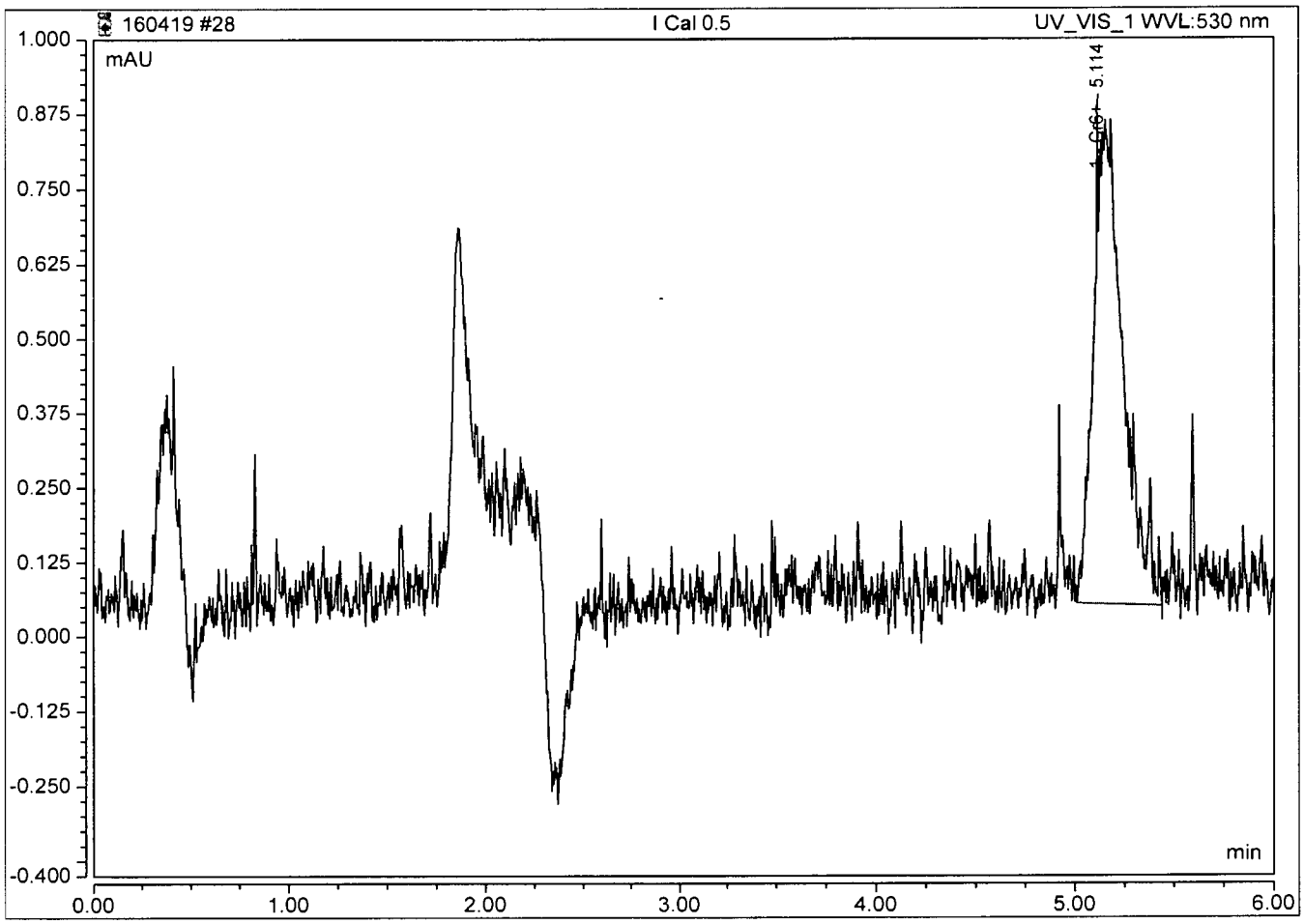
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount n.a.
TOTAL:				0.00	0.00	0.00



Peak Integration Report

Sample Name:	**I Cal 0.5**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 14:43**	*Run Time:*	**6.00**

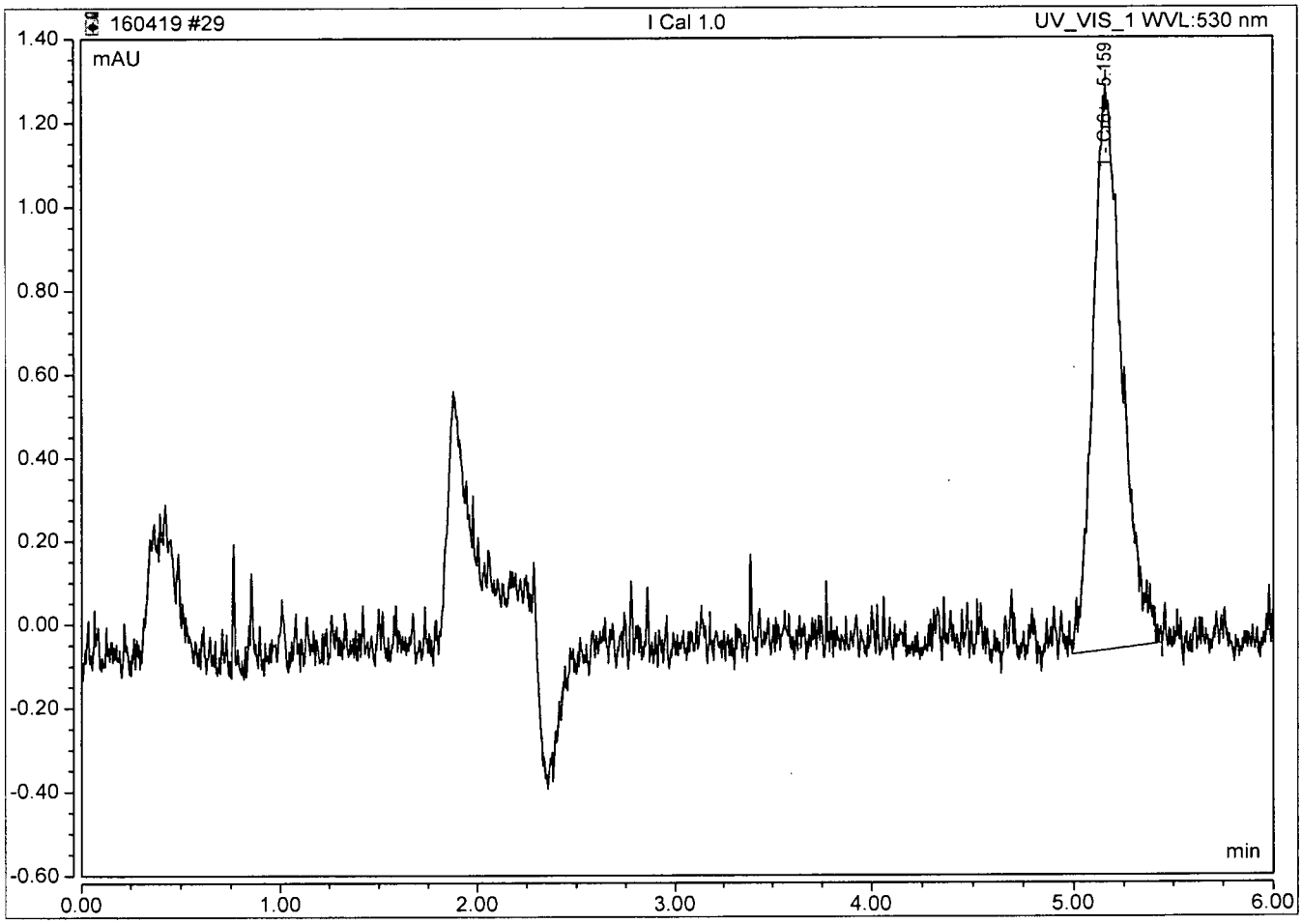
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.11	Cr6+	BMB	0.141	0.821	0.6478
		TOTAL:		0.14	0.82	0.65



Peak Integration Report

Sample Name:	**I Cal 1.0**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 14:52**	*Run Time:*	**6.00**

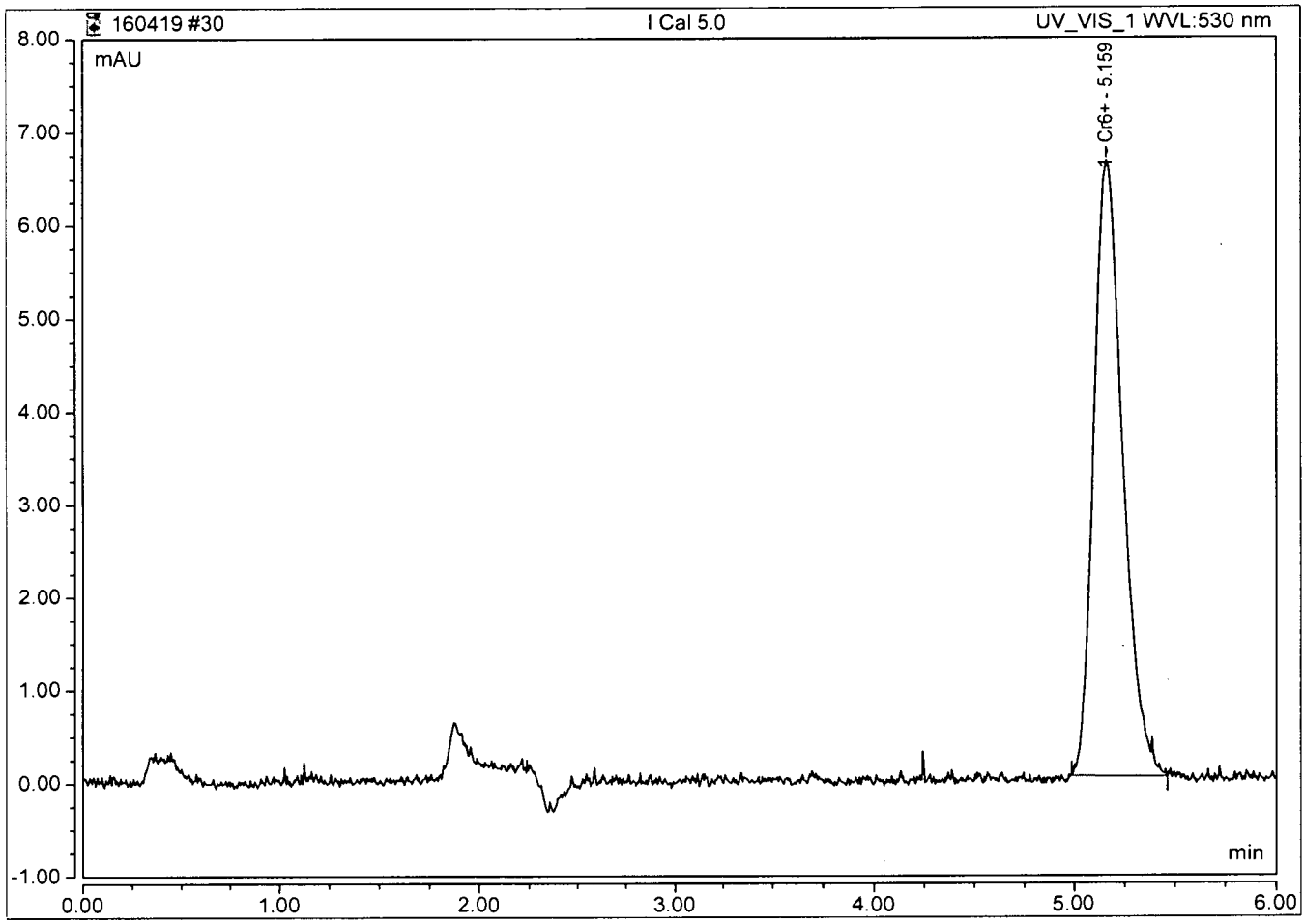
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.16	Cr6+	BMB	0.226	1.352	1.0384
		TOTAL:		0.23	1.35	1.04



Peak Integration Report

Sample Name:	**I Cal 5.0**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:00**	*Run Time:*	**6.00**

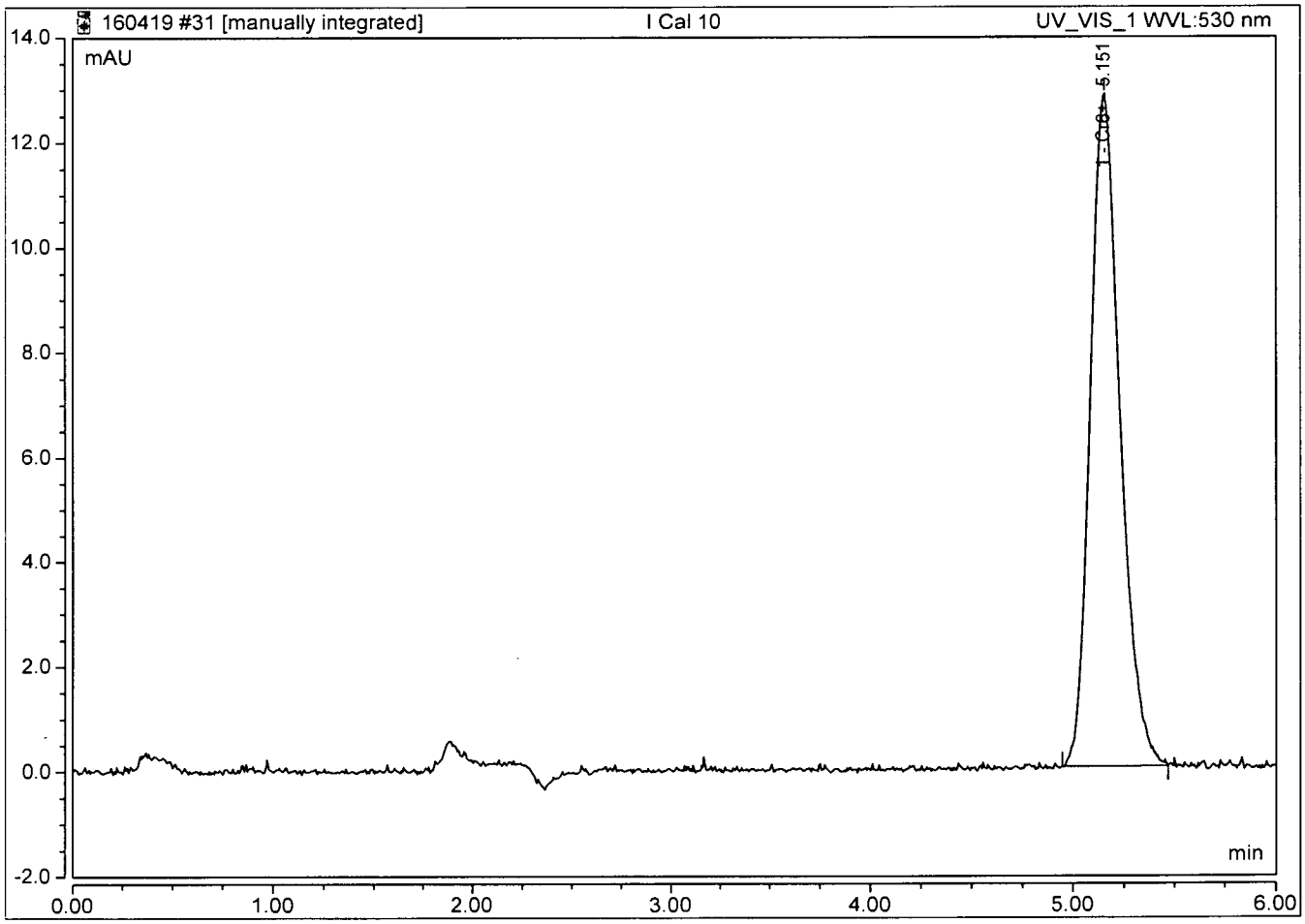
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.16	Cr6+	BMB	1.098	6.609	5.0552
		TOTAL:		1.10	6.61	5.06



Peak Integration Report

Sample Name:	**I Cal 10**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:08**	*Run Time:*	**6.00**

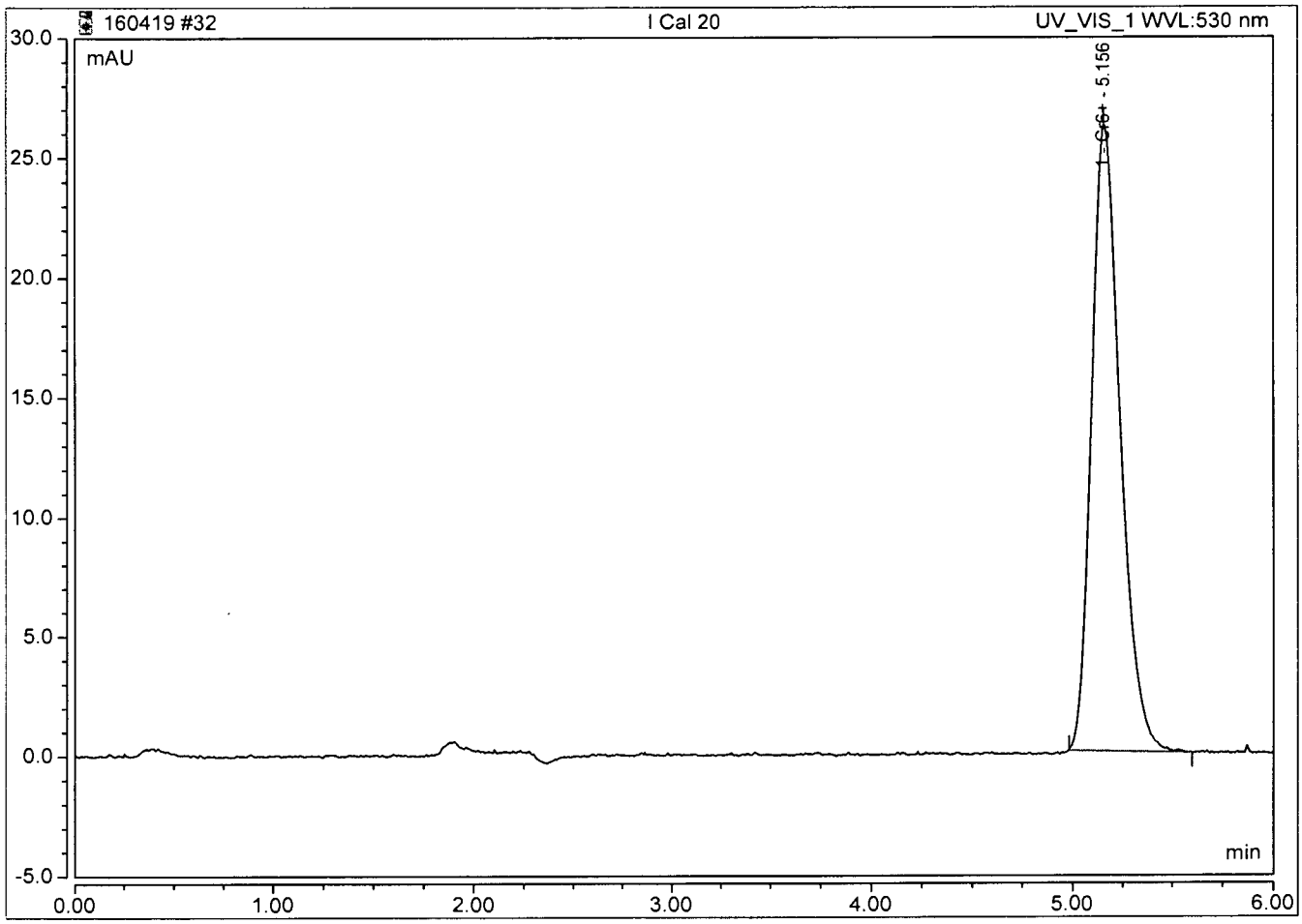
No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.15	Cr6+	BMB*	2.182	12.816	10.0003
		TOTAL:		2.18	12.82	10.00



Peak Integration Report

Sample Name:	**I Cal 20**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**19-Apr-2016 / 15:17**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.16	Cr6+	BMB	4.361	26.168	20.0705
		TOTAL:		4.36	26.17	20.07



INORGANIC ANALYSIS
Raw Data

APPL, INC.

WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	PQL	MDL	Units	Prep Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	05/12/16	05/12/16	#2187-160512A-AZ35060
EPA 218.7	HEXAVALENT CHROMIUM	Not detected	0.50	0.090	ug/L	05/10/16	05/10/16	#2187-160510A-AZ34899

Wetlab SC-Blank-REG MDLs
Printed: 05/23/16 7:00:17 AM

Laboratory Control Spike Recovery

WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

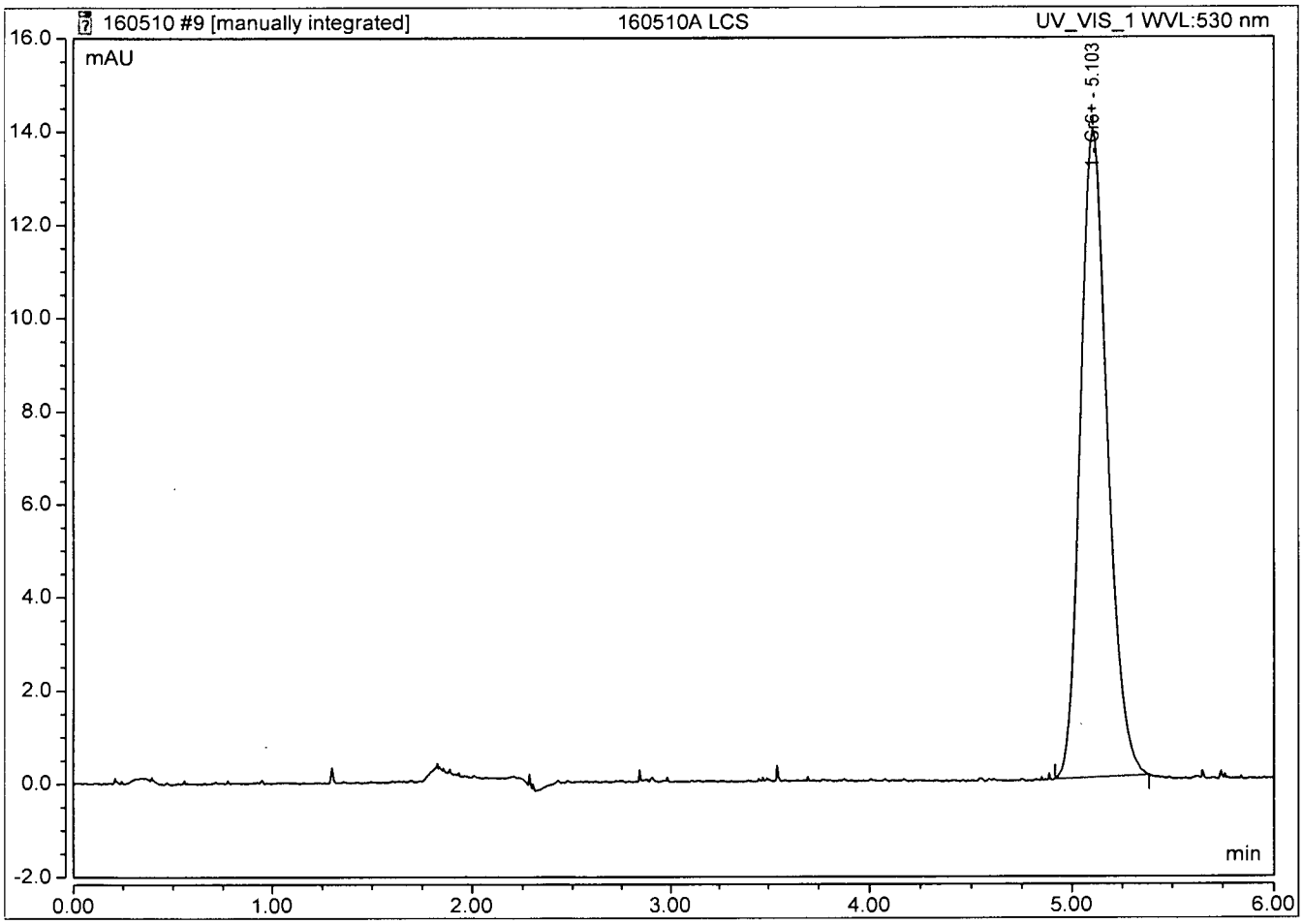
Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	10.00	9.95	99.5	90-110	05/10/16	05/10/16	#2187-160510A-AZ34899

Comments: _____

Peak Integration Report

Sample Name:	**160510A LCS**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**10-May-2016 / 11:33**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.10	Cr6+	BMB*	2.163	13.909	9.9538
		TOTAL:		2.16	13.91	9.95



Algorithm Check
$y = mx + b$ mm
$x = 9.95$ ✓ 5/23/16

Laboratory Control Spike Recovery

WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

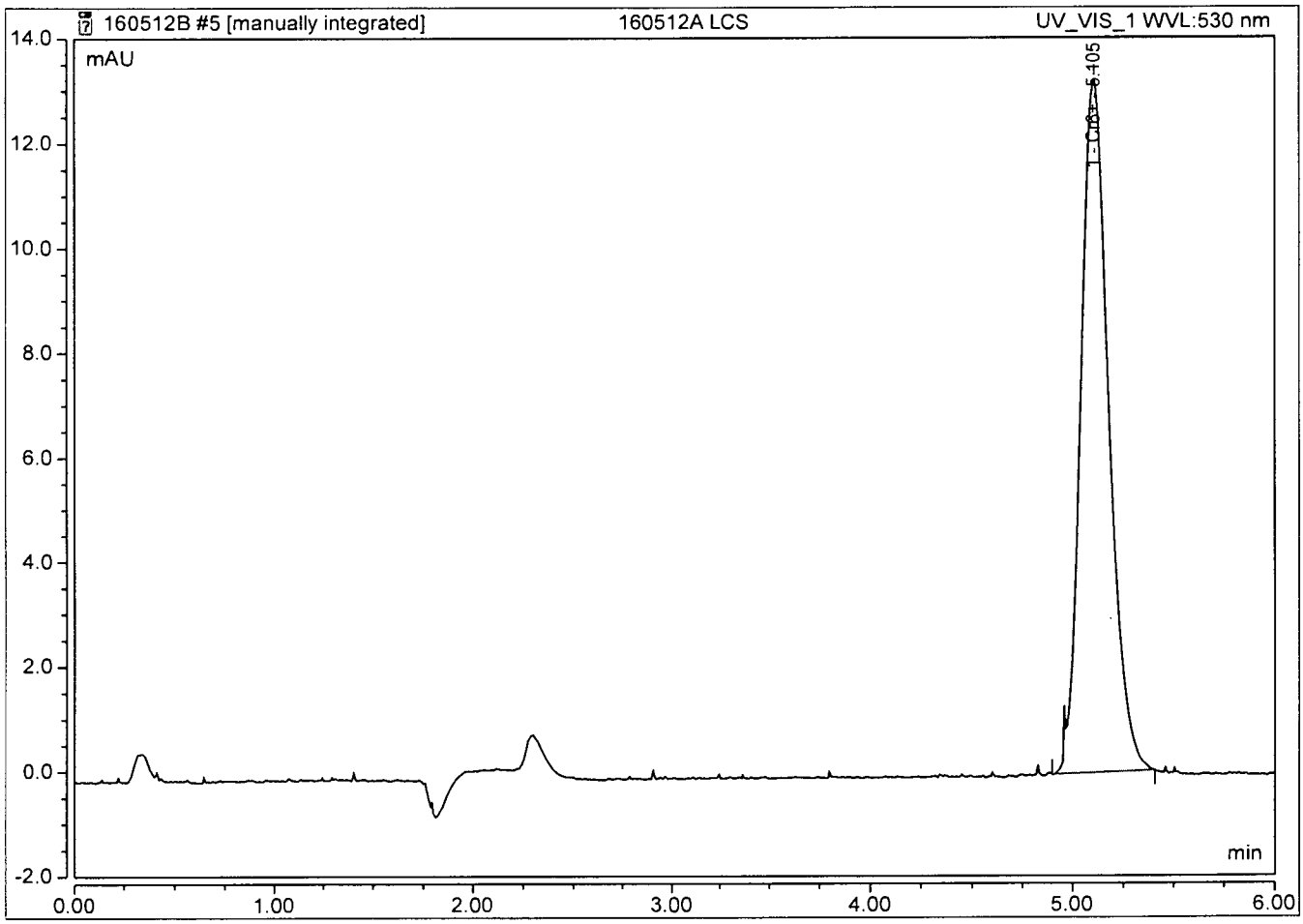
Method	Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits	Extract Date	Analysis Date	QC Group
EPA 218.7	HEXAVALENT CHROMIUM	10.00	9.70	97.0	90-110	05/12/16	05/12/16	#2187-160512A-AZ35060

Comments: _____

Peak Integration Report

Sample Name:	**160512A LCS**	*Inj. Vol.:*	**1000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Program:	**HexChrom Method**	*Operator:*	**chemist_wetlab**
Inj. Date / Time:	**12-May-2016 / 15:28**	*Run Time:*	**6.00**

No.	Time min	Peak Name	Peak Type	Area mAU*min	Height mAU	Amount ppb
1	5.10	Cr6+	BMB*	2.108	13.238	9.7006
		TOTAL:		2.11	13.24	9.70



Algorithm Check

$y = mx + b$ MM

$x = 9.7$ ✓ 5/23/16

7199 Hexavalent Chromium Standard Prep

Prep'd by: DT
Prep Date: 1/22/16
Exp Date: 7/22/16

100 ppm CCV: 1mL of 1000 ppm Cr6+ o2si lot 1054163-33199 (exp 12/8/15) brought up to 100 mL with DI
100 ppm ICV: 1 mL of 1000 ppm Cr6+ CPI lot 13C150-33180 (exp 12/14/16) brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 4/19/16
Exp Date: 4/20/16

1000 ppb CCV: 1mL of 100 ppm CCV (prep: 1/22/16) and 1 mL of preservative brought up to 100 mL with DI
1000 ppb ICV: 1 mL of 100 ppm ICV (prep: 1/22/16) and 1 mL of preservtive brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 4/19/16
Exp Date: 4/20/16

				ICAL #1	ICAL #2	ICAL #3	ICAL #4	ICAL #5
	ug/L	Prep date	Exp Date	mL	mL	mL	mL	mL
CCV Stock	1000	04/19/16	04/20/16	-	-	1	1	1
ICAL #4	10	04/19/16	04/20/16	10	10	-	-	-
Brought up w/ DI to final volume of (mL):				200	100	200	100	50
Final Conc Cr6+ (ug/L):				0.50	1.00	5.00	10.00	20.00
CCV made the same as ICAL#4								
ICV/LCS: 1 mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 100 mL DI								
MS/MSD: 0.25 mL mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 25 mL of sample								

Preservative added to all standards:
0.25 mL into 25 mL of standard
0.5 mL into 50 mL of standard
1 mL into 100 mL of standard

7199 Hexavalent Chromium Standard Prep

Prep'd by: DT
Prep Date: 1/22/16
Exp Date: 7/22/16

100 ppm CCV: 1mL of 1000 ppm Cr6+ o2si lot 1054163-33199 (exp 12/8/15) brought up to 100 mL with DI
100 ppm ICV: 1 mL of 1000 ppm Cr6+ CPI lot 13C150-33180 (exp 12/14/16) brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 5/10/16
Exp Date: 5/11/16

1000 ppb CCV: 1mL of 100 ppm CCV (prep: 1/22/16) and 1 mL of preservative brought up to 100 mL with DI
1000 ppb ICV: 1 mL of 100 ppm ICV (prep: 1/22/16) and 1 mL of preservtive brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 5/10/16
Exp Date: 5/11/16

CCV: 1 mL of CCV stock (prep: 5/10/16) brought up to 100 mL
ICV/LCS: 1 mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 100 mL DI
MS/MSD: 0.25 mL mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 25 mL of sample

Preservative added to all standards:
0.25 mL into 25 mL of standard
0.5 mL into 50 mL of standard
1 mL into 100 mL of standard

7199 Hexavalent Chromium Standard Prep

Prep'd by: DT
Prep Date: 1/22/16
Exp Date: 7/22/16

100 ppm CCV: 1mL of 1000 ppm Cr6+ o2si lot 1054163-33199 (exp 12/8/15) brought up to 100 mL with DI
100 ppm ICV: 1 mL of 1000 ppm Cr6+ CPI lot 13C150-33180 (exp 12/14/16) brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 5/12/16
Exp Date: 5/13/16

1000 ppb CCV: 1mL of 100 ppm CCV (prep: 1/22/16) and 1 mL of preservative brought up to 100 mL with DI
1000 ppb ICV: 1 mL of 100 ppm ICV (prep: 1/22/16) and 1 mL of preservtive brought up to 100 mL with DI

Prep'd by: LF
Prep Date: 5/12/16
Exp Date: 5/13/16

CCV: 1 mL of CCV stock (prep: 5/10/16) brought up to 100 mL
ICV/LCS: 1 mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 100 mL DI
MS/MSD: 0.25 mL mL of 1000 ppb ICV source (prep: 4/19/16) brought up to 25 mL of sample

Preservative added to all standards:
0.25 mL into 25 mL of standard
0.5 mL into 50 mL of standard
1 mL into 100 mL of standard

7199 Injection Log

Directory: I:\Dionex\Charlie\HexaChrome\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
27	19 Apr 2016	14:35	CB		160419	1.
28	19 Apr 2016	14:43	I Cal 0.5		160419	1.
29	19 Apr 2016	14:52	I Cal 1.0		160419	1.
30	19 Apr 2016	15:00	I Cal 5.0		160419	1.
31	19 Apr 2016	15:08	I Cal 10		160419	1.
32	19 Apr 2016	15:17	I Cal 20		160419	1.
33	19 Apr 2016	15:25	ICV 160418		160419	1.
37	19 Apr 2016	15:59	ICB		160419	1.

7199 Injection Log

Directory: I:\Dionex\Charlie\HexaChrome\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
7	10 May 2016	11:16	CCV 160510		160510	1.
8	10 May 2016	11:24	CCB		160510	1.
9	10 May 2016	11:33	160510A LCS		160510	1.
19	10 May 2016	12:57	AZ35061W02		160510	1.
20	10 May 2016	13:05	AZ35062W02		160510	1.
21	10 May 2016	13:20	CCV 160510		160510	1.
22	10 May 2016	13:29	CCB		160510	1.
23	10 May 2016	13:37	AZ35063W01		160510	1.
24	10 May 2016	13:45	AZ35064W01		160510	1.
25	10 May 2016	13:54	AZ35065W01		160510	1.
26	10 May 2016	14:02	AZ35066W01		160510	1.
27	10 May 2016	14:15	AZ35067W01		160510	1.
28	10 May 2016	14:24	AZ35068W01		160510	1.
32	10 May 2016	14:57	CCV 160510		160510	1.
33	10 May 2016	15:06	CCB		160510	1.

7199 Injection Log

Directory: I:\Dionex\Charlie\HexaChrome\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
3	12 May 2016	15:12	CCV 160512		160512B	1.
4	12 May 2016	15:20	CCB		160512B	1.
5	12 May 2016	15:28	160512A LCS		160512B	1.
7	12 May 2016	15:45	AZ35060W01		160512B	1.
8	12 May 2016	15:56	CCV 160512		160512B	1.
9	12 May 2016	16:05	CCB 160512		160512B	1.

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.801A

ASSET Laboratories Work Order: N019730

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N019730

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-47
Sample Receiving Items	48-53
List of Analysts	54
Raw Data	
EPA 120.1	55-58
SM 4500 H+B	59-63
SM 2540C	64-74
EPA 218.6	75-159
SM 2320B	160-169
EPA 300	170-197
SM 3500-Cr B	198-210
SM 4500-NO3F	211-224
EPA 6010B_Dissolved	225-277
EPA 6020_Dissolved	278-313

May 26, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N019730

RE: PG&E Topock - PMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 10, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Glen Gesmundo
QA Manager

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N019730

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Iron on QC sample N019639-019B-MS1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *26-May-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N019730
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019730-001A	PE-01-0516	Groundwater	5/10/2016 11:30:00 AM	5/10/2016	5/26/2016
N019730-001B	PE-01-0516	Groundwater	5/10/2016 11:30:00 AM	5/10/2016	5/26/2016
N019730-001C	PE-01-0516	Groundwater	5/10/2016 11:30:00 AM	5/10/2016	5/26/2016
N019730-001D	PE-01-0516	Groundwater	5/10/2016 11:30:00 AM	5/10/2016	5/26/2016
N019730-002A	TW-03D-0516	Groundwater	5/10/2016 11:15:00 AM	5/10/2016	5/26/2016
N019730-002B	TW-03D-0516	Groundwater	5/10/2016 11:15:00 AM	5/10/2016	5/26/2016
N019730-002C	TW-03D-0516	Groundwater	5/10/2016 11:15:00 AM	5/10/2016	5/26/2016
N019730-002D	TW-03D-0516	Groundwater	5/10/2016 11:15:00 AM	5/10/2016	5/26/2016
N019730-003A	TW-02D-0516	Groundwater	5/10/2016 11:40:00 AM	5/10/2016	5/26/2016
N019730-003B	TW-02D-0516	Groundwater	5/10/2016 11:40:00 AM	5/10/2016	5/26/2016
N019730-003C	TW-02D-0516	Groundwater	5/10/2016 11:40:00 AM	5/10/2016	5/26/2016
N019730-003D	TW-02D-0516	Groundwater	5/10/2016 11:40:00 AM	5/10/2016	5/26/2016

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-001

Client Sample ID: PE-01-0516
Collection Date: 5/10/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160511F**	QC Batch: **R108404**			PrepDate			Analyst: **RB**
Specific Conductance	3400	0.10	0.10		umhos/cm	1	5/11/2016 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-002

Client Sample ID: TW-03D-0516
Collection Date: 5/10/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160511F**	QC Batch: **R108404**			PrepDate			Analyst: **RB**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	5/11/2016 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-0516
Lab Order:	N019730	**Collection Date:**	5/10/2016 11:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N019730-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160511F**	QC Batch: **R108404**			PrepDate			Analyst: **RB**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	5/11/2016 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N019730-003CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:					RunNo: **108404**		
Client ID: **ZZZZZZ**	Batch ID: **R108404**	TestNo: **EPA 120.1**		Analysis Date: **5/11/2016**					SeqNo: **2323804**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7560.000	0.10						7550	0.132	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-001

Client Sample ID: PE-01-0516
Collection Date: 5/10/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160511D**	QC Batch: **R108399**			PrepDate			Analyst: **RB**
pH	7.5	0.10	0.10	H	pH Units	1	5/11/2016 12:30 PM
Temp. at time of pH Analysis	24	0.10	0.10	H	°C	1	5/11/2016 12:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-002

Client Sample ID: TW-03D-0516
Collection Date: 5/10/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160511D**	QC Batch: **R108399**			PrepDate			Analyst: **RB**
pH	7.3	0.10	0.10	H	pH Units	1	5/11/2016 12:30 PM
Temp. at time of pH Analysis	22	0.10	0.10	H	°C	1	5/11/2016 12:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-003

Client Sample ID: TW-02D-0516
Collection Date: 5/10/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160511D**	QC Batch: **R108399**			PrepDate			Analyst: **RB**
pH	7.3	0.10	0.10	H	pH Units	1	5/11/2016 12:30 PM
Temp. at time of pH Analysis	23	0.10	0.10	H	°C	1	5/11/2016 12:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N019732-001ADUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **108399**
Client ID: **ZZZZZZ** Batch ID: **R108399** TestNo: **SM4500-H+B** Analysis Date: **5/11/2016** SeqNo: **2323689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.630	0.10						6.650	0.301	10	H
Temp. at time of pH Analysis	24.600	0.10						24.30	1.23	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-001

Client Sample ID: PE-01-0516
Collection Date: 5/10/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160513B**	QC Batch: **58423**				PrepDate	**5/13/2016**	Analyst: **QBM**
Total Dissolved Solids (Residue, Filterable)	2000	25	25		mg/L	1	5/13/2016 10:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-002

Client Sample ID: TW-03D-0516
Collection Date: 5/10/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160513B**	QC Batch: **58423**				PrepDate	**5/13/2016**	Analyst: **QBM**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	5/13/2016 10:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-003

Client Sample ID: TW-02D-0516
Collection Date: 5/10/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160513B**	QC Batch: **58423**				PrepDate	**5/13/2016**	Analyst: **QBM**
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	5/13/2016 10:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-58423**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/13/2016**	RunNo: **108459**
Client ID: **LCSW**	Batch ID: **58423**	TestNo: **SM2540C**		Analysis Date: **5/13/2016**	SeqNo: **2326393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	983.000	10	1000	0	98.3	80	120				

Sample ID **MB-58423**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/13/2016**	RunNo: **108459**
Client ID: **PBW**	Batch ID: **58423**	TestNo: **SM2540C**		Analysis Date: **5/13/2016**	SeqNo: **2326394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N019727-004A-DUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/13/2016**	RunNo: **108459**
Client ID: **ZZZZZZ**	Batch ID: **58423**	TestNo: **SM2540C**		Analysis Date: **5/13/2016**	SeqNo: **2326401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	236900.000	1000						235200	0.720	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-001

Client Sample ID: PE-01-0516
Collection Date: 5/10/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_160517A**	QC Batch: **R108530**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/17/2016 01:48 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160518B**	QC Batch: **58428**			PrepDate	**5/16/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2016 06:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-002

Client Sample ID: TW-03D-0516
Collection Date: 5/10/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_160512F**	QC Batch: **R108460**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	610	1.4	10		µg/L	1	5/12/2016
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **ICP7_160518B**	QC Batch: **58428**			PrepDate	**5/16/2016**		Analyst: **CEI**
Chromium	620	0.096	5.0		µg/L	5	5/18/2016 07:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-003

Client Sample ID: TW-02D-0516
Collection Date: 5/10/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_160512F**	QC Batch: **R108460**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	46	1.4	10		µg/L	1	5/12/2016
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **ICP7_160518B**	QC Batch: **58428**			PrepDate	**5/16/2016**		Analyst: **CEI**
Chromium	47	0.019	1.0		µg/L	1	5/18/2016 06:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R108530	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108530
Client ID:	PBW	Batch ID:	R108530	TestNo:	EPA 218.6			Analysis Date:	5/17/2016	SeqNo:	2330750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R108530	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108530
Client ID:	LCSW	Batch ID:	R108530	TestNo:	EPA 218.6			Analysis Date:	5/17/2016	SeqNo:	2330751

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.027	0.20	5.000	0	101	90	110				

Sample ID	N019741-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108530
Client ID:	ZZZZZZ	Batch ID:	R108530	TestNo:	EPA 218.6			Analysis Date:	5/17/2016	SeqNo:	2330753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID	N019741-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108530
Client ID:	ZZZZZZ	Batch ID:	R108530	TestNo:	EPA 218.6			Analysis Date:	5/17/2016	SeqNo:	2330754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.113	0.20	5.000	0	102	90	110				

Sample ID	N019741-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108530
Client ID:	ZZZZZZ	Batch ID:	R108530	TestNo:	EPA 218.6			Analysis Date:	5/17/2016	SeqNo:	2330755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.127	0.20	5.000	0	103	90	110	5.112	0.275	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N019729-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108530
Client ID:	ZZZZZZ	Batch ID:	R108530	TestNo:	EPA 218.6			Analysis Date:	5/17/2016	SeqNo:	2330759

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID	N019730-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108530
Client ID:	ZZZZZZ	Batch ID:	R108530	TestNo:	EPA 218.6			Analysis Date:	5/17/2016	SeqNo:	2330763

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	LCS-R108460	SampType:	LCS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	LCSW	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	98.933	10	100.0	0	98.9	85	115				

Sample ID	MB-R108460	SampType:	MBLK	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	PBW	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID	N019544-002ADUP	SampType:	DUP	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	ZZZZZZ	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326413

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	629.474	10						619.0	1.68	20	

Sample ID	N019730-003AMS	SampType:	MS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	ZZZZZZ	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326418

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	309.209	10	250.0	46.49	105	85	115				

Sample ID	N019730-003AMSD	SampType:	MSD	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	ZZZZZZ	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326419

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	311.795	10	250.0	46.49	106	85	115	309.2	0.833	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-58428	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/16/2016	RunNo:	108595
Client ID:	PBW	Batch ID:	58428	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2016	SeqNo:	2333661

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.069	1.0									

Sample ID	LCS-58428	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/16/2016	RunNo:	108595
Client ID:	LCSW	Batch ID:	58428	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2016	SeqNo:	2333662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.333	1.0	10.00	0	93.3	85	115				

Sample ID	N019730-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/16/2016	RunNo:	108595
Client ID:	ZZZZZZ	Batch ID:	58428	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2016	SeqNo:	2333666

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.175	1.0	10.00	0.2291	89.5	75	125				

Sample ID	N019730-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/16/2016	RunNo:	108595
Client ID:	ZZZZZZ	Batch ID:	58428	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2016	SeqNo:	2333667

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.045	1.0	10.00	0.2291	88.2	75	125	9.175	1.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-001

Client Sample ID: PE-01-0516
Collection Date: 5/10/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160512E**	QC Batch: **R108458**			PrepDate			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-002

Client Sample ID: TW-03D-0516
Collection Date: 5/10/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160512E**	QC Batch: **R108458**			PrepDate			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-003

Client Sample ID: TW-02D-0516
Collection Date: 5/10/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160512E**	QC Batch: **R108458**			PrepDate			Analyst: **QBM**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R108458**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108458**
Client ID: **LCSW**	Batch ID: **R108458**	TestNo: **SM 2320 B**		Analysis Date: **5/12/2016**	SeqNo: **2326383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	100.418	5.0	100.0	0	100	85	115				

Sample ID **MB-R108458**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108458**
Client ID: **PBW**	Batch ID: **R108458**	TestNo: **SM 2320 B**		Analysis Date: **5/12/2016**	SeqNo: **2326384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N019730-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108458**
Client ID: **ZZZZZZ**	Batch ID: **R108458**	TestNo: **SM 2320 B**		Analysis Date: **5/12/2016**	SeqNo: **2326387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	209.205	5.0						210.3	0.499	30	

Sample ID **N019730-003CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108458**
Client ID: **ZZZZZZ**	Batch ID: **R108458**	TestNo: **SM 2320 B**		Analysis Date: **5/12/2016**	SeqNo: **2326390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	271.967	5.0	100.0	173.6	98.3	75	125				

Sample ID **N019730-003CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **108458**
Client ID: **ZZZZZZ**	Batch ID: **R108458**	TestNo: **SM 2320 B**		Analysis Date: **5/12/2016**	SeqNo: **2326391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	271.967	5.0	100.0	173.6	98.3	75	125	272.0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-001

Client Sample ID: PE-01-0516
Collection Date: 5/10/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160516A**	QC Batch: **R108524**			PrepDate			Analyst: **QBM**
Chloride	790	3.9	100		mg/L	200	5/16/2016 05:33 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160516A**	QC Batch: **R108524**			PrepDate			Analyst: **QBM**
Sulfate	340	3.3	25		mg/L	50	5/16/2016 05:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-002

Client Sample ID: TW-03D-0516
Collection Date: 5/10/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160516A**	QC Batch: **R108524**			PrepDate			Analyst: **QBM**
Chloride	2100	9.7	250		mg/L	500	5/16/2016 06:04 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160516A**	QC Batch: **R108524**			PrepDate			Analyst: **QBM**
Sulfate	480	6.6	50		mg/L	100	5/16/2016 06:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-003

Client Sample ID: TW-02D-0516
Collection Date: 5/10/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160516A**	QC Batch: **R108524**			PrepDate			Analyst: **QBM**
Chloride	2100	9.7	250		mg/L	500	5/16/2016 06:35 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160516A**	QC Batch: **R108524**			PrepDate			Analyst: **QBM**
Sulfate	470	6.6	50		mg/L	100	5/16/2016 06:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R108524_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	PBW	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330561

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R108524_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	LCSW	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330562

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.631	0.50	2.500	0	105	90	110				

Sample ID	N019651-001ADUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	ZZZZZZ	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330579

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	60.840	10						60.22	1.02	20	

Sample ID	N019651-003CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	ZZZZZZ	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330580

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	114.060	10	50.00	64.32	99.5	80	120				

Sample ID	N019651-003CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	ZZZZZZ	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330581

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	116.240	10	50.00	64.32	104	80	120	114.1	1.89	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N019654-001CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	ZZZZZZ	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	136.120	10	50.00	81.64	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R108524_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	PBW	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330594

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R108524_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	LCSW	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330595

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.822	0.50	5.000	0	96.4	90	110				

Sample ID	N019651-001ADUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	ZZZZZZ	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	99.620	10						96.86	2.81	20	

Sample ID	N019651-003CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	ZZZZZZ	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330604

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	229.500	10	100.0	126.0	103	80	120				

Sample ID	N019651-003CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	ZZZZZZ	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	232.680	10	100.0	126.0	107	80	120	229.5	1.38	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-001

Client Sample ID: PE-01-0516
Collection Date: 5/10/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-002

Client Sample ID: TW-03D-0516
Collection Date: 5/10/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	3.1	0.11	0.25		mg/L	5	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-0516
Lab Order:	N019730	**Collection Date:**	5/10/2016 11:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N019730-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160512A**	QC Batch: **R108423**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.84	0.022	0.050		mg/L	1	5/12/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R108423	**MBLK**	**4500N03F_W**	**mg/L**		**108423**
Client ID: **PBW**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R108423	**LCS**	**4500N03F_W**	**mg/L**		**108423**
Client ID: **LCSW**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.479	0.050	0.5000	0	95.8	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019560-010CDUP	**DUP**	**4500N03F_W**	**mg/L**		**108423**
Client ID: **ZZZZZZ**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.068	0.050						0.08140	17.4	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019560-010CMS	**MS**	**4500N03F_W**	**mg/L**		**108423**
Client ID: **ZZZZZZ**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.586	0.050	0.5000	0.08140	101	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N019560-010CMSD	**MSD**	**4500N03F_W**	**mg/L**		**108423**
Client ID: **ZZZZZZ**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.674	0.050	0.5000	0.08140	118	75	125	0.5861	13.9	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-001

Client Sample ID: PE-01-0516
Collection Date: 5/10/2016 11:30:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **ICP2_160523D** QC Batch: **58406** PrepDate **5/12/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	93000	28	500		ug/L	1	5/23/2016 11:53 PM
Iron	65	1.8	20		ug/L	1	5/23/2016 11:53 PM
Magnesium	22000	4.4	100		ug/L	1	5/23/2016 11:53 PM
Sodium	260000	290	12000		ug/L	25	5/15/2016 10:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-002

Client Sample ID: TW-03D-0516
Collection Date: 5/10/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160523D**	QC Batch: **58406**			PrepDate	**5/12/2016**		Analyst: **CEI**
Calcium	210000	28	500		ug/L	1	5/23/2016 11:59 PM
Iron	ND	1.8	20		ug/L	1	5/23/2016 11:59 PM
Magnesium	27000	4.4	100		ug/L	1	5/23/2016 11:59 PM
Sodium	1400000	580	25000		ug/L	50	5/15/2016 10:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-003

Client Sample ID: TW-02D-0516
Collection Date: 5/10/2016 11:40:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **ICP2_160523D** QC Batch: **58406** PrepDate **5/12/2016** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	220000	28	500		ug/L	1	5/24/2016 12:06 AM
Iron	38	1.8	20		ug/L	1	5/24/2016 12:06 AM
Magnesium	31000	4.4	100		ug/L	1	5/24/2016 12:06 AM
Sodium	1500000	580	25000		ug/L	50	5/15/2016 10:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-58406**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2016**	RunNo: **108486**
Client ID: **PBW**	Batch ID: **58406**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2016**	SeqNo: **2327905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	27.931	500									

Sample ID **LCS2-58406**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2016**	RunNo: **108486**
Client ID: **LCSW**	Batch ID: **58406**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2016**	SeqNo: **2327908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	18775.892	500	20000	0	93.9	85	115				

Sample ID **N019730-001B-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2016**	RunNo: **108486**
Client ID: **ZZZZZZ**	Batch ID: **58406**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2016**	SeqNo: **2327981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	283972.091	12000	20000	260600	117	75	125				

Sample ID **N019730-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2016**	RunNo: **108486**
Client ID: **ZZZZZZ**	Batch ID: **58406**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2016**	SeqNo: **2327982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	285033.507	12000	20000	260600	122	75	125	284000	0.373	20	

Sample ID **MB-58406**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2016**	RunNo: **108643**
Client ID: **PBW**	Batch ID: **58406**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/23/2016**	SeqNo: **2336220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LCS1-58406	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/12/2016	RunNo:	108643
Client ID:	LCSW	Batch ID:	58406	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/23/2016	SeqNo:	2336221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9039.072	500	10000	0	90.4	85	115				
Iron	100.731	20	100.0	0	101	85	115				
Magnesium	9958.842	100	10000	0	99.6	85	115				

Sample ID	N019639-019B-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/12/2016	RunNo:	108643
Client ID:	ZZZZZZ	Batch ID:	58406	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/23/2016	SeqNo:	2336225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124946.579	500	10000	115800	91.4	75	125				
Iron	188.321	20	100.0	62.03	126	75	125				S
Magnesium	27718.487	100	10000	18940	87.8	75	125				

Sample ID	N019639-019B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/12/2016	RunNo:	108643
Client ID:	ZZZZZZ	Batch ID:	58406	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/23/2016	SeqNo:	2336226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124629.946	500	10000	115800	88.3	75	125	124900	0.254	20	
Iron	163.627	20	100.0	62.03	102	75	125	188.3	14.0	20	
Magnesium	27668.780	100	10000	18940	87.3	75	125	27720	0.179	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-001

Client Sample ID: PE-01-0516
Collection Date: 5/10/2016 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160518C**	QC Batch: **58428**			PrepDate	**5/16/2016**		Analyst: **CEI**
Manganese	300	0.28	2.5		µg/L	5	5/18/2016 06:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-002

Client Sample ID: TW-03D-0516
Collection Date: 5/10/2016 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160518C**	QC Batch: **58428**			PrepDate	**5/16/2016**		Analyst: **CEI**
Manganese	12	0.056	0.50		µg/L	1	5/18/2016 06:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N019730
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N019730-003

Client Sample ID: TW-02D-0516
Collection Date: 5/10/2016 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160518C**	QC Batch: **58428**			PrepDate	**5/16/2016**		Analyst: **CEI**
Manganese	56	0.056	0.50		µg/L	1	5/18/2016 06:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**MB-58428**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/16/2016**	RunNo: **108596**
Client ID:	**PBW**	Batch ID: **58428**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2016**	SeqNo: **2333739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	**LCS-58428**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/16/2016**	RunNo: **108596**
Client ID:	**LCSW**	Batch ID: **58428**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2016**	SeqNo: **2333740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.322	0.50	100.0	0	96.3	85	115				

Sample ID	**N019730-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/16/2016**	RunNo: **108596**
Client ID:	**ZZZZZZ**	Batch ID: **58428**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2016**	SeqNo: **2333754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	393.976	2.5	100.0	301.8	92.1	75	125				

Sample ID	**N019730-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/16/2016**	RunNo: **108596**
Client ID:	**ZZZZZZ**	Batch ID: **58428**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2016**	SeqNo: **2333755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	392.076	2.5	100.0	301.8	90.2	75	125	394.0	0.483	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓ — Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory — Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Global ID:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Jason Mahn	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	
Title: Sample Tech			
Signature: Date: 5/10/16	Sampled By: Jason Mahn		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - PMP	Signature: Date: 5/10/16		
Project Number: RC000753.801A			

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling:	ice	

Sample Temp: 2.2°

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH — 250 mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr — 500 mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, Mn, Fe, Na, — 500 mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba — 500 mL poly	Total metals (SW6010B); HNO3 Fe — 500 mL poly	Anions (E300.0); Cl, SO4 — 1 liter poly	Specific Conductance (E120.1) — 1 liter poly	pH (SM4500HB) — 1 liter poly	TDS (SM2540C) — 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) — 1 liter poly	TSS (SM2540) — 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 — 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N019730 - 01	PE-01-0516	5/10/2016	1130		X		X	X			X	X	X	X	X		X	E	4	P	BN	
2	- 02	TW-03D-0516	5/10/2016	1115			X	X	X			X	X	X	X	X		X	E	4	P	BN	
3	- 03	TW-02D-0516	5/10/2016	1140			X	X	X			X	X	X	X	X		X	E	4	P	BN	
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	5/10/16 1635		5/10/16 1635
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	5/10/16 1919		5/10/16 1919
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
x	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/10/2016	Workorder:	N019730
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for pH is past holding time upon receipt.

Checklist Completed By: HG 5/12/2016

Reviewed By: 05/16/16

ASSET Laboratories

WORK ORDER Summary

11-May-16

WorkOrder: N019730

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 5/10/2016

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019730-001A	PE-01-0516	5/10/2016 11:30:00 AM	5/24/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N019730-001B			5/24/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019730-001C			5/24/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2016			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/24/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/24/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/24/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/24/2016		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N019730-001D			5/24/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019730-002A	TW-03D-0516	5/10/2016 11:15:00 AM	5/24/2016		SM 3500-Cr B	HEXAVALENT CHROMIUM	☐	☐	☐	WW
N019730-002B			5/24/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019730-002C			5/24/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

11-May-16

WorkOrder: N019730

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 5/10/2016

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019730-002C	TW-03D-0516	5/10/2016 11:15:00 AM	5/24/2016	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2016			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/24/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/24/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/24/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/24/2016		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N019730-002D			5/24/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019730-003A	TW-02D-0516	5/10/2016 11:40:00 AM	5/24/2016		SM 3500-Cr B	HEXAVALENT CHROMIUM	☐	☐	☐	WW
N019730-003B			5/24/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N019730-003C			5/24/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2016		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2016			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/24/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/24/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/24/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/24/2016		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW

WORK ORDER Summary

11-May-16

WorkOrder: N019730

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 5/10/2016

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019730-003D	TW-02D-0516	5/10/2016 11:40:00 AM	5/24/2016	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N019730-004A	FOLDER		5/24/2016		EDD	RWQCB	☐	☐	☐	LAB
			5/24/2016		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N019730**

NAME	TEST METHOD
Claire Ignacio	EPA 6020_Dissolved, EPA 6010B_Dissolved
Ryan Balilu	EPA 120.1, SM 4500 H+B, SM 4500-NO3F
Quennie Manimtim	SM 2540C, SM 3500-Cr B, SM 2320B, EPA 300
Jannette Soria	EPA 218.6

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108404 **Analyst:** REB

ASSET #: N019730 **Date Analyzed:** 5/11/2016

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MS~~D, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/19/2016

2nd Level Reviewer: Mary 5/25/2016 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 05/11/16 1300

Analyst: MEB

Standard	Std ID	Reading	Comments
9.31 µs/cm	CIN - 160111A	9.31 µs/cm @ 27.7°C	% Rec: (90-110%)
1412	- 150112A 5/11/16	1414 @ 27.7°C	
9992	- ~~160112A~~ MEB 160111B	10120 @ 27.6°C	
99797	- 151012B	101500 @ 27.6°C	

	Sample ID	Matrix	Reading	Comments
1	N019727-001A		32000 µs/cm @ 26.8°C	
2	2A		48200 µs/cm @ 26.6°C	
3	3A		195300 @ 26.6°C	
4	4A		181700 @ 26.7°C	
5	N019729-001A		756 @ 26.5°C	
6	2A		1173 @ 26.3°C	
7	3A		656 @ 26.4°C	
8	4A		907 @ 26.2°C	
9	5A		739 @ 25.6°C	
10	5A DUP		740 @ 25.6°C	
Dup				Accept: 10% water, 20% soil
	Std Chk: 1413 µs/cm		1413 µs/cm @ 26.8°C	% Rec: (90-110%)
	10,000 99893		104700 @ 27.3°C 97600 @ 27.4°C	

Date: Continuation

Analyst:

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1	N019730-001C	H_2O	3370 µs/cm @ 25.0°C	
2	2C		MEB 5/11/16 ~~7420~~ 7420 @ 24.4°C	
3	3C		7550 µs/cm @ 23.9°C	
4	3C DUP		7560 µs/cm @ 24.1°C	
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk: 1413 µs/cm		1421 µs/cm @ 26.7°C	% Rec: (90-110%)
	10,000 99893		104900 @ 27.4°C 98100 @ 27.4°C	

Logbook # 5

Julia Ramit 5/19/2016

SM 4500 H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108399 **Analyst:** REB

ASSET #: N019730 **Date Analyzed:** 5/11/2016

Method: EPA 150.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.		X				
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/19/2016

2nd Level Reviewer: 5/25/2016 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 05/11/16 1230

Analyst: MB

Standard	Std ID	pH	Comments
Buffer 4			
Buffer 7			
Buffer 10			

	Sample ID	Matrix	pH	Comments
1				
2				
3			MB	5/11/16
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10			Accept: +/-0.1 pH units from expected value

(Circle one)

Date: 05/11/16 1230

Analyst: MB

Standard	Std ID	pH	Comments
Buffer 4	CIMW - 150828B	4.03 @ 26.9°C	SLOPE: 99.1%
Buffer 7	" - 160309A	7.02 @ 26.9°C	
Buffer 10	" - 160111B D	10.00 @ 26.7°C	

	Sample ID	Matrix	pH	Comments
1	NO19727 - 001A	WATER	9.59 @ 25.7°C	
2	2A		8.81 @ 25.2°C	
3	3A		7.64 @ 25.7°C	
4	4A		7.65 @ 25.5°C	
5	NO19729 - 001A		8.37 @ 25.2°C	
6	2A		8.18 @ 25.1°C	
7	3A		8.37 @ 25.7°C	
8	4A		8.26 @ 24.8°C	
9	5A		8.17 @ 24.4°C	
10	NO19799 - 001AMS		8.16 @ 23.5°C	
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7) 10	CIMW - 160111C	7.05 @ 26.6°C	Accept: +/-0.1 pH units from expected value

(Circle one)

pH Logbook

Date: Cont

Analyst:

Standard	Std ID	pH	Comments
Buffer 4	7		
Buffer 7			
Buffer 10			

	Sample ID	Matrix	pH	Comments
1	N0197 30-001C	H_2O	7.51 @ 23.5°C	
2	" 2C	"	7.29 @ 21.6°C	
3	" 3C	"	7.29 @ 22.8°C	
4	N0197 31-001A	"	6.53 @ 22.2°C	
5	" 2A	"	6.53 @ 23.4°C	
6	N0197 32-001A	"	6.65 @ 24.7°C	
7	N0197 32-001A DUP	"	6.63 @ 24.6°C	
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CRM-160111C	7.05 @ 28.7°C	Accept: +/-0.1 pH units from expected value

Date: 5/11/16 1725

Analyst: QBM / REB

Standard	Std ID	pH	Comments
Buffer 4		4.01 @ 29.7°C	SLOPE: 99.1%
Buffer 7		6.98 @ 29.8°C	
Buffer 10		9.99 @ 29.5°C	

	Sample ID	Matrix	pH	Comments
1	N0197 34-001A	SOIL	9.33 @ 27.6°C	
2	" DUP	"	6.37 @ 27.7°C	
3				
4				
5				
6				
7				
8			Julia Ramit	5/19/2016
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CINV-160111C	7.04 @ 29.4°C	Accept: +/-0.1 pH units from expected value

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58423 **Analyst:** QBM

ASSET #: N019730 **Date Analyzed:** 5/13/2016

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/20/2016

2nd Level Reviewer: 5/25/2016 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N019730-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(54.2301–54.1487)*1000000}{40}$$

= 2035 mg/L

Reporting result in two significant figures,

TDS = 2000 mg/L

Divia Ramit 5/20/2016

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/13/2016 10:53:19**
Prep End Date: **5/14/2016 3:10:28 P**

Initials/ Date: Julia Ramit 5/20/2016

Prep Batch **58423** Prep Code: **160.1_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units **mL / mL**

Temp(°C) 180

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58423	Water		100	☐	0	0	100	1.000		
MB-58423	Water		100	☐	0	0	100	1.000		
N019716-002A	Water		75	☐	0	0	100	1.333		
N019716-003A	Water		100	☐	0	0	100	1.000		
N019727-001A	Water		2	☐	0	0	100	50.000		
N019727-002A	Water		2	☐	0	0	100	50.000		
N019727-003A	Water		1	☐	0	0	100	100.000		
N019727-004A	Water		1	☐	0	0	100	100.000		
N019727-004A-DU	Water		1	☐	0	0	100	100.000		
N019730-001C	Groundwater		40	☐	0	0	100	2.500		
N019730-002C	Groundwater		20	☐	0	0	100	5.000		
N019730-003C	Groundwater		20	☐	0	0	100	5.000		
N019748-001C	Potable Water		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8393	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160414A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 5/13/2016 10:53:19
Prep End Date:

Initials/ Date: Silvia Ramit 5/20/2016

Prep Batch 58423 Prep Code: 160.1_W_PRE Technician: Quennie Manimtim

Prep Factor Units: mL / mL

Sample ID	Matrix	~~pH~~ Cond:	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58423	Water		100	☐	0	0	100	1.000		
MB-58423 34	Water		100	☐	0	0	100	1.000		
N019716-002A AE	Water	1621	~~100~~ 75	☐	0	0	100	1.000		
N019716-003A 24	Water	1198	100 ✓	☐	0	0	100	1.000		
N019727-001A 61	Water	32000	~~100~~ 2	☐	0	0	100	1.000		
N019727-002A AC	Water	48200	~~100~~ 2	☐	0	0	100	1.000		
N019727-003A 4	Water	195300	~~100~~ 1	☐	0	0	100	1.000		
N019727-004A 2	Water	181700	~~100~~ 1	☐	0	0	100	1.000		
N019727-004A-DU AD	Water	1	~~100~~ 1	☐	0	0	100	1.000		
N019730-001C 42	Groundwater	3370	~~100~~ 40	☐	0	0	100	1.000		
N019730-002C 27	Groundwater	7420	~~100~~ 20	☐	0	0	100	1.000		
N019730-003C 43	Groundwater	7550	~~100~~ 20	☐	0	0	100	1.000		
N019748-001C 44	Potable Water	1028	100 ✓	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

#8393

IWST160414A

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/18/16 34	MB- 58423	60	63.3440 63.3436	63.3436 63.3438	
	LCS- 58423	100	63.7300 63.7300	63.8287 63.8283	
AE	NQ16716-002A	75	61.1531 61.1534	61.2366 61.2285 61.2283	
24	3A	100	55.4413 55.4414	55.5200 55.5203	
61	NQ16727-001A	2	53.8378 53.8377	53.8834 53.8836	
AC	2A	2	64.0465 64.0468	2 ~~4~~ 64.1187 64.1186	
4	3A	1	53.8111 53.8109	54.2052 54.2056	
2	4A	1	55.0069 55.0074	55.2923 55.2926	
BB	4 dup	1	61.3163 61.3163	61.5528 61.5532	
42	NQ16730-001C	40	54.1458 54.1487	54.2314 54.2305 54.2301	

Julia Ramit 5/20/2016

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/19/16 LT	NB19730-003C	20	55.6229 55.6227	55.7107 55.7111	
TS	NB19730-003C	20	53.8062 53.8058	53.8977 53.8961 53.8459	
RR	NB19748-001C	100	63.9025 63.9021	63.9691 63.9677 63.9673	

Julia Ramit 5/20/2016

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
- A = weight in grams of dish + residue after drying
- B = weight of dish in grams
- PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
5/14/2016									
MB-58423	100	63.3436	63.3438	2	1	2			MBLK
LCS-58423	100	63.73	63.8283	983	1	983			LCS
N019716-002A	75	61.1534	61.2283	749	1.33333333	998.666667	1621	0.616	SAMP
N019716-003A	100	55.4414	55.5203	789	1	789	1198	0.659	SAMP
N019727-001A	2	53.8377	53.8836	459	50	22950	32000	0.717	SAMP
N019727-002A	2	64.0468	64.1186	718	50	35900	48200	0.745	SAMP
N019727-003A	1	53.8109	54.2056	3947	100	394700	195300	2.021	SAMP
N019727-004A	1	55.0074	55.2426	2352	100	235200	181700	1.294	SAMP
N019727-004A-DUP	1	61.3163	61.5532	2369	100	236900	181700	1.304	DUP
N019730-001C	40	54.1487	54.2301	814	2.5	2035	3370	0.604	SAMP
N019730-002C	20	55.6227	55.7111	884	5	4420	7420	0.596	SAMP
N019730-003C	20	53.8058	53.8959	901	5	4505	7550	0.597	SAMP
N019748-001C	100	63.9021	63.9673	652	1	652	1028	0.634	SAMP

Silvia Ramit 5/20/2016

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108530
ASSET #: N019730

Instrument ID: IC-06
Analyst: JAS
Date Analyzed: 5/17/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)		X				
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

For N019730-01A only.
CCB-3 > 0.02 ppb. However sample is ND.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/18/2016

2nd Level Reviewer 5/25/2016 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

Cr^{+6}, μg/L = A * DF

where:

A = μg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N019730-001A** concentration in μg/L is calculated as follows:

Cr^{+6}, μg/L = 0.0339 * 1

= 0.0339

Reporting result in two significant figures,

Cr^{+6}, μg/L = 0.034

Since PQL = 0.20 μg/L,

Cr^{+6}, μg/L = ND

ANALYSIS RUN LOG

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 mL
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 mL
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 mL
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 mL
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 mL
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 mL
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 mL
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 mL
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 mL
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 mL
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 mL
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 mL
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 mL
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160517A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD1-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD2-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD3-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD4-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD5-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD6-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/17/16 10:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/17/16 11:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/17/16 11:18 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/17/16 11:28 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/17/16 11:38 AM	Reported
15	MB-R108530	MBLK	1	Hexavalent Chromium	05/17/16 11:48 AM	Reported
16	LCS-R108530	LCS	1	Hexavalent Chromium	05/17/16 11:58 AM	Reported
17	N019741-001A	SAMP	1	Hexavalent Chromium	05/17/16 12:08 PM	Reported
18	N019741-001ADUP	DUP	1	Hexavalent Chromium	05/17/16 12:18 PM	Reported
19	N019741-001AMS	MS	1	Hexavalent Chromium	05/17/16 12:28 PM	Reported
20	N019741-001AMSD	MSD	1	Hexavalent Chromium	05/17/16 12:38 PM	Reported
21	N019741-002A	SAMP	100	Hexavalent Chromium	05/17/16 12:48 PM	Not Reported
22	N019742-003A	SAMP	1	Hexavalent Chromium	05/17/16 12:58 PM	Reported
23	N019729-006A	SAMP	1	Hexavalent Chromium	05/17/16 1:08 PM	Reported
24	N019729-006AMS	MS	1	Hexavalent Chromium	05/17/16 1:18 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/17/16 1:28 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/17/16 1:38 PM	Reported
27	N019730-001A	SAMP	1	Hexavalent Chromium	05/17/16 1:48 PM	Reported
28	N019730-001AMS	MS	1	Hexavalent Chromium	05/17/16 1:58 PM	Reported
29	N019741-002A	SAMP	1	Hexavalent Chromium	05/17/16 2:08 PM	Reported
30	N019611-001A	SAMP	20	Hexavalent Chromium	05/17/16 2:18 PM	Not Reported
31	N019611-001AMS	MS	20	Hexavalent Chromium	05/17/16 2:28 PM	Not Reported
32	N019628-007A	SAMP	5	Hexavalent Chromium	05/17/16 2:38 PM	Not Reported
33	N019628-007AMS	MS	5	Hexavalent Chromium	05/17/16 2:47 PM	Not Reported
34	N019639-002A	SAMP	1	Hexavalent Chromium	05/17/16 2:57 PM	Not Reported
35	N019639-002AMS	MS	1	Hexavalent Chromium	05/17/16 3:07 PM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	05/17/16 3:17 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	05/17/16 3:27 PM	Reported
38	N019639-007A	SAMP	1	Hexavalent Chromium	05/17/16 3:37 PM	Not Reported
39	N019639-007AMS	MS	1	Hexavalent Chromium	05/17/16 3:47 PM	Not Reported
40	N019639-015A	SAMP	1	Hexavalent Chromium	05/17/16 3:57 PM	Not Reported
41	N019639-015AMS	MS	1	Hexavalent Chromium	05/17/16 4:07 PM	Not Reported
42	N019654-010A	SAMP	1	Hexavalent Chromium	05/17/16 4:17 PM	Not Reported
43	N019654-010AMS	MS	1	Hexavalent Chromium	05/17/16 4:27 PM	Not Reported
44	CCV-4	CCV1	1	Hexavalent Chromium	05/17/16 4:38 PM	Not Reported
45	CCB-4	CCB	1	Hexavalent Chromium	05/17/16 4:50 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160517A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**18/May/16 10:01:28**
No. of Injections:	**48**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/17/2016 10:57	Finished	
11	BLANK	2	1000	Unknown		05/17/2016 11:08	Finished	
12	CCV-1,CCV,1	3	1000	Unknown		05/17/2016 11:18	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/17/2016 11:28	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/17/2016 11:38	Finished	CCB R160512C
15	MB-H2O,MBLK,1	6	1000	Unknown		05/17/2016 11:48	Finished	MB R160502C
16	LCS-H2O,LCS,1	7	1000	Unknown		05/17/2016 11:58	Finished	LCS(5ppb), IWST-160401B
17	N019741-001A,SAMP,1	8	1000	Unknown		05/17/2016 12:08	Finished	SAMP, 10mL
18	N019741-001ADUP,DUP,1	9	1000	Unknown		05/17/2016 12:18	Finished	DUP, 10mL
19	N019741-001AMS,MS,1	10	1000	Unknown		05/17/2016 12:28	Finished	MS (5ppb), IWST-160401B, 10 m
20	N019741-001AMSD,MSD,1	11	1000	Unknown		05/17/2016 12:38	Finished	MSD (5ppb), IWST-160401B, 10
21	N019741-002A,SAMP,100	12	1000	Unknown		05/17/2016 12:48	Finished	SAMP, 0.10>10mL
22	N019742-003A,SAMP,1	13	1000	Unknown		05/17/2016 12:58	Finished	SAMP, 10mL
23	N019729-006A,SAMP,1	14	1000	Unknown		05/17/2016 13:08	Finished	SAMP, 10mL
24	N019729-006AMS,MS,1	15	1000	Unknown		05/17/2016 13:18	Finished	MS (1ppb), IWST-160401B, 10 m
25	CCV-2,CCV1,1	16	1000	Unknown		05/17/2016 13:28	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/17/2016 13:38	Finished	CCB
27	N019730-001A,SAMP,1	18	1000	Unknown		05/17/2016 13:48	Finished	SAMP, 10mL
28	N019730-001AMS,MS,1	19	1000	Unknown		05/17/2016 13:58	Finished	MS (1ppb), IWST-160401B, 10 m
29	N019741-002A,SAMP,1	20	1000	Unknown		05/17/2016 14:08	Finished	SAMP, 10mL
30	N019611-001A,SAMP,20	21	1000	Unknown		05/17/2016 14:18	Finished	SAMP, 0.5>10mL
31	N019611-001AMS,MS,20	22	1000	Unknown		05/17/2016 14:28	Finished	MS (5ppb), IWST-160401B, 0.5>
32	N019628-007A,SAMP,5	23	1000	Unknown		05/17/2016 14:38	Finished	SAMP, 2.0>10mL
33	N019628-007AMS,MS,5	24	1000	Unknown		05/17/2016 14:47	Finished	MS (1ppb), IWST-160401B, 2.0>
34	N019639-002A,SAMP,1	25	1000	Unknown		05/17/2016 14:57	Finished	SAMP, 10mL
35	N019639-002AMS,MS,1	26	1000	Unknown		05/17/2016 15:07	Finished	MS (1ppb), IWST-160401B, 10 m
36	CCV-3,CCV,1	27	1000	Unknown		05/17/2016 15:17	Finished	CCV @ 5ppb, IWST-160401A
37	CCB-3,CCB,1	28	1000	Unknown		05/17/2016 15:27	Finished	CCB
38	N019639-007A,SAMP,1	29	1000	Unknown		05/17/2016 15:37	Finished	SAMP, 10mL
39	N019639-007AMS,MS,1	30	1000	Unknown		05/17/2016 15:47	Finished	MS (5ppb), IWST-160401B, 10 m
40	N019639-015A,SAMP,1	31	1000	Unknown		05/17/2016 15:57	Finished	SAMP, 10mL
41	N019639-015AMS,MS,1	32	1000	Unknown		05/17/2016 16:07	Finished	MS (5ppb), IWST-160401B, 10 m
42	N019654-010A,SAMP,1	33	1000	Unknown		05/17/2016 16:17	Finished	SAMP, 10mL
43	N019654-010AMS,MS,1	34	1000	Unknown		05/17/2016 16:27	Finished	MS (5ppb), IWST-160401B, 10 m
44	CCV-4,CCV1,1	35	1000	Unknown		05/17/2016 16:38	Finished	CCV @ 10ppb, IWST-160401A
45	CCB-4,CCB,1	36	1000	Unknown		05/17/2016 16:50	Finished	CCB
46	SHUTDOWN	37	1000	Unknown		05/17/2016 17:00	Finished	
47	Eluent: R160510E	38	1000	Unknown		n.a.	Finished	Eluent
48	PCR: R160512B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/11/16
Time Prepared: 4:40 AM
Prepared By: JAS

slope: 98.6%
pH 7: 7.00 @25.5
4: 4.00 @25.4
10: 10.03 @25.7
LCS: 7.04 @25.3

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINV-160125H
NH4OH + NH4SO4 eluent: R160510A
NH4OH + NH4SO4 buffer: R160502C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019727-1A	9.52	–	~~~100 mL~~	~~~100 mL~~	~~+2 mL buffer~~	
2)	-2A	8.78	9.34	~100 mL	~100 mL	+2 mL buffer	
3)	-3A	7.58	9.40			+5 mL buffer + 15 drops 6N NaOH	
4)	-4A	7.60	9.31			+5 mL buffer + 15 drops 6 lab filtered preserved	
5)	N019729-1A	7.97	9.41	~100 mL	~100 mL	+2 mL buffer	
6)	-2A	8.01	9.43				
7)	-3A	8.30	9.42				
8)	-4A	8.22	9.43				
9)	-5A	8.17	9.42				
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 5/11/16
Time Prepared: 2:40 PM
Prepared By: JAS

slope: 98.7
pH 7: 7.01 @28.3
4: 4.02 @28.3
10: 10.00 @27.9
LCS: 7.02 @27.8

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINV-160125H
NH4OH + NH4SO4 eluent: R160510A, R160510E
NH4OH + NH4SO4 buffer: R160426G, R160502C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N019729-6A	9.37	–	–	–	–	R160502C
2)	N019730-1A	9.27	9.33	~250 mL	~250 mL	+1 drop 6N NaOH	R160426G
3)	~~-2A~~ 3A	9.30	9.36			+3 drops	R160426G
4)	~~-3A~~ 2A	9.20	9.38			+3 drops	R160502C
5)	N019738-1A	9.12	9.41			+5 drops	
6)	-2A	9.31	–	–	–	–	
7)	-3A	9.30	–	–	–	–	
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 10

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-06
Date Calibrated: 5/2/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0499	0.2341	1.1728	2.3399	3.5237	4.6638	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108530**
Client ID: **ICV**	Batch ID: **R108530**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2330744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.008	0.20	5.000	0	100	90	110				

Sample ID: **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108530**
Client ID: **ZZZZZZ**	Batch ID: **R108530**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2330745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.213	0.20	0.2000	0	107	80	120				

Sample ID: **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108530**
Client ID: **CCV**	Batch ID: **R108530**	TestNo: **EPA 218.6**		Analysis Date: **5/17/2016**	SeqNo: **2330747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.954	0.20	5.000	0	99.1	95	105				

Sample ID: **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108530**
Client ID: **ZZZZZZ**	Batch ID: **R108530**	TestNo: **EPA 218.6**		Analysis Date: **5/17/2016**	SeqNo: **2330748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.175	0.20	0.2000	0	87.5	80	120				

Sample ID: **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108530**
Client ID: **ZZZZZZ**	Batch ID: **R108530**	TestNo: **EPA 218.6**		Analysis Date: **5/17/2016**	SeqNo: **2330760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.928	0.20	10.00	0	99.3	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **108530**
Client ID: **CCV** Batch ID: **R108530** TestNo: **EPA 218.6** Analysis Date: **5/17/2016** SeqNo: **2330765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.043	0.20	5.000	0	101	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108530**
Client ID: **ICB**	Batch ID: **R108530**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2016**	SeqNo: **2330746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108530**
Client ID: **CCB**	Batch ID: **R108530**	TestNo: **EPA 218.6**		Analysis Date: **5/17/2016**	SeqNo: **2330749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108530**
Client ID: **CCB**	Batch ID: **R108530**	TestNo: **EPA 218.6**		Analysis Date: **5/17/2016**	SeqNo: **2330761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108530**
Client ID: **CCB**	Batch ID: **R108530**	TestNo: **EPA 218.6**		Analysis Date: **5/17/2016**	SeqNo: **2330766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.076	0.20									

CCB-3 has detect > 0.02ppb, however, sample N019730 is non-detect.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

5/25/2016

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 5/17/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.100	
CCV-2	5.108	
CCV-3	5.108	
CCV-4	5.108	
Average	5.106	
Actual RT Window	5.026 - 5.186	
Applied RT Window	4.906 - 5.306	
MB-R108530	N.A.	N.A.
LCS-R108530	5.100	PASS
N019741-001A	5.092	PASS
N019741-001ADUP	5.092	PASS
N019741-001AMS	5.100	PASS
N019741-001AMSD	5.100	PASS
N019741-002A	5.117	PASS
N019742-003A	5.117	PASS
N019729-006A	5.100	PASS
N019729-006AMS	5.108	PASS
N019730-001A	5.092	PASS
N019730-001AMS	5.083	PASS
N019741-002A	5.108	PASS
N019611-001A	5.108	PASS
N019611-001AMS	5.108	PASS
N019628-007A	5.033	PASS
N019628-007AMS	5.033	PASS
N019639-002A	5.100	PASS
N019639-002AMS	5.100	PASS
N019639-007A	5.083	PASS
N019639-007AMS	5.092	PASS
N019639-015A	5.092	PASS
N019639-015AMS	5.092	PASS
N019654-010A	5.083	PASS
N019654-010AMS	5.092	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

gog 04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/02/16 12:55 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/02/16 1:07 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/02/16 1:17 PM	Reported
13	MB-R107211	MBLK	1	Hexavalent Chromium	05/02/16 1:27 PM	Reported
14	LCS-R107211	LCS	1	Hexavalent Chromium	05/02/16 1:38 PM	Reported
15	N019534-001A	SAMP	1	Hexavalent Chromium	05/02/16 1:47 PM	Reported
16	N019534-001ADUP	DUP	1	Hexavalent Chromium	05/02/16 1:57 PM	Reported
17	N019534-001AMS	MS	1	Hexavalent Chromium	05/02/16 2:07 PM	Reported
18	N019534-001AMSD	MSD	1	Hexavalent Chromium	05/02/16 2:17 PM	Reported
19	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 2:27 PM	Not Reported
20	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 2:37 PM	Not Reported
21	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 2:47 PM	Not Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	05/02/16 2:57 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	05/02/16 3:07 PM	Reported
24	N019534-003A	SAMP	5	Hexavalent Chromium	05/02/16 3:17 PM	Not Reported
25	N019534-003AMS	MS	5	Hexavalent Chromium	05/02/16 3:27 PM	Not Reported
26	N019534-004A	SAMP	1	Hexavalent Chromium	05/02/16 3:37 PM	Reported
27	N019534-004AMS	MS	1	Hexavalent Chromium	05/02/16 3:47 PM	Reported
28	N019534-005A	SAMP	1	Hexavalent Chromium	05/02/16 3:57 PM	Reported
29	N019534-005AMS	MS	1	Hexavalent Chromium	05/02/16 4:07 PM	Reported
30	N019534-002A	SAMP	10	Hexavalent Chromium	05/02/16 4:17 PM	Reported
31	N019534-002AMS	MS	10	Hexavalent Chromium	05/02/16 4:27 PM	Reported
32	N019534-003A	SAMP	10	Hexavalent Chromium	05/02/16 4:37 PM	Reported
33	N019534-003AMS	MS	10	Hexavalent Chromium	05/02/16 4:46 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	05/02/16 4:56 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	05/02/16 5:06 PM	Reported
36	N019534-006A	SAMP	1	Hexavalent Chromium	05/02/16 5:21 PM	Reported
37	N019534-006AMS	MS	1	Hexavalent Chromium	05/02/16 5:32 PM	Reported
38	N019534-007A	SAMP	5	Hexavalent Chromium	05/02/16 5:42 PM	Reported
39	N019534-007AMS	MS	5	Hexavalent Chromium	05/02/16 5:52 PM	Reported
40	N019534-008A	SAMP	1	Hexavalent Chromium	05/02/16 6:02 PM	Reported
41	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 6:12 PM	Not Reported
42	N019534-009A	SAMP	1	Hexavalent Chromium	05/02/16 6:22 PM	Not Reported

INJECTION LOG: 160502A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N019534-009AMS	MS	1	Hexavalent Chromium	05/02/16 6:32 PM	Not Reported
44	N019534-010A	SAMP	1	Hexavalent Chromium	05/02/16 6:42 PM	Not Reported
45	N019534-010AMS	MS	1	Hexavalent Chromium	05/02/16 6:52 PM	Not Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	05/02/16 7:02 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	05/02/16 7:12 PM	Reported
48	N019534-011A	SAMP	1	Hexavalent Chromium	05/02/16 7:22 PM	Reported
49	N019534-011AMS	MS	1	Hexavalent Chromium	05/02/16 7:32 PM	Reported
50	N019534-012A	SAMP	1	Hexavalent Chromium	05/02/16 7:42 PM	Not Reported
51	N019534-012AMS	MS	1	Hexavalent Chromium	05/02/16 7:51 PM	Not Reported
52	N019534-013A	SAMP	1	Hexavalent Chromium	05/02/16 8:01 PM	Reported
53	N019534-013AMS	MS	1	Hexavalent Chromium	05/02/16 8:11 PM	Reported
54	N019534-014A	SAMP	1	Hexavalent Chromium	05/02/16 8:21 PM	Reported
55	N019534-014AMS	MS	1	Hexavalent Chromium	05/02/16 8:31 PM	Reported
56	N019534-015A	SAMP	1	Hexavalent Chromium	05/02/16 8:41 PM	Reported
57	N019534-015AMS	MS	1	Hexavalent Chromium	05/02/16 8:51 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	05/02/16 9:01 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	05/02/16 9:11 PM	Reported
60	N019534-008AMS	MS	1	Hexavalent Chromium	05/02/16 9:21 PM	Reported
61	N019534-008A	SAMP	5	Hexavalent Chromium	05/02/16 9:31 PM	Not Reported
62	N019534-008AMS	MS	5	Hexavalent Chromium	05/02/16 9:41 PM	Not Reported
63	N019534-009A	SAMP	5	Hexavalent Chromium	05/02/16 9:51 PM	Not Reported
64	N019534-009AMS	MS	5	Hexavalent Chromium	05/02/16 10:00 PM	Not Reported
65	N019534-010A	SAMP	5	Hexavalent Chromium	05/02/16 10:10 PM	Not Reported
66	N019534-010AMS	MS	5	Hexavalent Chromium	05/02/16 10:20 PM	Not Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	05/02/16 10:30 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	05/02/16 10:40 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_160502A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**02/May/16 23:45:53**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	ICV,ICV,1	10	1000	Unknown		05/02/2016 12:55	Finished	ICV @ 5ppb, IWST-160401B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		05/02/2016 13:07	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		05/02/2016 13:17	Finished	ICB
13	MB-H2O,MBLK,1	13	1000	Unknown		05/02/2016 13:27	Finished	MB R160501A
14	LCS-H2O,LCS,1	14	1000	Unknown		05/02/2016 13:38	Finished	LCS(5ppb), IWST-160401B
15	N019534-001A,SAMP,1	15	1000	Unknown		05/02/2016 13:47	Finished	SAMP, 10mL
16	N019534-001ADUP,DUP,1	16	1000	Unknown		05/02/2016 13:57	Finished	DUP, 10mL
17	N019534-001AMS,MS,1	17	1000	Unknown		05/02/2016 14:07	Finished	MS (1ppb), IWST-160401B, 10 ml
18	N019534-001AMSD,MSD,1	18	1000	Unknown		05/02/2016 14:17	Finished	MSD (1ppb), IWST-160401B, 10 r
19	N019534-002A,SAMP,10	19	1000	Unknown		05/02/2016 14:27	Finished	SAMP, 1.0> 10mL
20	N019534-002AMS,MS,10	20	1000	Unknown		05/02/2016 14:37	Finished	MS (5ppb), IWST-160401B, 1.0>1
21	BLANK	21	1000	Unknown		05/02/2016 14:47	Finished	R160331B
22	CCV-1,CCV1,1	22	1000	Unknown		05/02/2016 14:57	Finished	CCV @ 10ppb, IWST-160401A
23	CCB-1,CCB,1	23	1000	Unknown		05/02/2016 15:07	Finished	CCB
24	N019534-003A,SAMP,5	24	1000	Unknown		05/02/2016 15:17	Finished	SAMP, 2.0> 10mL
25	N019534-003AMS,MS,5	25	1000	Unknown		05/02/2016 15:27	Finished	MS (5ppb), IWST-160401B, 2.0>1
26	N019534-004A,SAMP,1	26	1000	Unknown		05/02/2016 15:37	Finished	SAMP, 10mL
27	N019534-004AMS,MS,1	27	1000	Unknown		05/02/2016 15:47	Finished	MS (1ppb), IWST-160401B, 10 ml
28	N019534-005A,SAMP,1	28	1000	Unknown		05/02/2016 15:57	Finished	SAMP, 10mL
29	N019534-005AMS,MS,1	29	1000	Unknown		05/02/2016 16:07	Finished	MS (1ppb), IWST-160401B, 10 ml
30	N019534-002A,SAMP,10	30	1000	Unknown		05/02/2016 16:17	Finished	SAMP, 1.0> 10mL
31	N019534-002AMS,MS,10	31	1000	Unknown		05/02/2016 16:27	Finished	MS (5ppb), IWST-160401B, 1.0>1
32	N019534-003A,SAMP,10	32	1000	Unknown		05/02/2016 16:37	Finished	SAMP, 1.0> 10mL
33	N019534-003AMS,MS,10	33	1000	Unknown		05/02/2016 16:46	Finished	MS (5ppb), IWST-160401B, 1.0>1
34	CCV-2,CCV,1	34	1000	Unknown		05/02/2016 16:56	Finished	CCV @ 5ppb, IWST-160401A
35	CCB-2,CCB,1	35	1000	Unknown		05/02/2016 17:06	Finished	CCB
36	N019534-006A,SAMP,1	1	1000	Unknown		05/02/2016 17:21	Finished	SAMP, 10mL
37	N019534-006AMS,MS,1	2	1000	Unknown		05/02/2016 17:32	Finished	MS (1ppb), IWST-160401B, 10 ml
38	N019534-007A,SAMP,5	3	1000	Unknown		05/02/2016 17:42	Finished	SAMP, 2.0> 10mL
39	N019534-007AMS,MS,5	4	1000	Unknown		05/02/2016 17:52	Finished	MS (5ppb), IWST-160401B, 2.0>1
40	N019534-008A,SAMP,1	5	1000	Unknown		05/02/2016 18:02	Finished	SAMP, 10mL
41	N019534-008AMS,MS,1	6	1000	Unknown		05/02/2016 18:12	Finished	MS (1ppb), IWST-160401B, 10 ml
42	N019534-009A,SAMP,1	7	1000	Unknown		05/02/2016 18:22	Finished	SAMP, 10mL
43	N019534-009AMS,MS,1	8	1000	Unknown		05/02/2016 18:32	Finished	MS (1ppb), IWST-160401B, 10 ml
44	N019534-010A,SAMP,1	9	1000	Unknown		05/02/2016 18:42	Finished	SAMP, 10mL
45	N019534-010AMS,MS,1	10	1000	Unknown		05/02/2016 18:52	Finished	MS (1ppb), IWST-160401B, 10 ml
46	CCV-3,CCV1,1	11	1000	Unknown		05/02/2016 19:02	Finished	CCV @ 10ppb, IWST-160401A
47	CCB-3,CCB,1	12	1000	Unknown		05/02/2016 19:12	Finished	CCB
48	N019534-011A,SAMP,1	13	1000	Unknown		05/02/2016 19:22	Finished	SAMP, 10mL
49	N019534-011AMS,MS,1	14	1000	Unknown		05/02/2016 19:32	Finished	MS (1ppb), IWST-160401B, 10 ml
50	N019534-012A,SAMP,1	15	1000	Unknown		05/02/2016 19:42	Finished	SAMP, 10mL
51	N019534-012AMS,MS,1	16	1000	Unknown		05/02/2016 19:51	Finished	MS (1ppb), IWST-160401B, 10 ml
52	N019534-013A,SAMP,1	17	1000	Unknown		05/02/2016 20:01	Finished	SAMP, 10mL
53	N019534-013AMS,MS,1	18	1000	Unknown		05/02/2016 20:11	Finished	MS (1ppb), IWST-160401B, 10 ml
54	N019534-014A,SAMP,1	19	1000	Unknown		05/02/2016 20:21	Finished	SAMP, 10mL
55	N019534-014AMS,MS,1	20	1000	Unknown		05/02/2016 20:31	Finished	MS (1ppb), IWST-160401B, 10 ml
56	N019534-015A,SAMP,1	21	1000	Unknown		05/02/2016 20:41	Finished	SAMP, 10mL
57	N019534-015AMS,MS,1	22	1000	Unknown		05/02/2016 20:51	Finished	MS (1ppb), IWST-160401B, 10 ml
58	CCV-4,CCV,1	23	1000	Unknown		05/02/2016 21:01	Finished	CCV @ 5ppb, IWST-160401A
59	CCB-4,CCB,1	24	1000	Unknown		05/02/2016 21:11	Finished	CCB
60	N019534-008AMS,MS,1	25	1000	Unknown		05/02/2016 21:21	Finished	MS (5ppb), IWST-160401B, 10 ml
61	N019534-008A,SAMP,5	26	1000	Unknown		05/02/2016 21:31	Finished	SAMP, 2.0> 10mL
62	N019534-008AMS,MS,5	27	1000	Unknown		05/02/2016 21:41	Finished	MS (1ppb), IWST-160401B, 2.0>1
63	N019534-009A,SAMP,5	28	1000	Unknown		05/02/2016 21:51	Finished	SAMP, 2.0> 10mL
64	N019534-009AMS,MS,5	29	1000	Unknown		05/02/2016 22:00	Finished	MS (1ppb), IWST-160401B, 2.0>1
65	N019534-010A,SAMP,5	30	1000	Unknown		05/02/2016 22:10	Finished	SAMP, 2.0> 10mL
66	N019534-010AMS,MS,5	31	1000	Unknown		05/02/2016 22:20	Finished	MS (1ppb), IWST-160401B, 2.0>1
67	CCV-5,CCV1,1	32	1000	Unknown		05/02/2016 22:30	Finished	CCV @ 10ppb, IWST-160401A
68	CCB-5,CCB,1	33	1000	Unknown		05/02/2016 22:40	Finished	CCB
69	SHUTDOWN	34	1000	Unknown		05/02/2016 22:50	Finished	
70	Eluent: R160429A, R160502A	35	1000	Unknown		n.a.	Finished	Eluent

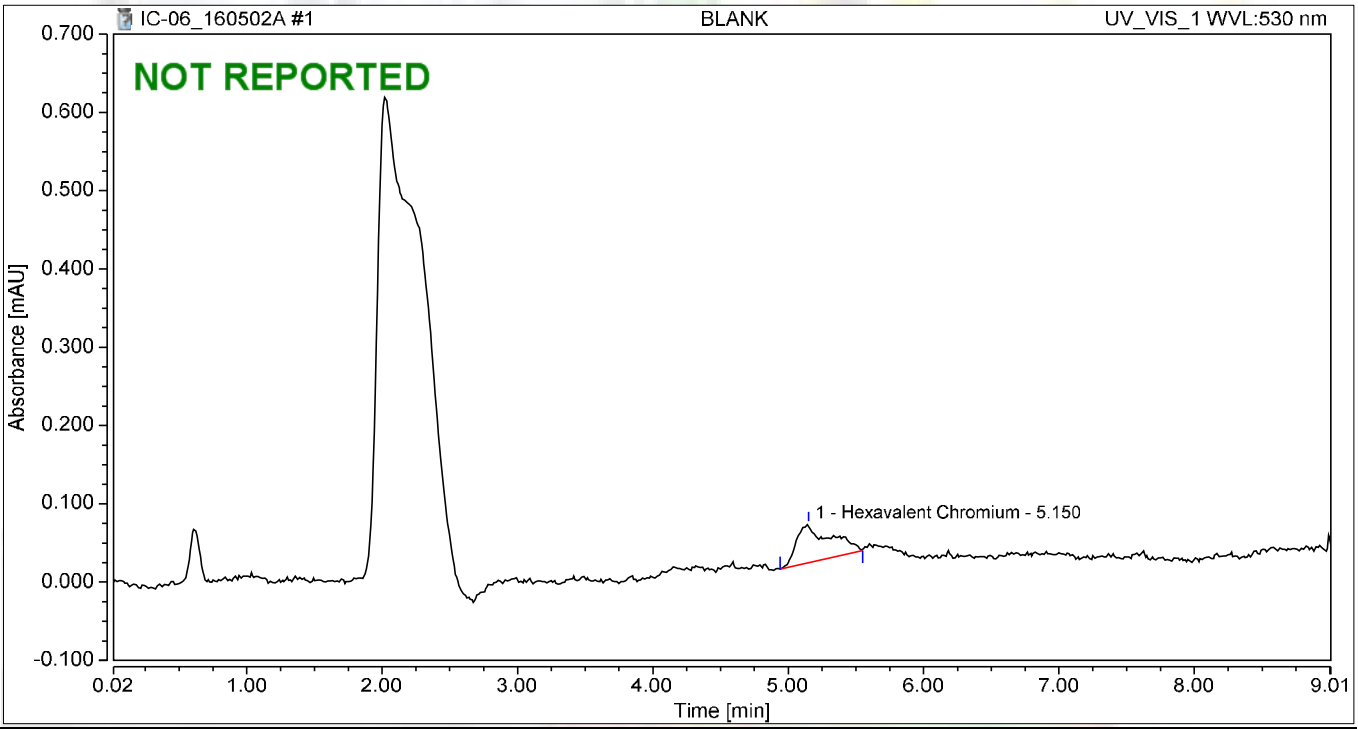
71	PCR: R160429B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

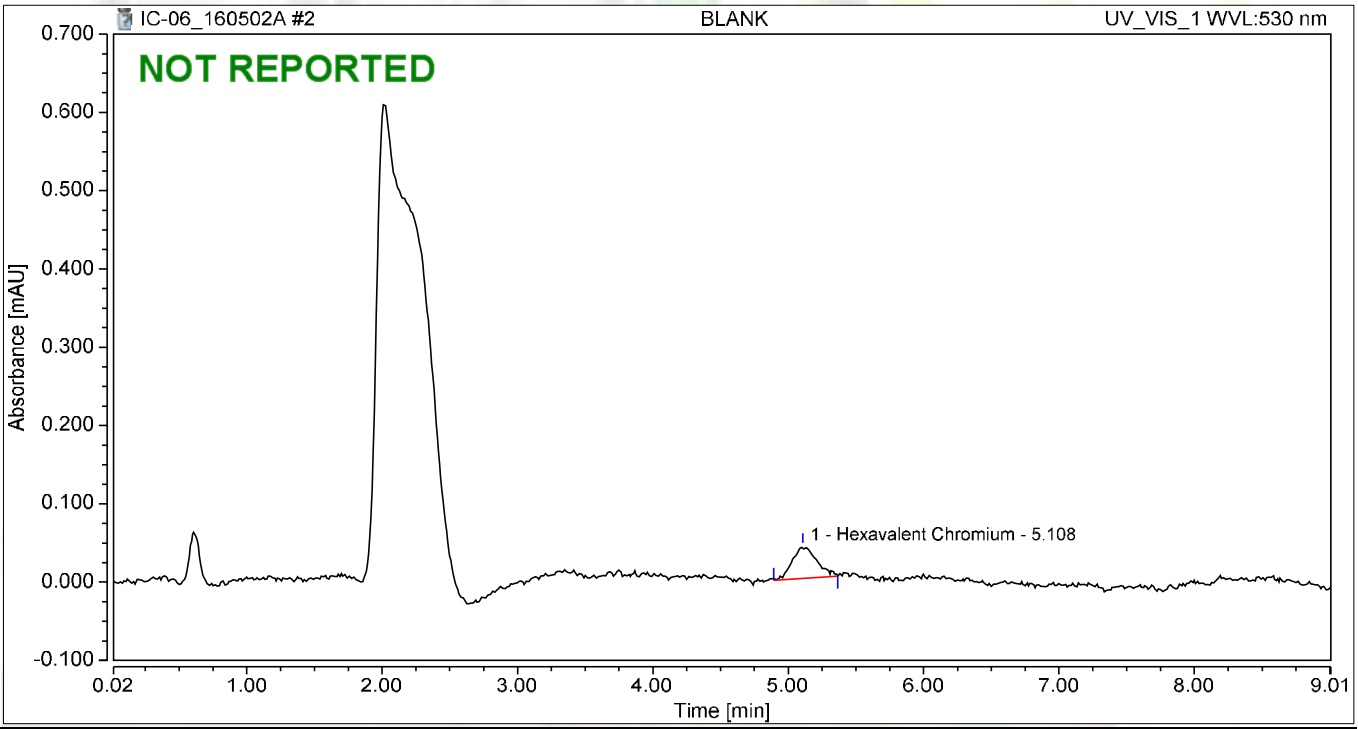
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.014	0.049	100.00	100.00	0.0418
Total:			**0.014**	**0.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

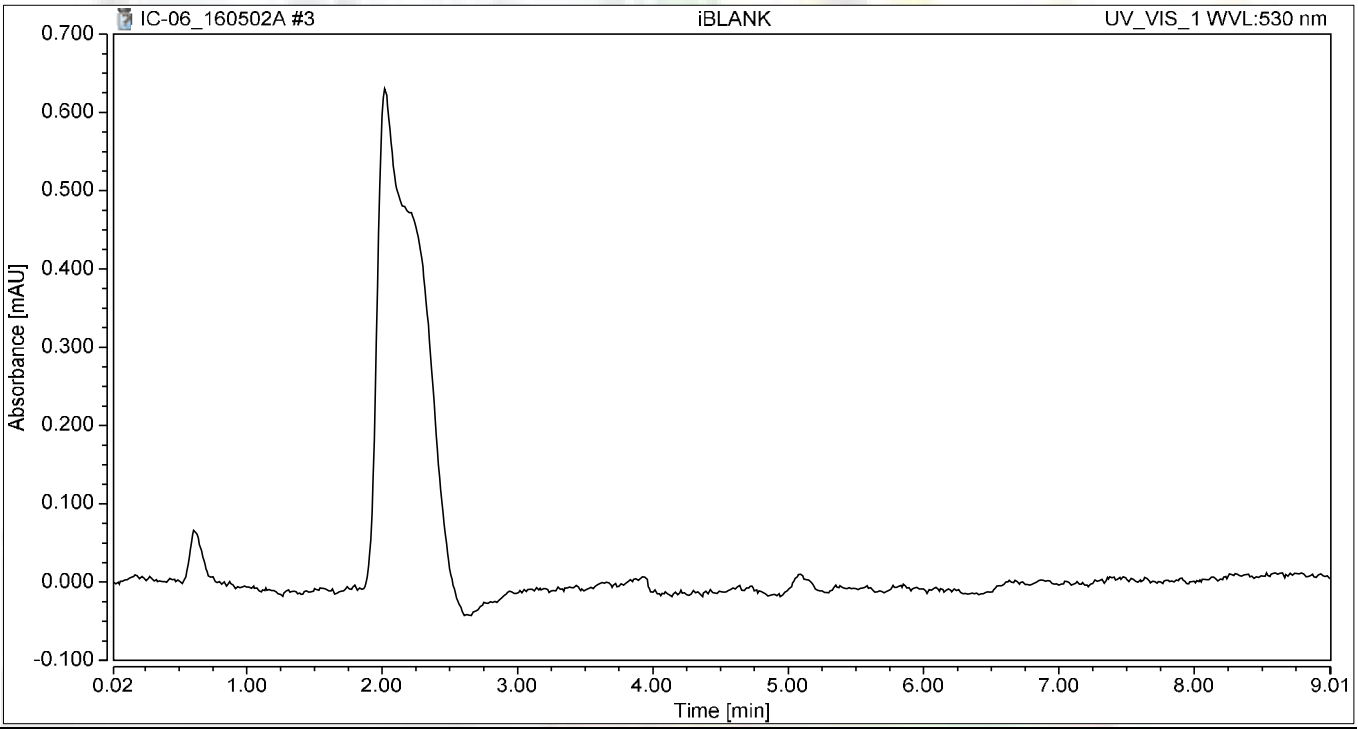
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.008	0.041	100.00	100.00	0.0183
Total:			**0.008**	**0.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

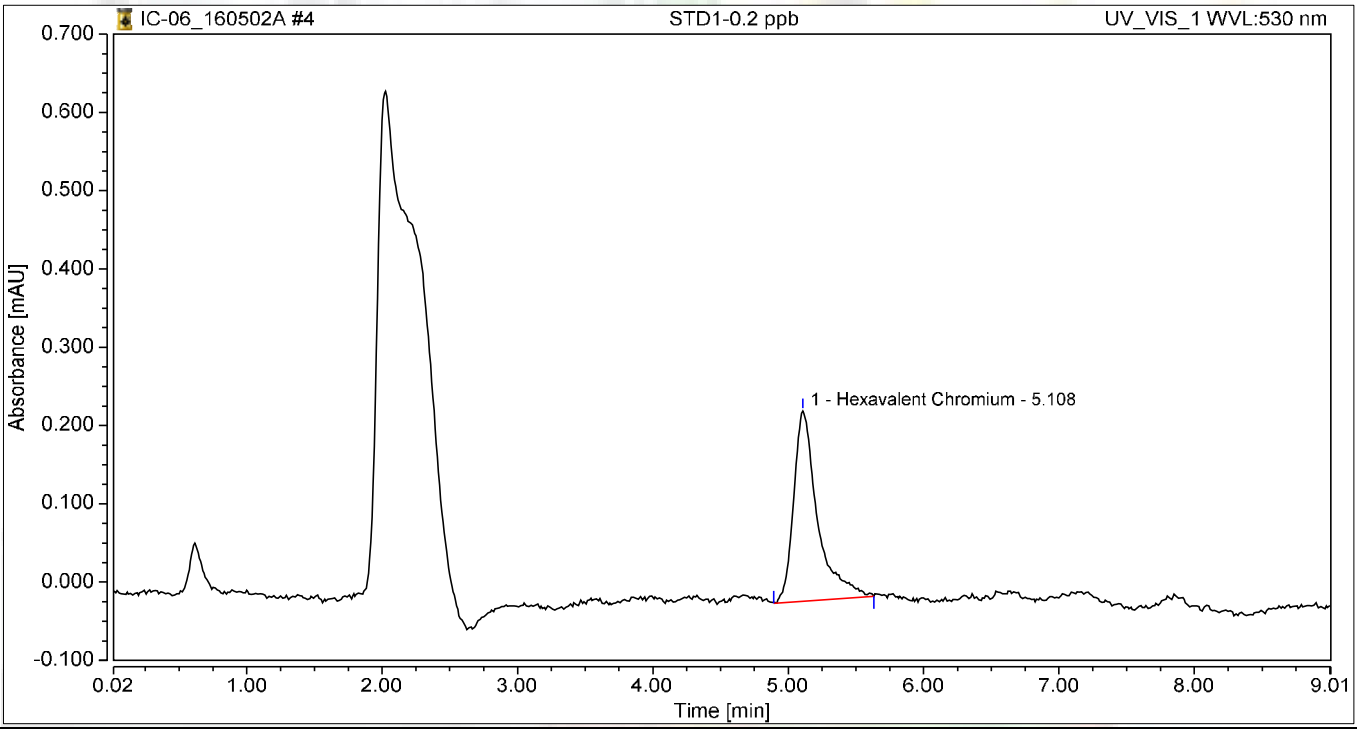
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

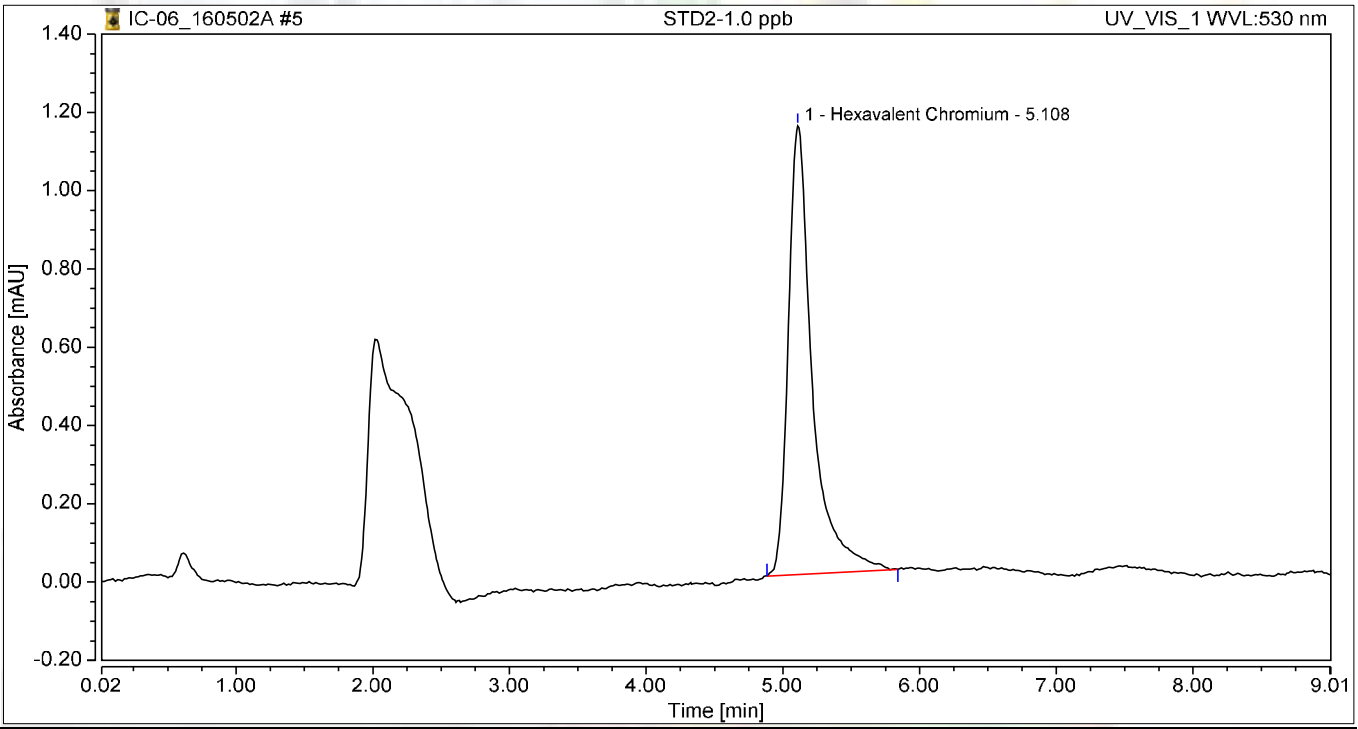
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.050	0.243	100.00	100.00	0.1956
Total:			**0.050**	**0.243**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

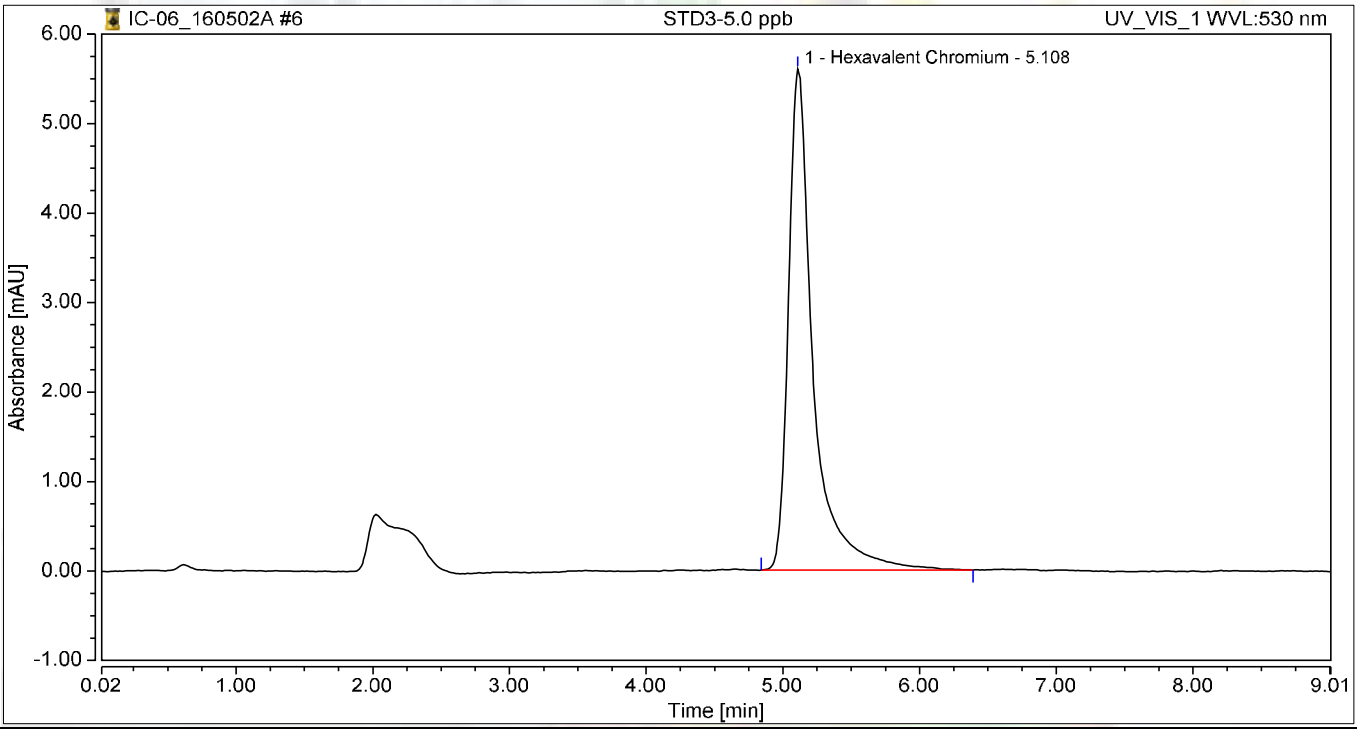
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.234	1.147	100.00	100.00	0.9843
Total:			**0.234**	**1.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

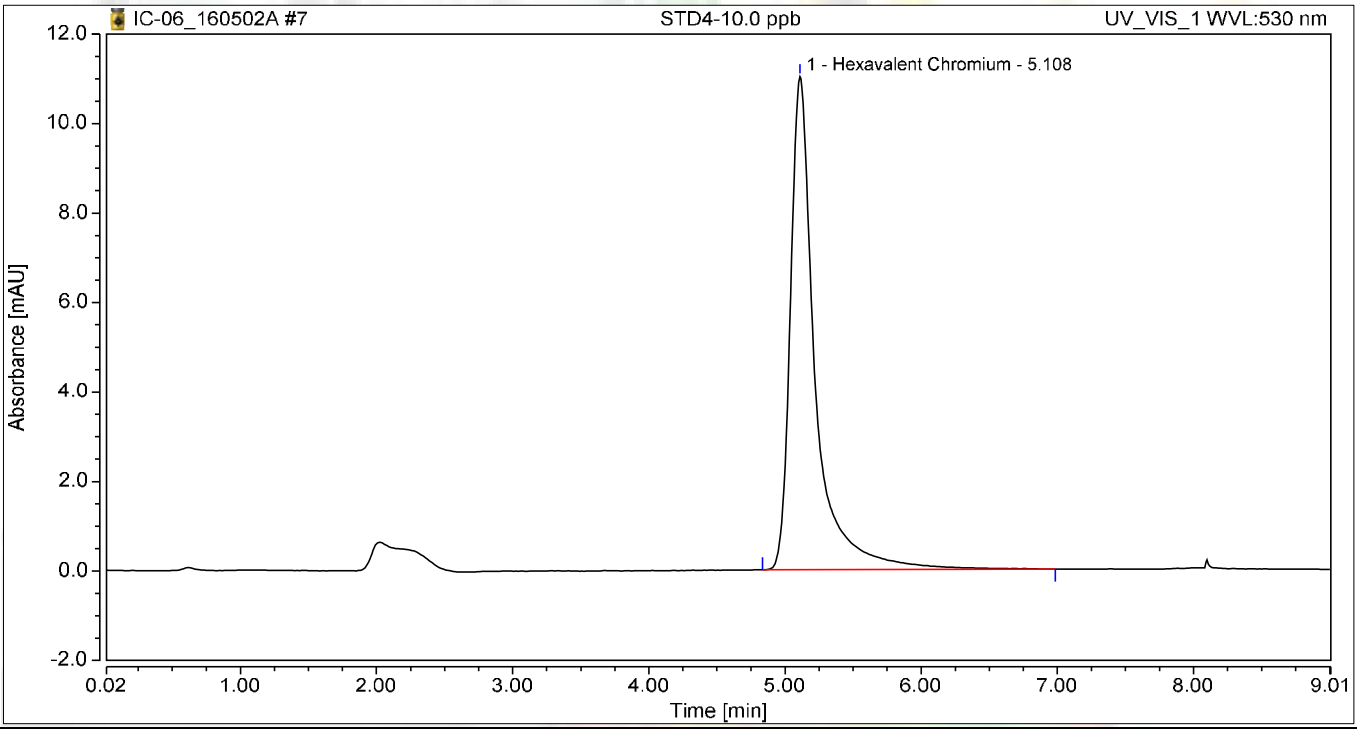
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.173	5.600	100.00	100.00	5.0033
Total:			**1.173**	**5.600**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

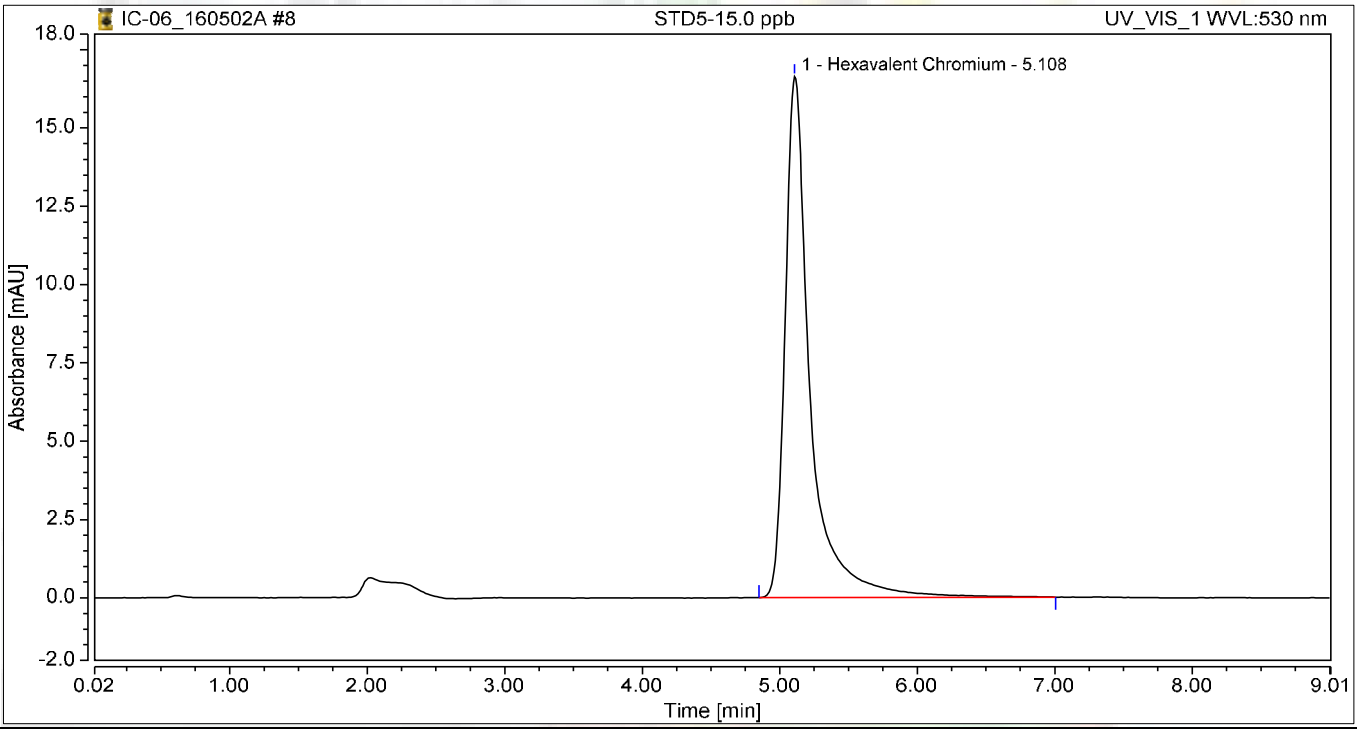
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.340	11.026	100.00	100.00	9.9997
Total:			**2.340**	**11.026**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

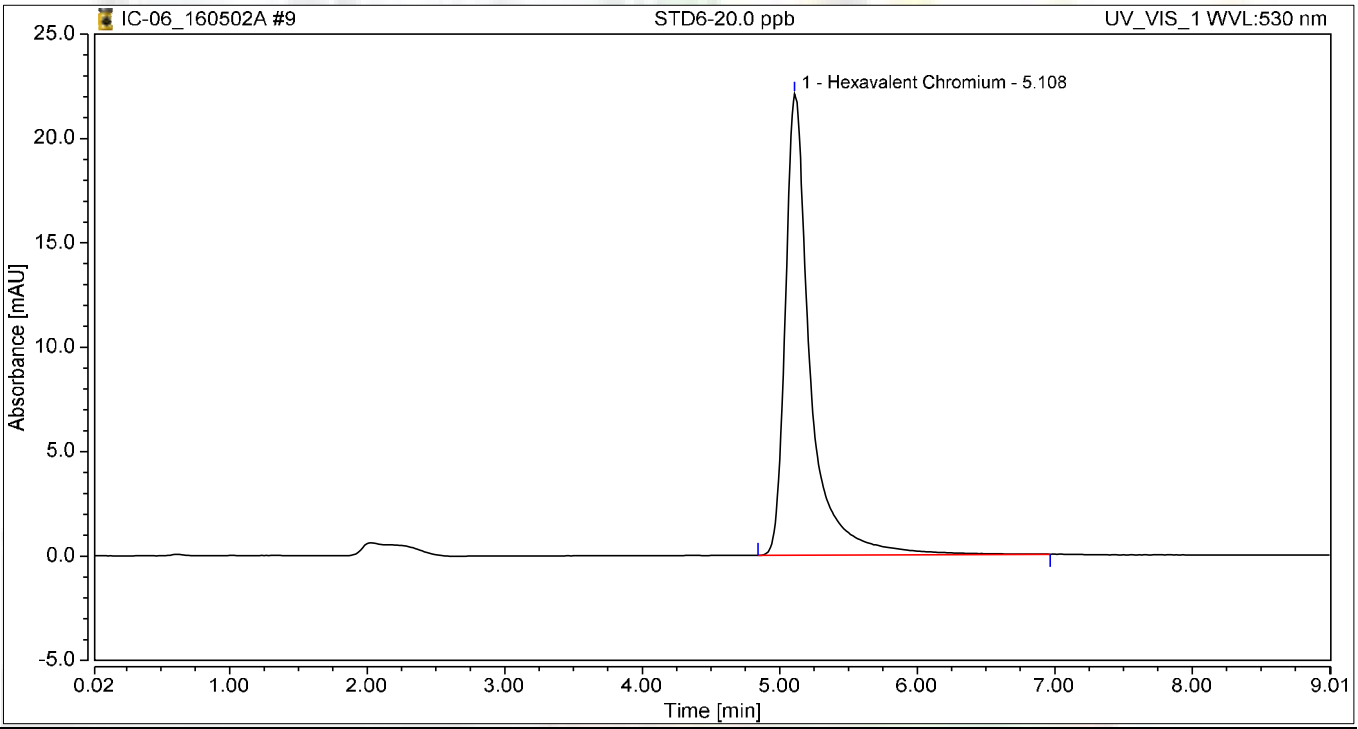
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	3.524	16.642	100.00	100.00	15.0679
Total:			**3.524**	**16.642**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**07**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



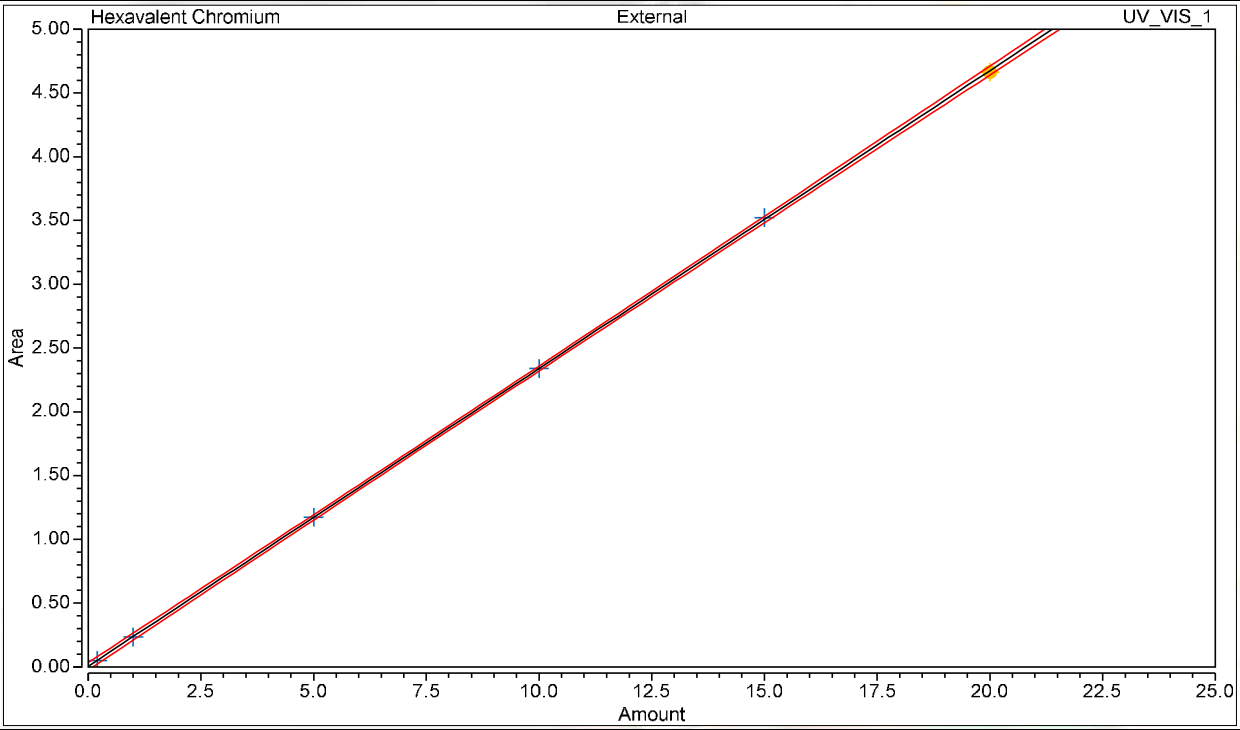
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	4.664	22.077	100.00	100.00	19.9492
Total:			**4.664**	**22.077**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin, WithOffset	*Offset (C0)*	0.0042
Evaluation Type	Area	*Slope (C1)*	0.2336
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

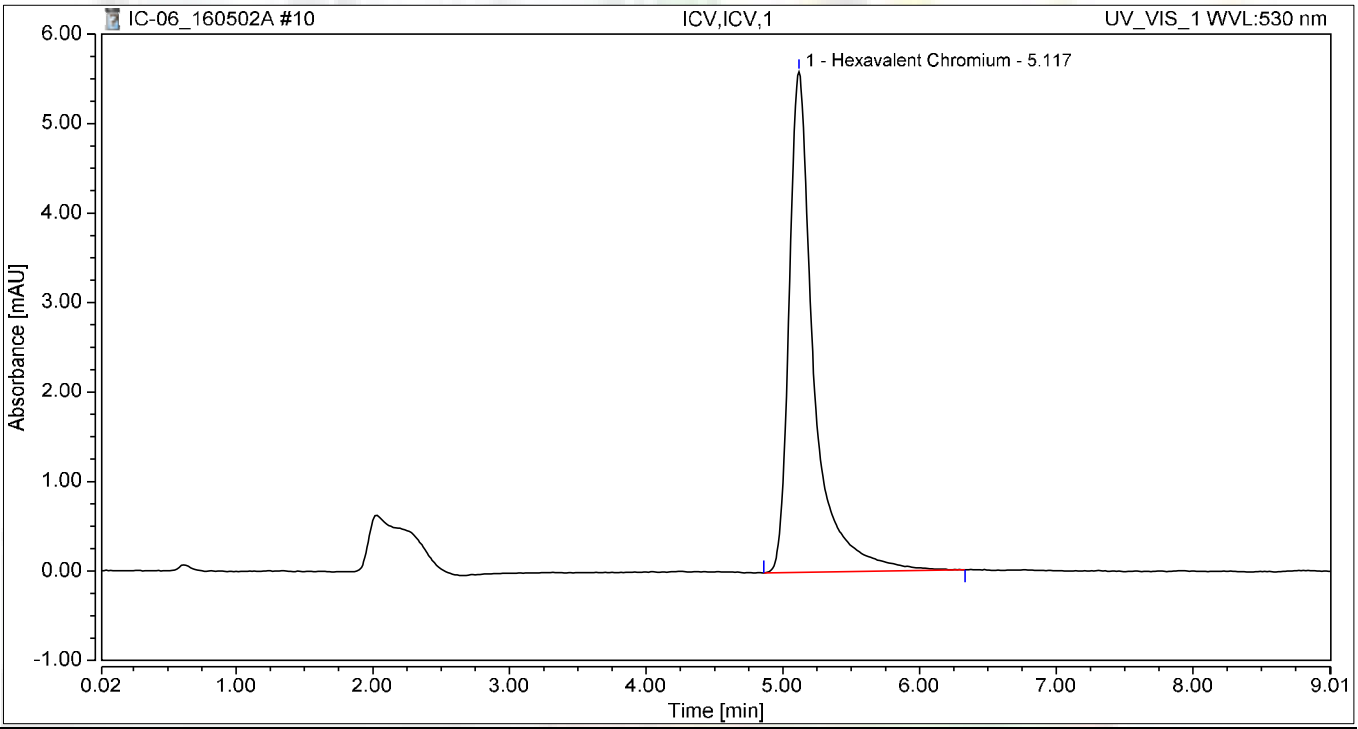
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	02	0.2000	0.0499	0.050	0.243
5	STD2-1.0 ppb	03	1.0000	0.2341	0.234	1.147
6	STD3-5.0 ppb	04	5.0000	1.1728	1.173	5.600
7	STD4-10.0 ppb	05	10.0000	2.3399	2.340	11.026
8	STD5-15.0 ppb	06	15.0000	3.5237	3.524	16.642
9	STD6-20.0 ppb	07	20.0000	4.6638	4.664	22.077

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

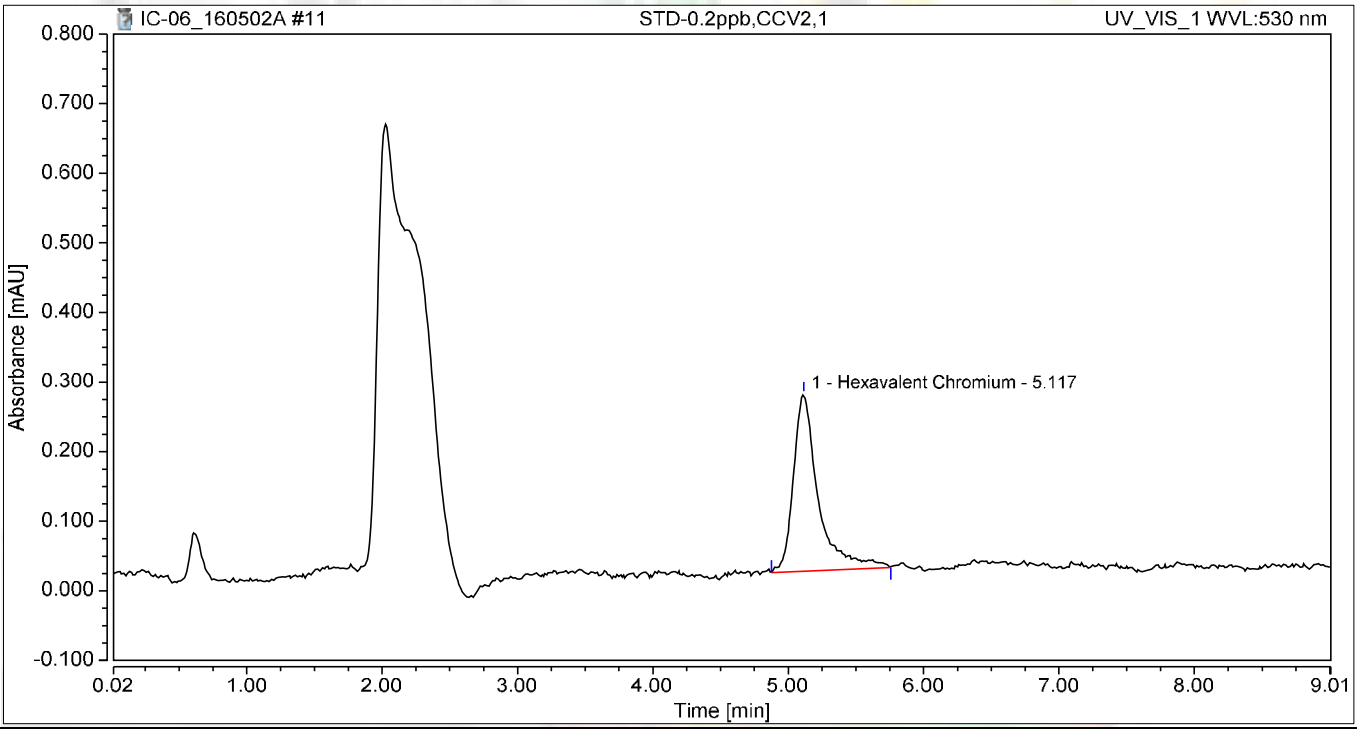
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	1.174	5.596	100.00	100.00	5.0075
Total:			**1.174**	**5.596**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

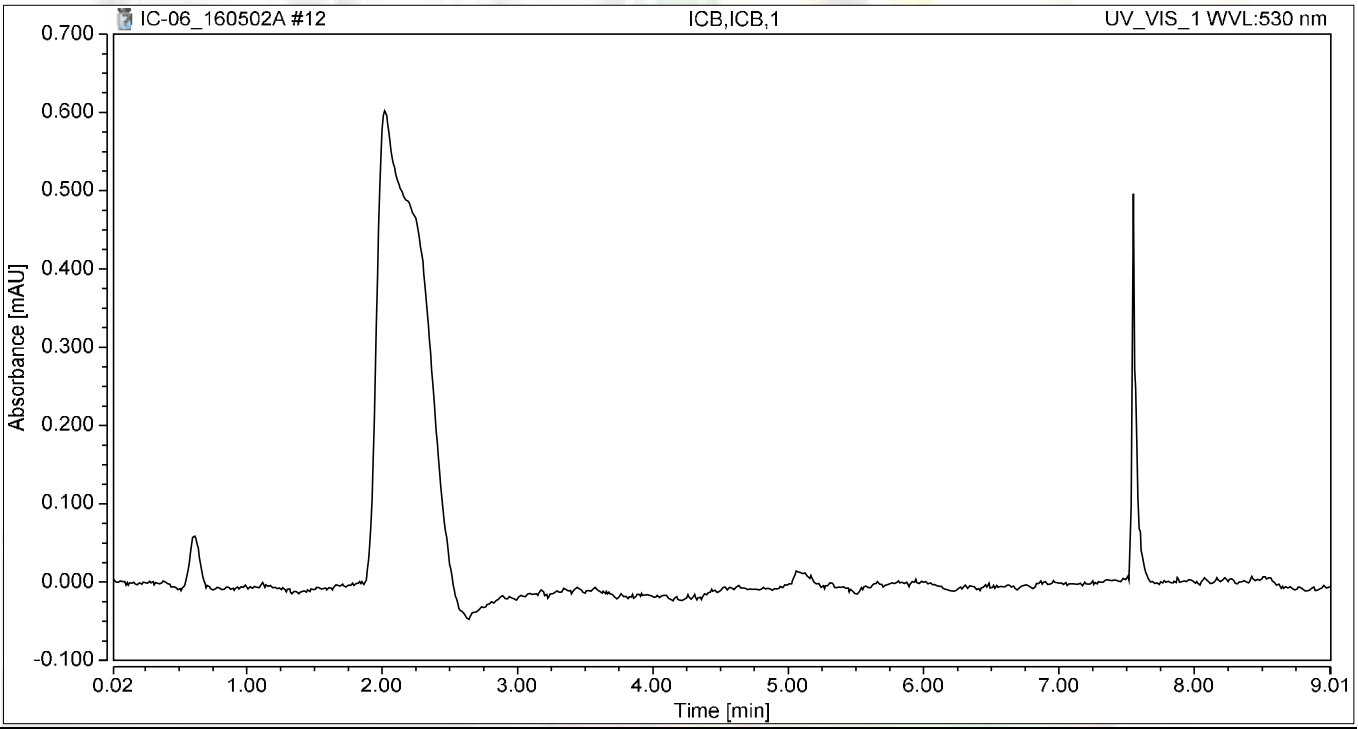
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.054	0.254	100.00	100.00	0.2134
Total:			**0.054**	**0.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/May/16 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160517A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:21 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/02/16 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/02/16 11:43 AM	Reported
4	STD1-0.2 ppb	ICAL	1	Hexavalent Chromium	05/02/16 11:53 AM	Reported
5	STD2-1.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:03 PM	Reported
6	STD3-5.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:13 PM	Reported
7	STD4-10.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:23 PM	Reported
8	STD5-15.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:33 PM	Reported
9	STD6-20.0 ppb	ICAL	1	Hexavalent Chromium	05/02/16 12:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/17/16 10:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/17/16 11:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/17/16 11:18 AM	Reported
13	STD-0.2ppb	CCV2	1	Hexavalent Chromium	05/17/16 11:28 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/17/16 11:38 AM	Reported
15	MB-R108530	MBLK	1	Hexavalent Chromium	05/17/16 11:48 AM	Reported
16	LCS-R108530	LCS	1	Hexavalent Chromium	05/17/16 11:58 AM	Reported
17	N019741-001A	SAMP	1	Hexavalent Chromium	05/17/16 12:08 PM	Reported
18	N019741-001ADUP	DUP	1	Hexavalent Chromium	05/17/16 12:18 PM	Reported
19	N019741-001AMS	MS	1	Hexavalent Chromium	05/17/16 12:28 PM	Reported
20	N019741-001AMSD	MSD	1	Hexavalent Chromium	05/17/16 12:38 PM	Reported
21	N019741-002A	SAMP	100	Hexavalent Chromium	05/17/16 12:48 PM	Not Reported
22	N019742-003A	SAMP	1	Hexavalent Chromium	05/17/16 12:58 PM	Reported
23	N019729-006A	SAMP	1	Hexavalent Chromium	05/17/16 1:08 PM	Reported
24	N019729-006AMS	MS	1	Hexavalent Chromium	05/17/16 1:18 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/17/16 1:28 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/17/16 1:38 PM	Reported
27	N019730-001A	SAMP	1	Hexavalent Chromium	05/17/16 1:48 PM	Reported
28	N019730-001AMS	MS	1	Hexavalent Chromium	05/17/16 1:58 PM	Reported
29	N019741-002A	SAMP	1	Hexavalent Chromium	05/17/16 2:08 PM	Reported
30	N019611-001A	SAMP	20	Hexavalent Chromium	05/17/16 2:18 PM	Not Reported
31	N019611-001AMS	MS	20	Hexavalent Chromium	05/17/16 2:28 PM	Not Reported
32	N019628-007A	SAMP	5	Hexavalent Chromium	05/17/16 2:38 PM	Not Reported
33	N019628-007AMS	MS	5	Hexavalent Chromium	05/17/16 2:47 PM	Not Reported
34	N019639-002A	SAMP	1	Hexavalent Chromium	05/17/16 2:57 PM	Not Reported
35	N019639-002AMS	MS	1	Hexavalent Chromium	05/17/16 3:07 PM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	05/17/16 3:17 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	05/17/16 3:27 PM	Reported
38	N019639-007A	SAMP	1	Hexavalent Chromium	05/17/16 3:37 PM	Not Reported
39	N019639-007AMS	MS	1	Hexavalent Chromium	05/17/16 3:47 PM	Not Reported
40	N019639-015A	SAMP	1	Hexavalent Chromium	05/17/16 3:57 PM	Not Reported
41	N019639-015AMS	MS	1	Hexavalent Chromium	05/17/16 4:07 PM	Not Reported
42	N019654-010A	SAMP	1	Hexavalent Chromium	05/17/16 4:17 PM	Not Reported
43	N019654-010AMS	MS	1	Hexavalent Chromium	05/17/16 4:27 PM	Not Reported
44	CCV-4	CCV1	1	Hexavalent Chromium	05/17/16 4:38 PM	Not Reported
45	CCB-4	CCB	1	Hexavalent Chromium	05/17/16 4:50 PM	Not Reported

5/25/2016

Injection Log Summary

Sequence Details

Name:	**IC-06_160517A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\IC-6\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**18/May/16 10:01:28**
No. of Injections:	**48**	*Updated By:*	**ics 5000**

Injection Details

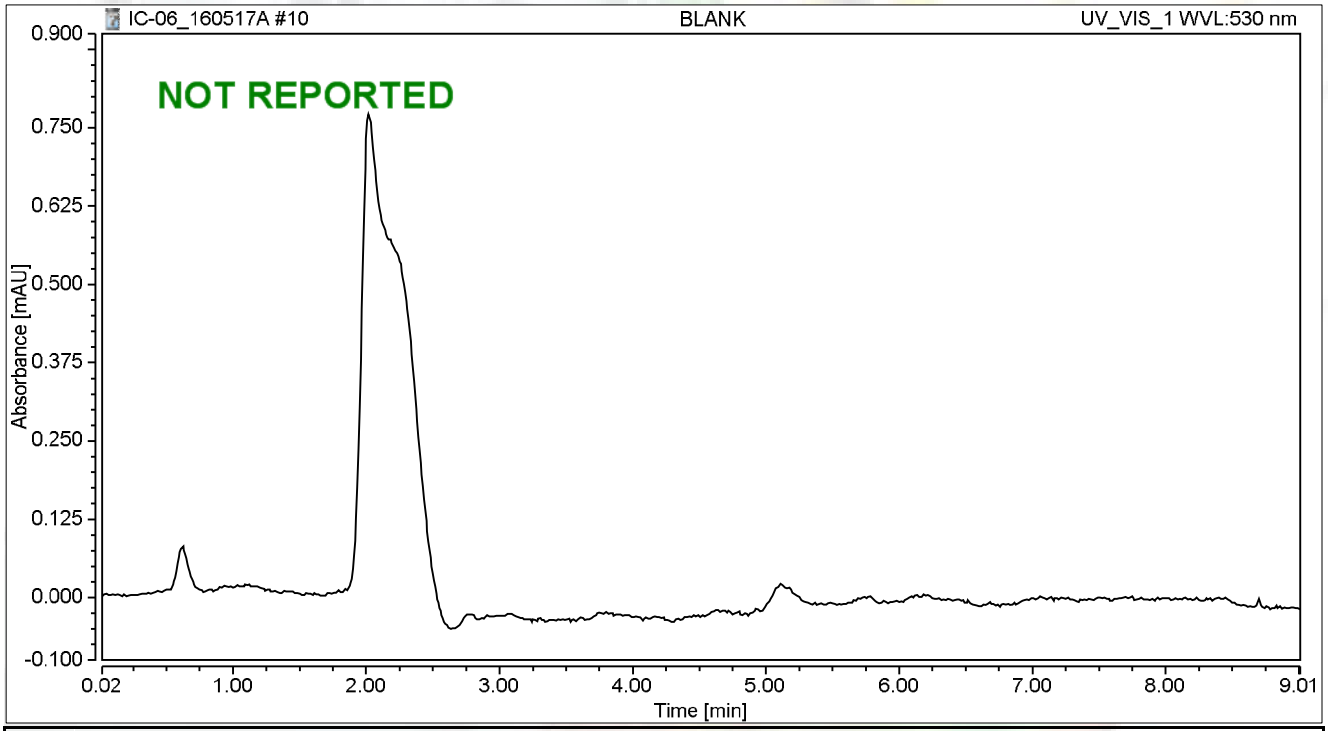
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/02/2016 11:21	Finished	BLANK
2	BLANK	2	1000	Unknown		05/02/2016 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/02/2016 11:43	Finished	iBLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	02	05/02/2016 11:53	Finished	0.2ppb, IWST160401A
5	STD2-1.0 ppb	5	1000	Calibration Standard	03	05/02/2016 12:03	Finished	1.0ppb, IWST160401A
6	STD3-5.0 ppb	6	1000	Calibration Standard	04	05/02/2016 12:13	Finished	5.0ppb, IWST160401A
7	STD4-10.0 ppb	7	1000	Calibration Standard	05	05/02/2016 12:23	Finished	10ppb, IWST160401A
8	STD5-15.0 ppb	8	1000	Calibration Standard	06	05/02/2016 12:33	Finished	15ppb, IWST160401A
9	STD6-20.0 ppb	9	1000	Calibration Standard	07	05/02/2016 12:43	Finished	20ppb, IWST160401A
10	BLANK	1	1000	Unknown		05/17/2016 10:57	Finished	
11	BLANK	2	1000	Unknown		05/17/2016 11:08	Finished	
12	CCV-1,CCV,1	3	1000	Unknown		05/17/2016 11:18	Finished	CCV @ 5ppb, IWST-160401A
13	STD-0.2ppb,CCV2,1	4	1000	Unknown		05/17/2016 11:28	Finished	PQL @ 0.2 ppb
14	CCB-1,CCB,1	5	1000	Unknown		05/17/2016 11:38	Finished	CCB R160512C
15	MB-H2O,MBLK,1	6	1000	Unknown		05/17/2016 11:48	Finished	MB R160502C
16	LCS-H2O,LCS,1	7	1000	Unknown		05/17/2016 11:58	Finished	LCS(5ppb), IWST-160401B
17	N019741-001A,SAMP,1	8	1000	Unknown		05/17/2016 12:08	Finished	SAMP, 10mL
18	N019741-001ADUP,DUP,1	9	1000	Unknown		05/17/2016 12:18	Finished	DUP, 10mL
19	N019741-001AMS,MS,1	10	1000	Unknown		05/17/2016 12:28	Finished	MS (5ppb), IWST-160401B, 10 m
20	N019741-001AMSD,MSD,1	11	1000	Unknown		05/17/2016 12:38	Finished	MSD (5ppb), IWST-160401B, 10
21	N019741-002A,SAMP,100	12	1000	Unknown		05/17/2016 12:48	Finished	SAMP, 0.10>10mL
22	N019742-003A,SAMP,1	13	1000	Unknown		05/17/2016 12:58	Finished	SAMP, 10mL
23	N019729-006A,SAMP,1	14	1000	Unknown		05/17/2016 13:08	Finished	SAMP, 10mL
24	N019729-006AMS,MS,1	15	1000	Unknown		05/17/2016 13:18	Finished	MS (1ppb), IWST-160401B, 10 m
25	CCV-2,CCV1,1	16	1000	Unknown		05/17/2016 13:28	Finished	CCV @ 10ppb, IWST-160401A
26	CCB-2,CCB,1	17	1000	Unknown		05/17/2016 13:38	Finished	CCB
27	N019730-001A,SAMP,1	18	1000	Unknown		05/17/2016 13:48	Finished	SAMP, 10mL
28	N019730-001AMS,MS,1	19	1000	Unknown		05/17/2016 13:58	Finished	MS (1ppb), IWST-160401B, 10 m
29	N019741-002A,SAMP,1	20	1000	Unknown		05/17/2016 14:08	Finished	SAMP, 10mL
30	N019611-001A,SAMP,20	21	1000	Unknown		05/17/2016 14:18	Finished	SAMP, 0.5>10mL
31	N019611-001AMS,MS,20	22	1000	Unknown		05/17/2016 14:28	Finished	MS (5ppb), IWST-160401B, 0.5>
32	N019628-007A,SAMP,5	23	1000	Unknown		05/17/2016 14:38	Finished	SAMP, 2.0>10mL
33	N019628-007AMS,MS,5	24	1000	Unknown		05/17/2016 14:47	Finished	MS (1ppb), IWST-160401B, 2.0>
34	N019639-002A,SAMP,1	25	1000	Unknown		05/17/2016 14:57	Finished	SAMP, 10mL
35	N019639-002AMS,MS,1	26	1000	Unknown		05/17/2016 15:07	Finished	MS (1ppb), IWST-160401B, 10 m
36	CCV-3,CCV,1	27	1000	Unknown		05/17/2016 15:17	Finished	CCV @ 5ppb, IWST-160401A
37	CCB-3,CCB,1	28	1000	Unknown		05/17/2016 15:27	Finished	CCB
38	N019639-007A,SAMP,1	29	1000	Unknown		05/17/2016 15:37	Finished	SAMP, 10mL
39	N019639-007AMS,MS,1	30	1000	Unknown		05/17/2016 15:47	Finished	MS (5ppb), IWST-160401B, 10 m
40	N019639-015A,SAMP,1	31	1000	Unknown		05/17/2016 15:57	Finished	SAMP, 10mL
41	N019639-015AMS,MS,1	32	1000	Unknown		05/17/2016 16:07	Finished	MS (5ppb), IWST-160401B, 10 m
42	N019654-010A,SAMP,1	33	1000	Unknown		05/17/2016 16:17	Finished	SAMP, 10mL
43	N019654-010AMS,MS,1	34	1000	Unknown		05/17/2016 16:27	Finished	MS (5ppb), IWST-160401B, 10 m
44	CCV-4,CCV1,1	35	1000	Unknown		05/17/2016 16:38	Finished	CCV @ 10ppb, IWST-160401A
45	CCB-4,CCB,1	36	1000	Unknown		05/17/2016 16:50	Finished	CCB
46	SHUTDOWN	37	1000	Unknown		05/17/2016 17:00	Finished	
47	Eluent: R160510E	38	1000	Unknown		n.a.	Finished	Eluent
48	PCR: R160512B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

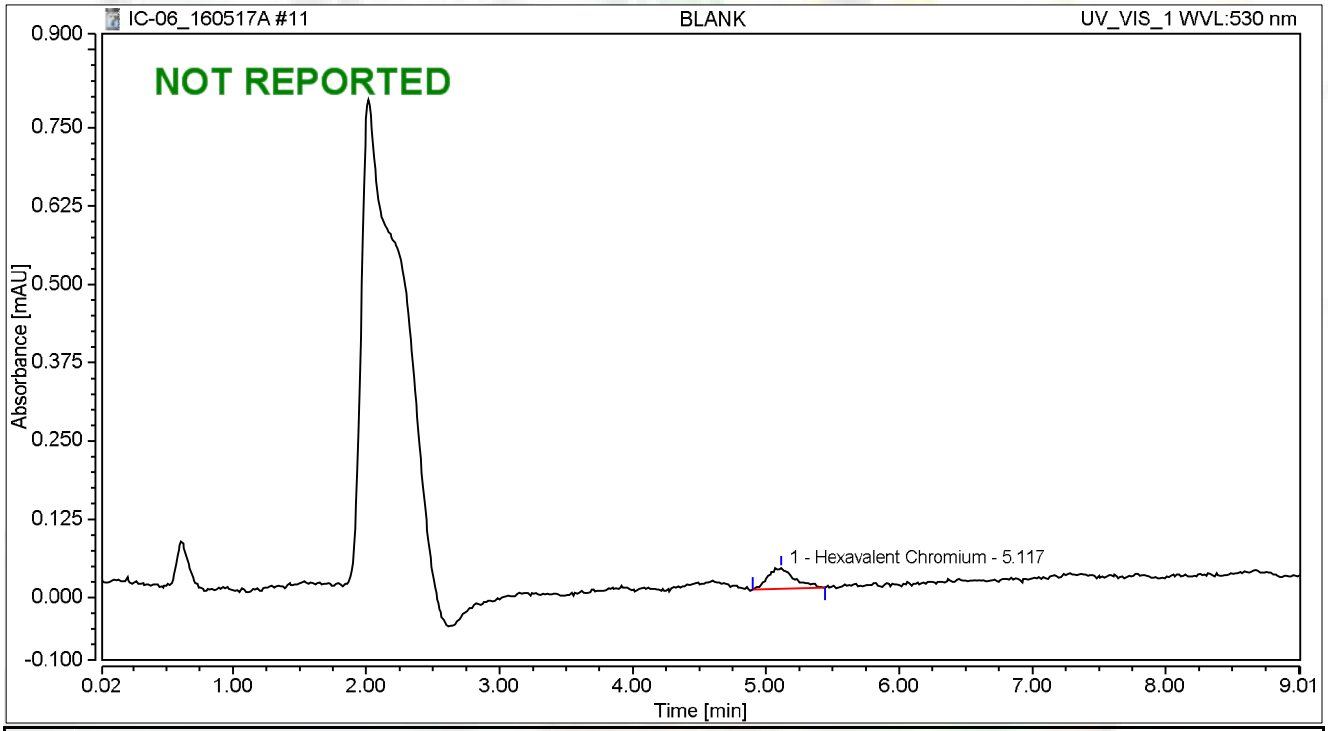
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

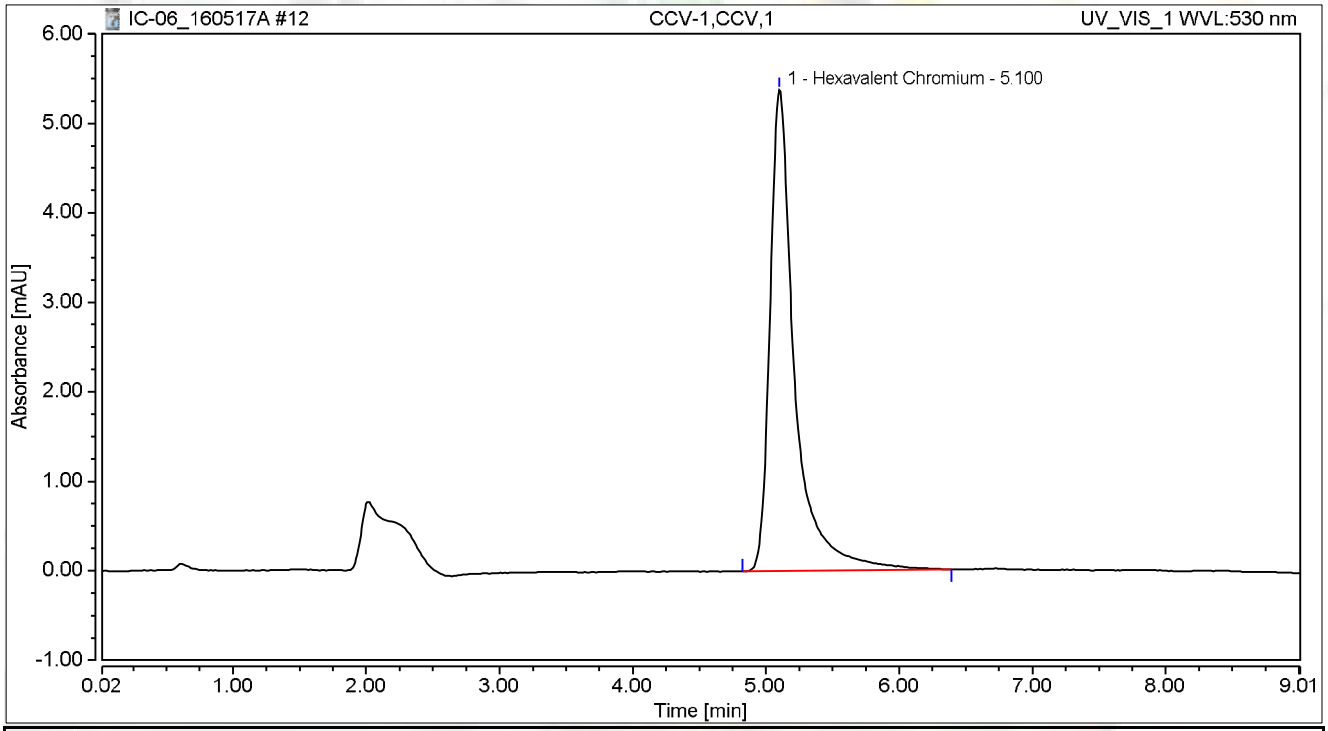
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.008	0.033	100.00	100.00	0.0148
Total:			**0.008**	**0.033**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 11:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

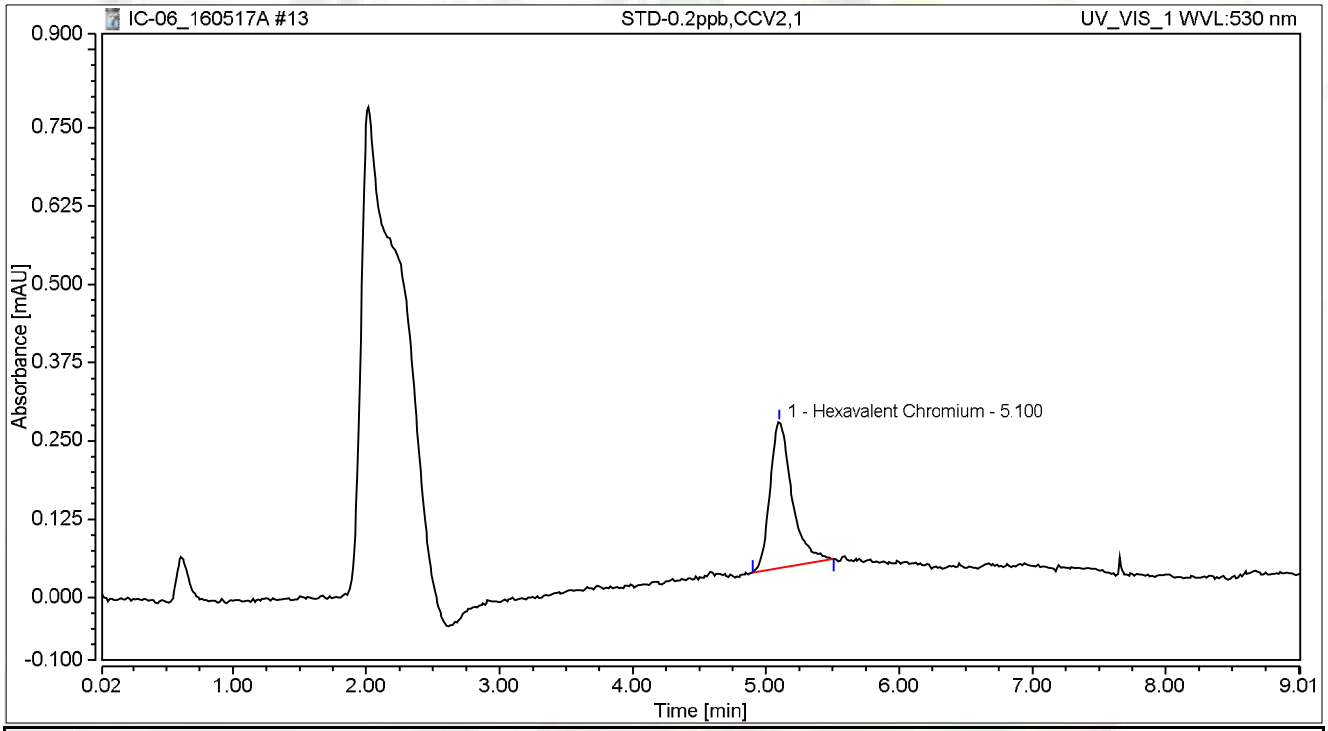
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.161	5.379	100.00	100.00	4.9541
Total:			**1.161**	**5.379**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 11:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

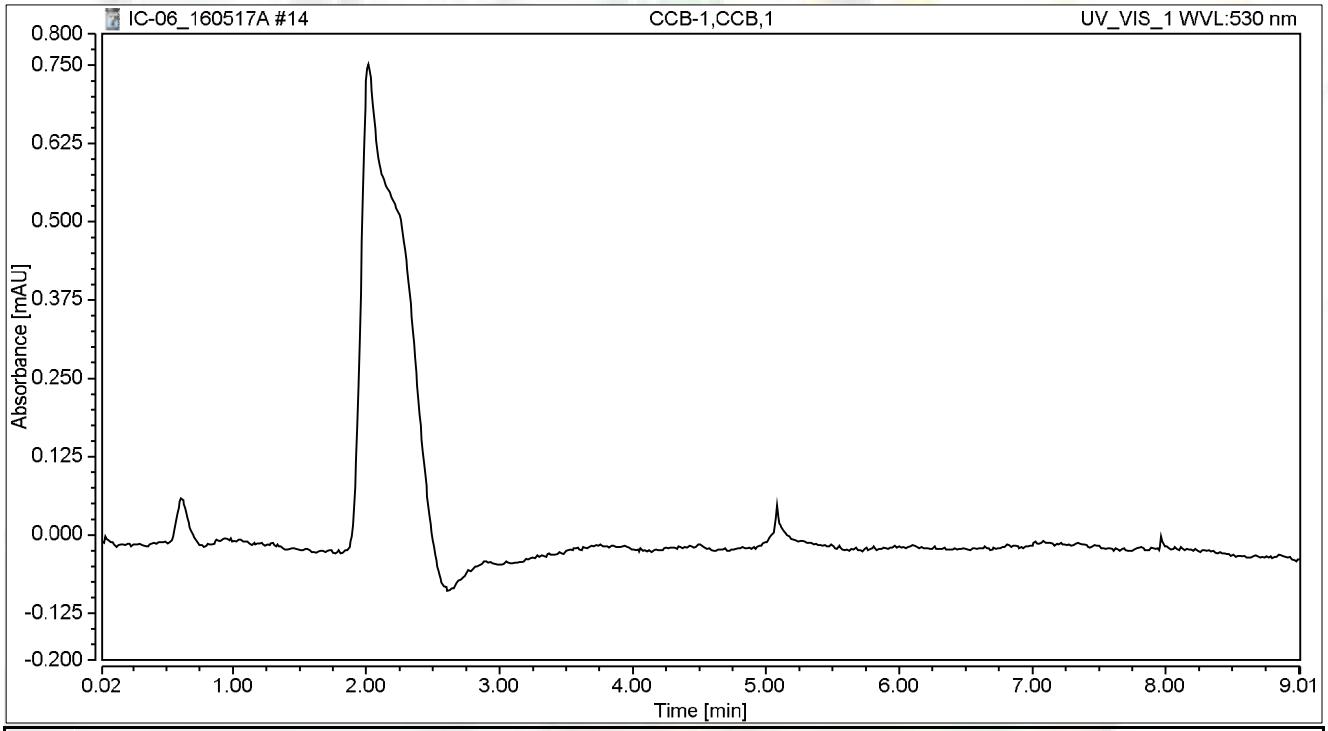
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.045	0.233	100.00	100.00	0.1749
Total:			**0.045**	**0.233**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

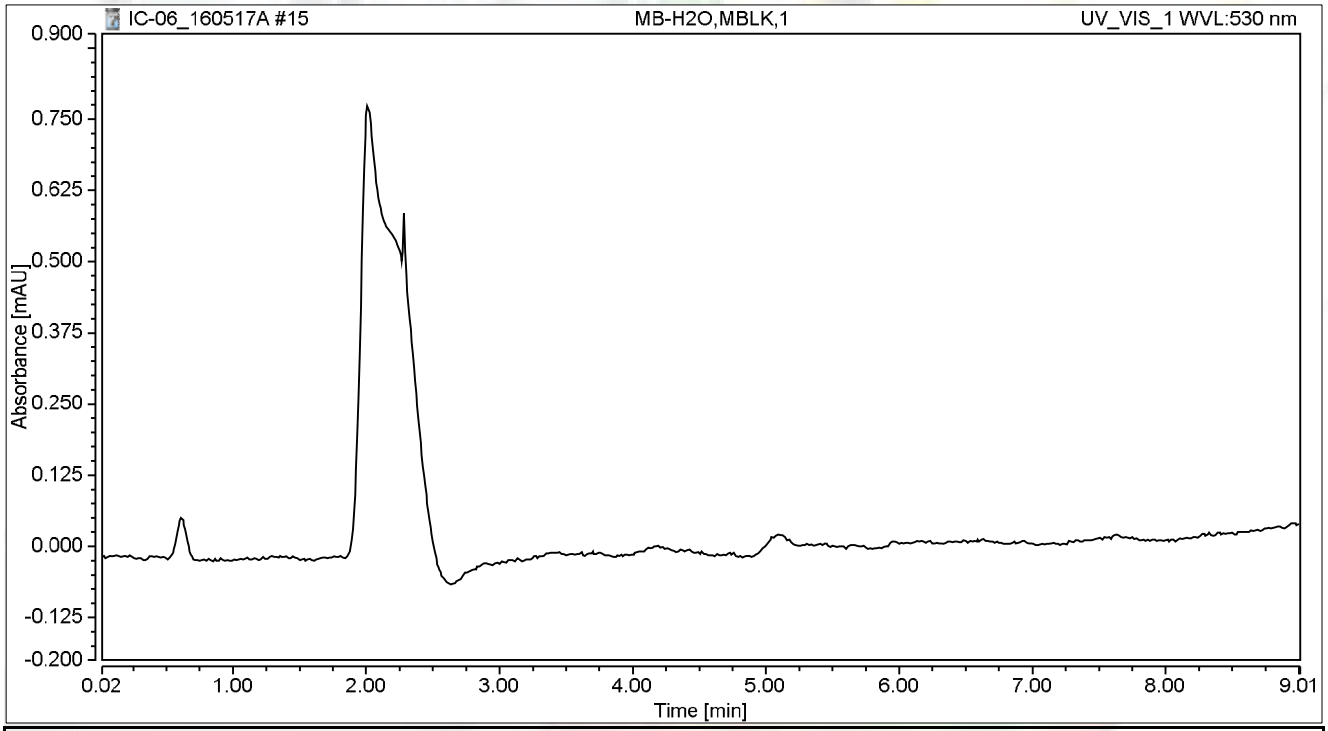
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

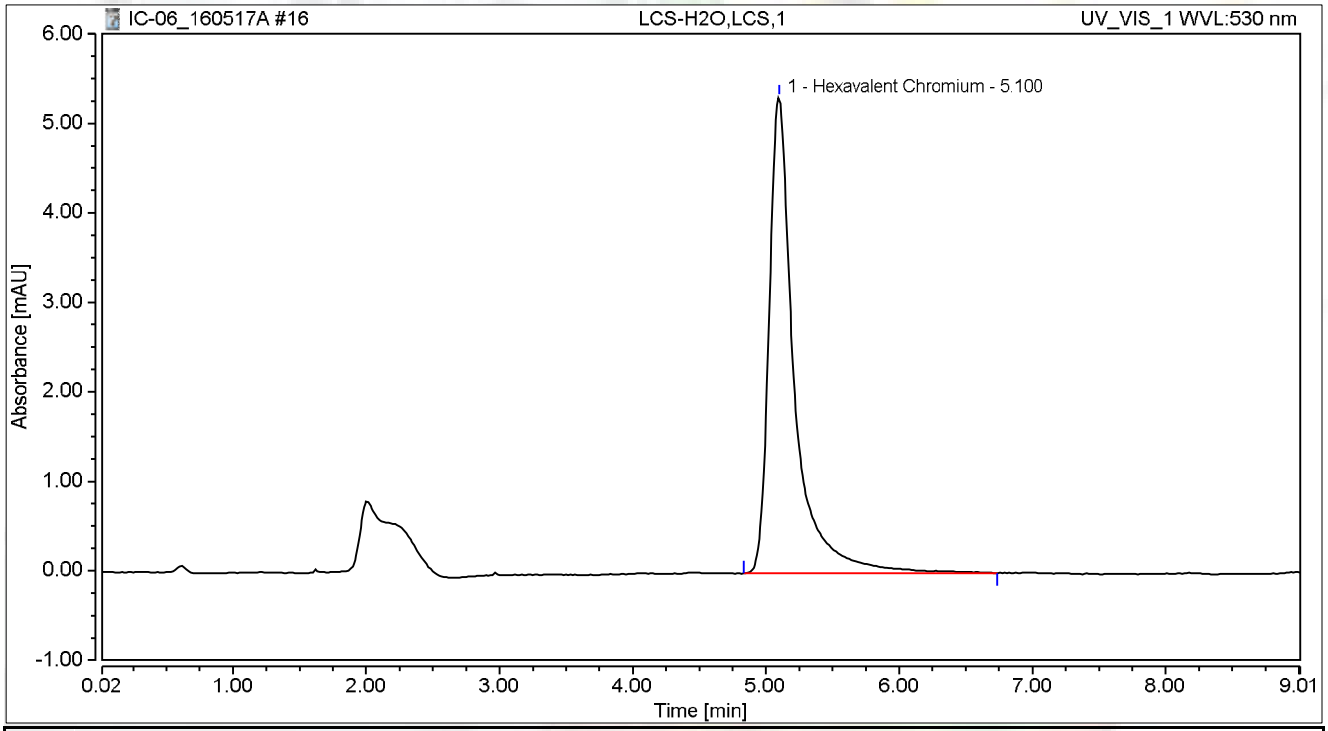
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 11:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

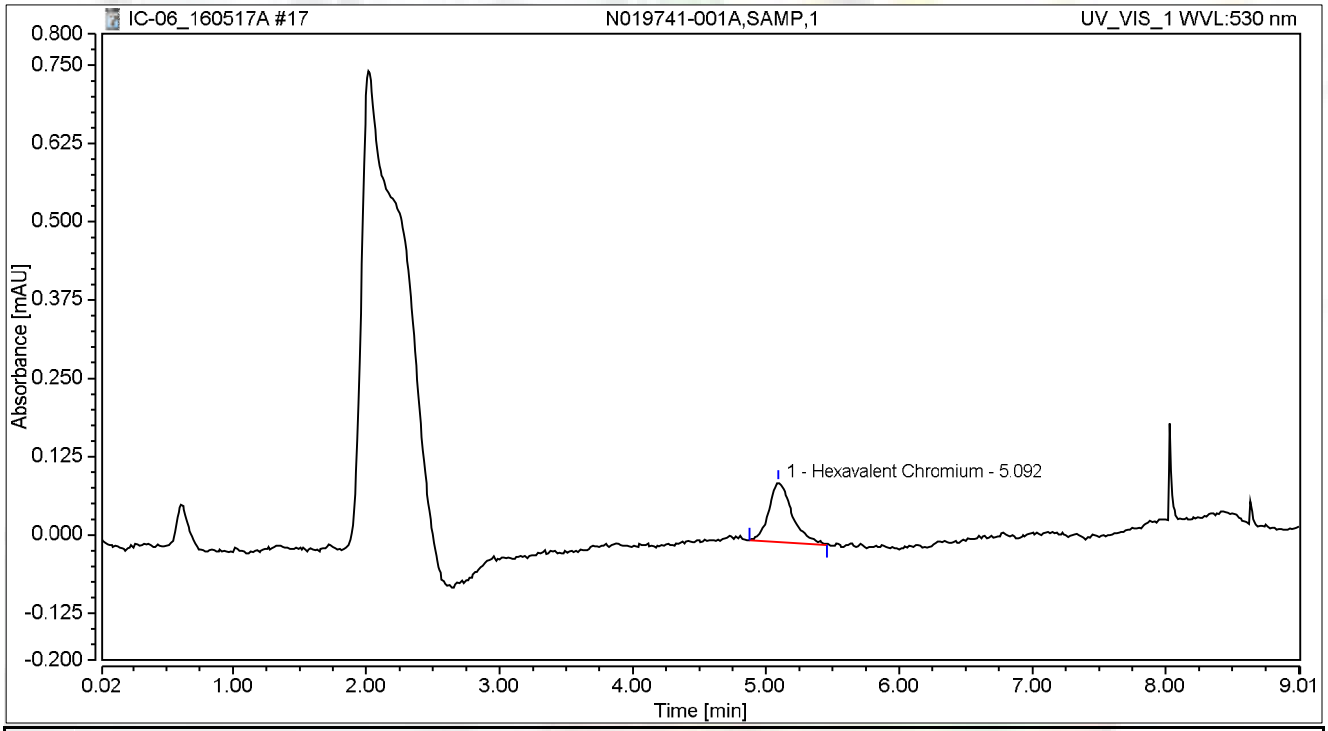
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.178	5.322	100.00	100.00	5.0269
Total:			**1.178**	**5.322**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019741-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

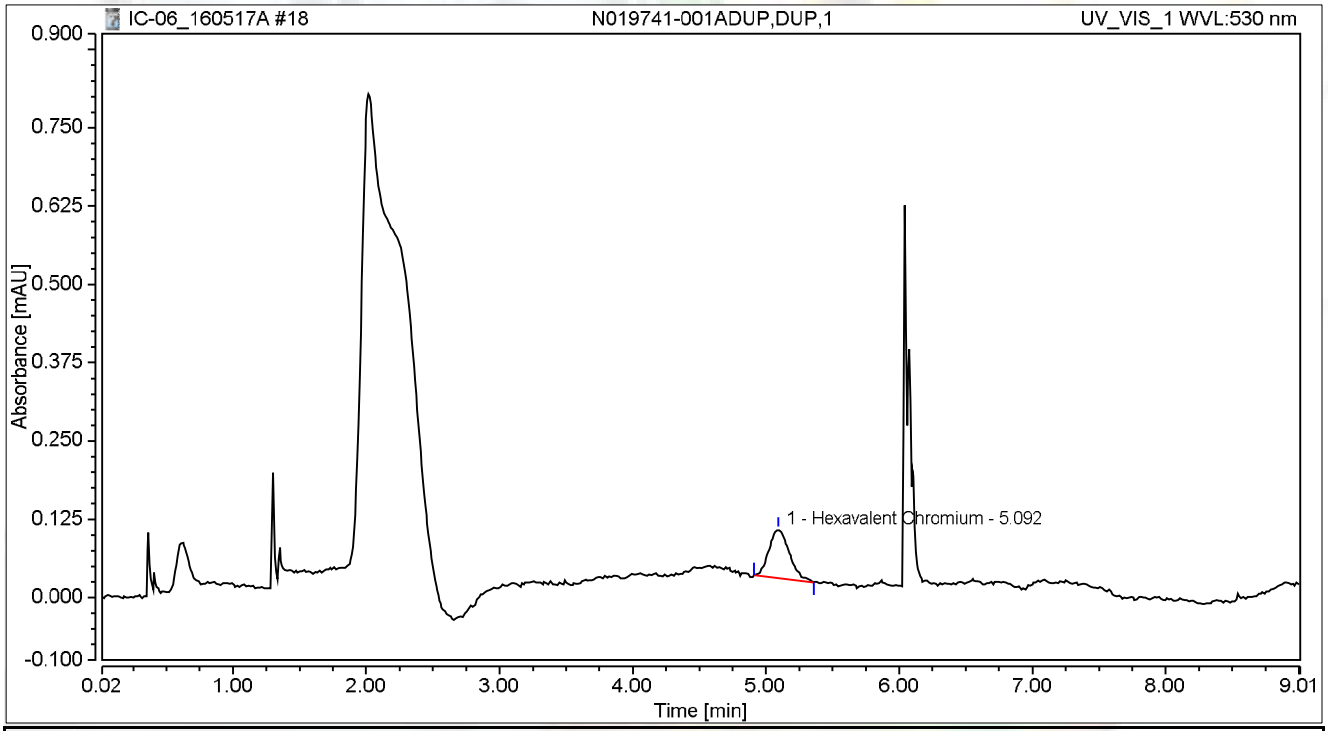
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.019	0.095	100.00	100.00	0.0652
Total:			**0.019**	**0.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019741-001ADUP,DUP,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

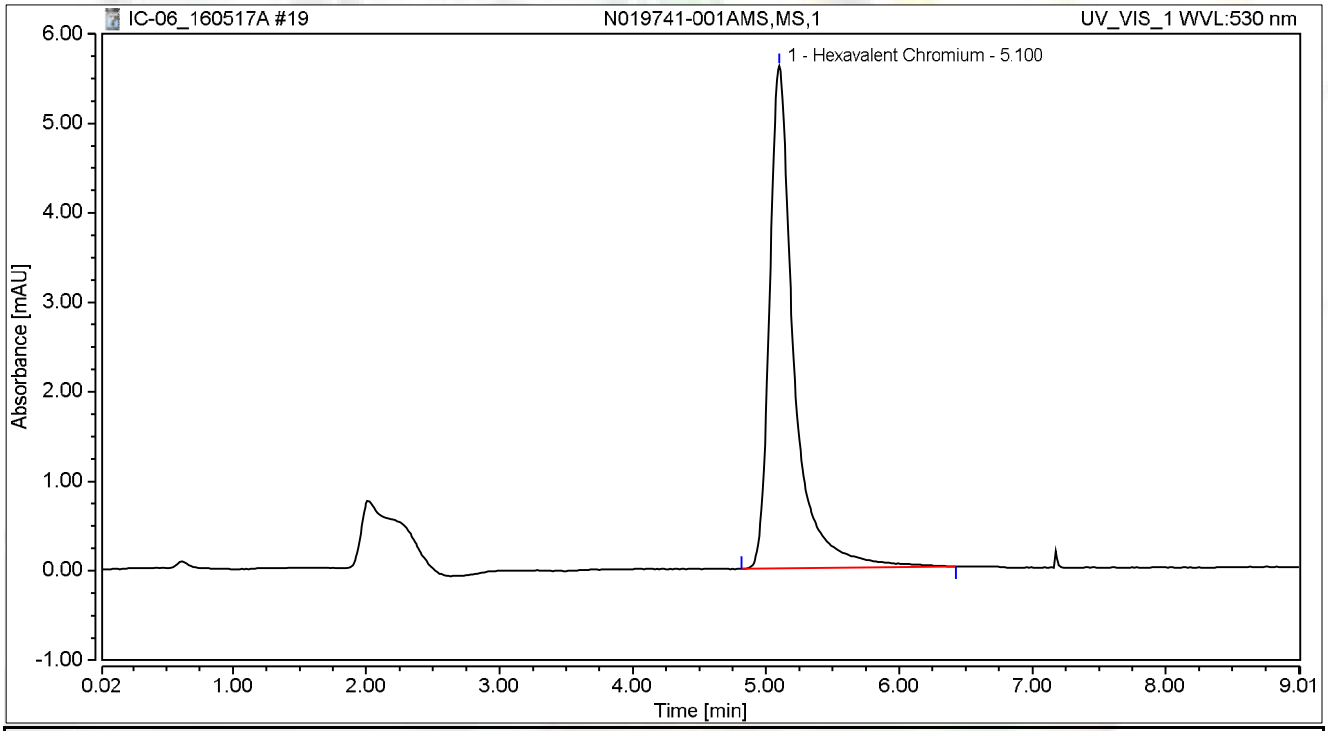
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.014	0.077	100.00	100.00	0.0408
Total:			**0.014**	**0.077**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019741-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

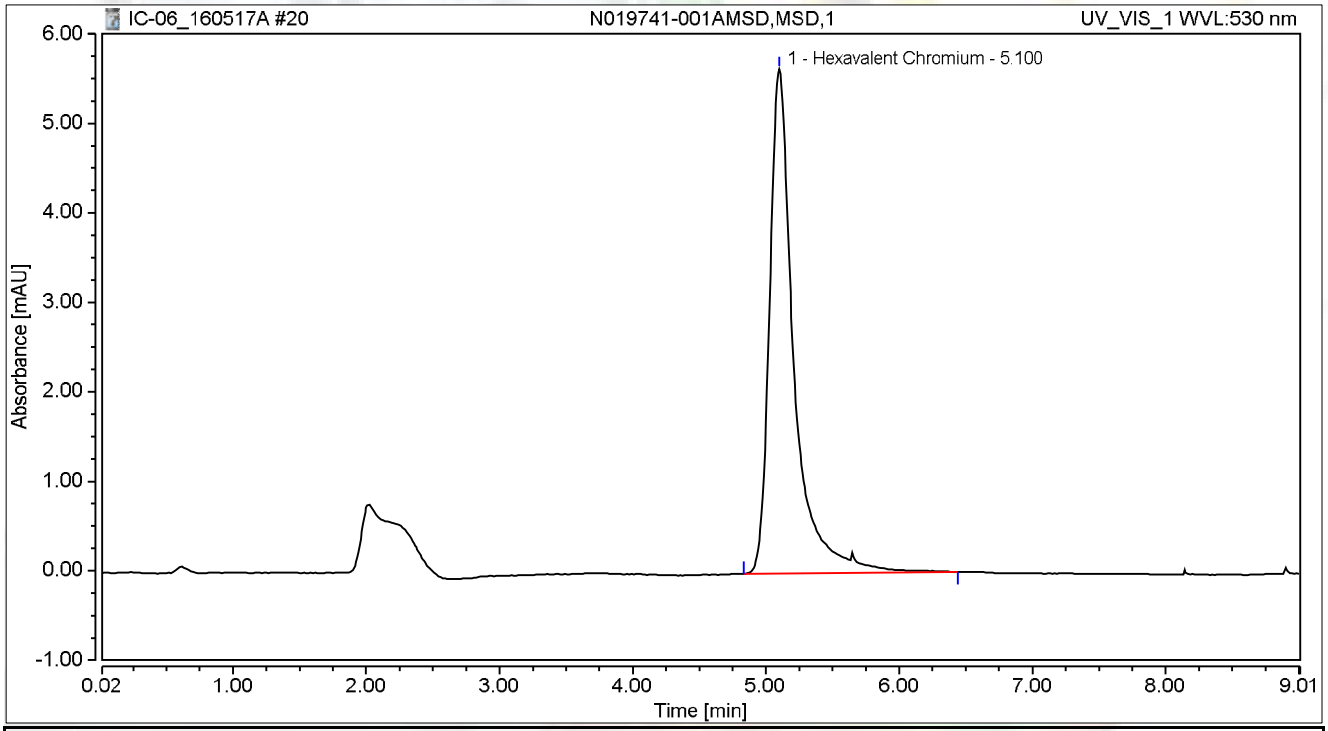
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.198	5.615	100.00	100.00	5.1125
Total:			**1.198**	**5.615**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019741-001AMSD,MSD,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

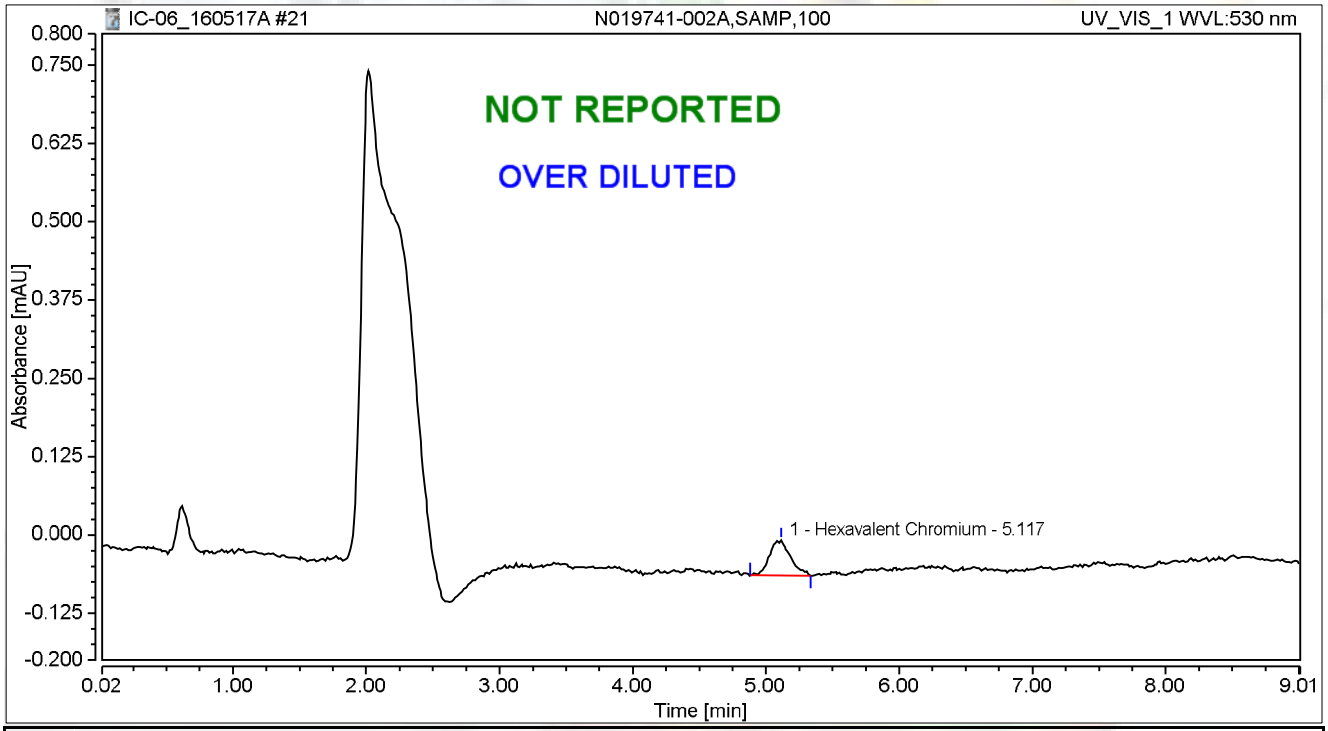
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	1.202	5.636	100.00	100.00	5.1266
Total:			**1.202**	**5.636**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019741-002A,SAMP,100**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

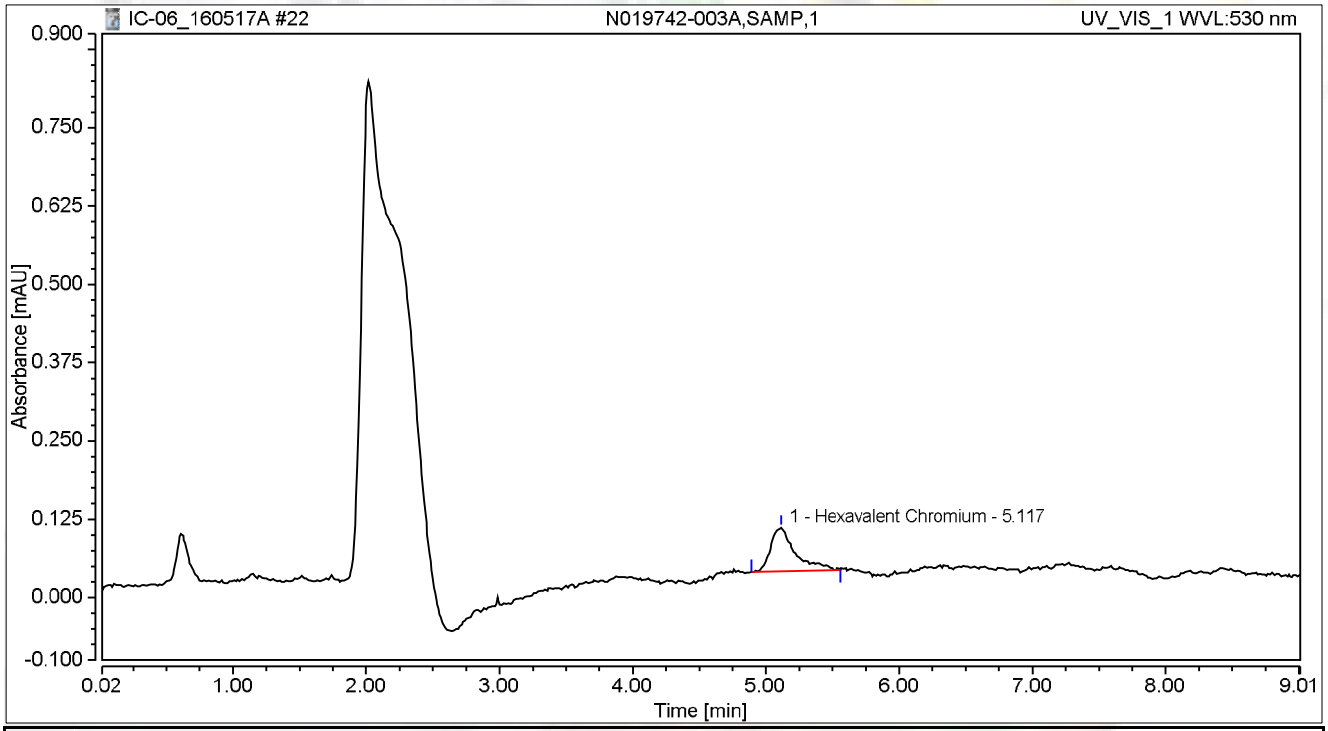
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.010	0.057	100.00	100.00	0.0264
Total:			**0.010**	**0.057**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019742-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 12:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

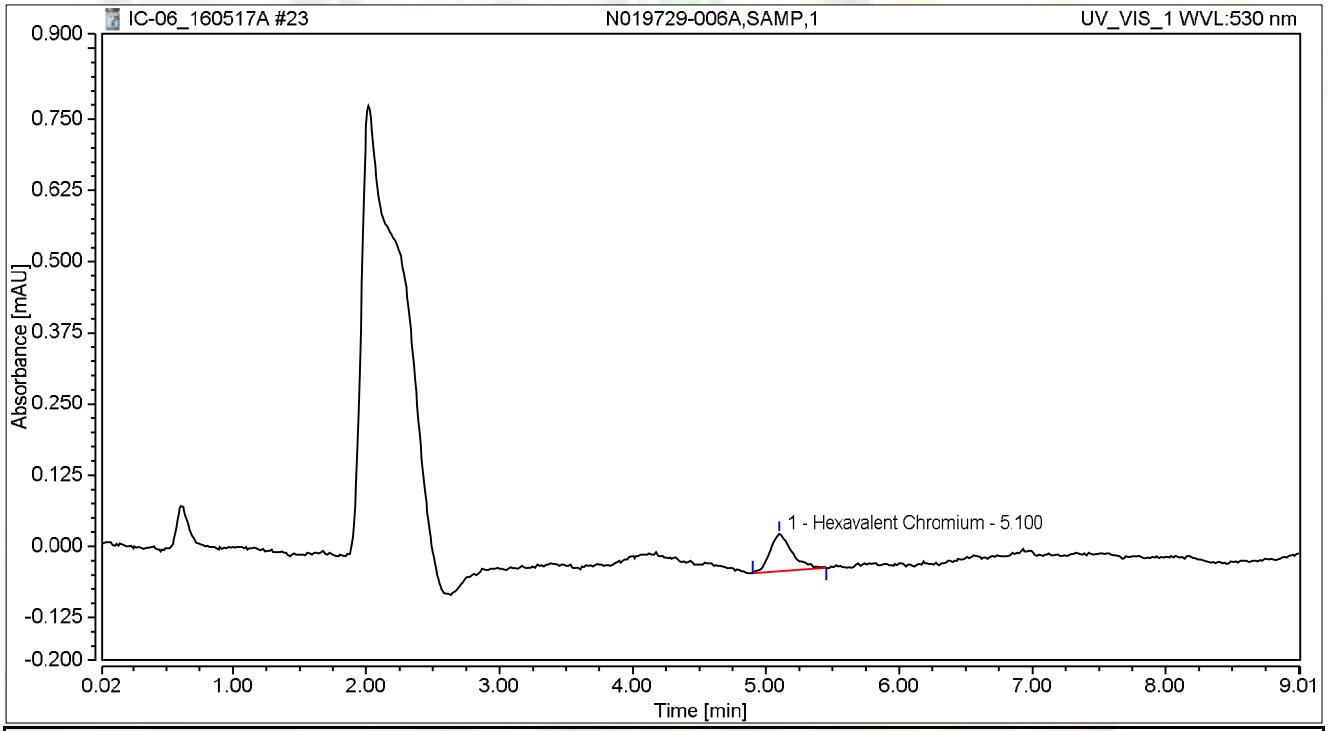
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.117	0.015	0.070	100.00	100.00	0.0477
Total:			**0.015**	**0.070**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019729-006A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

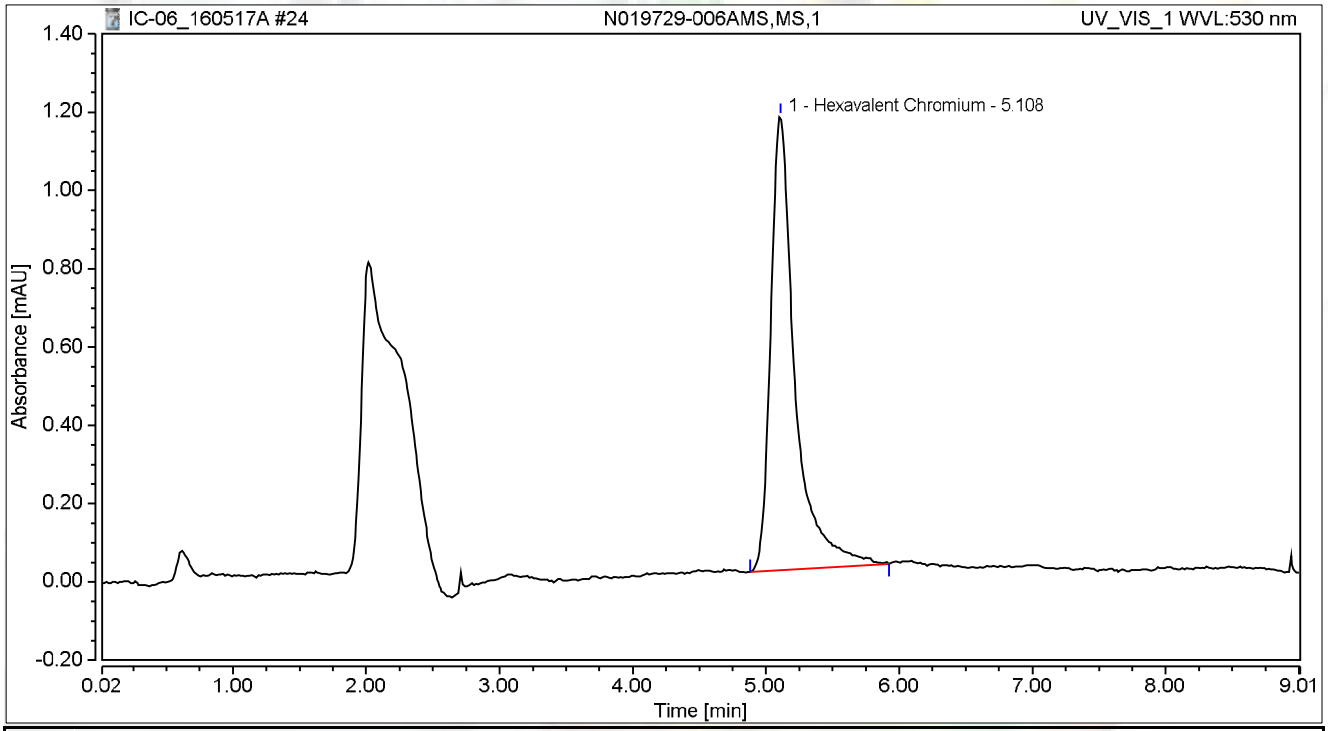
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.012	0.065	100.00	100.00	0.0355
Total:			**0.012**	**0.065**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019729-006AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 13:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

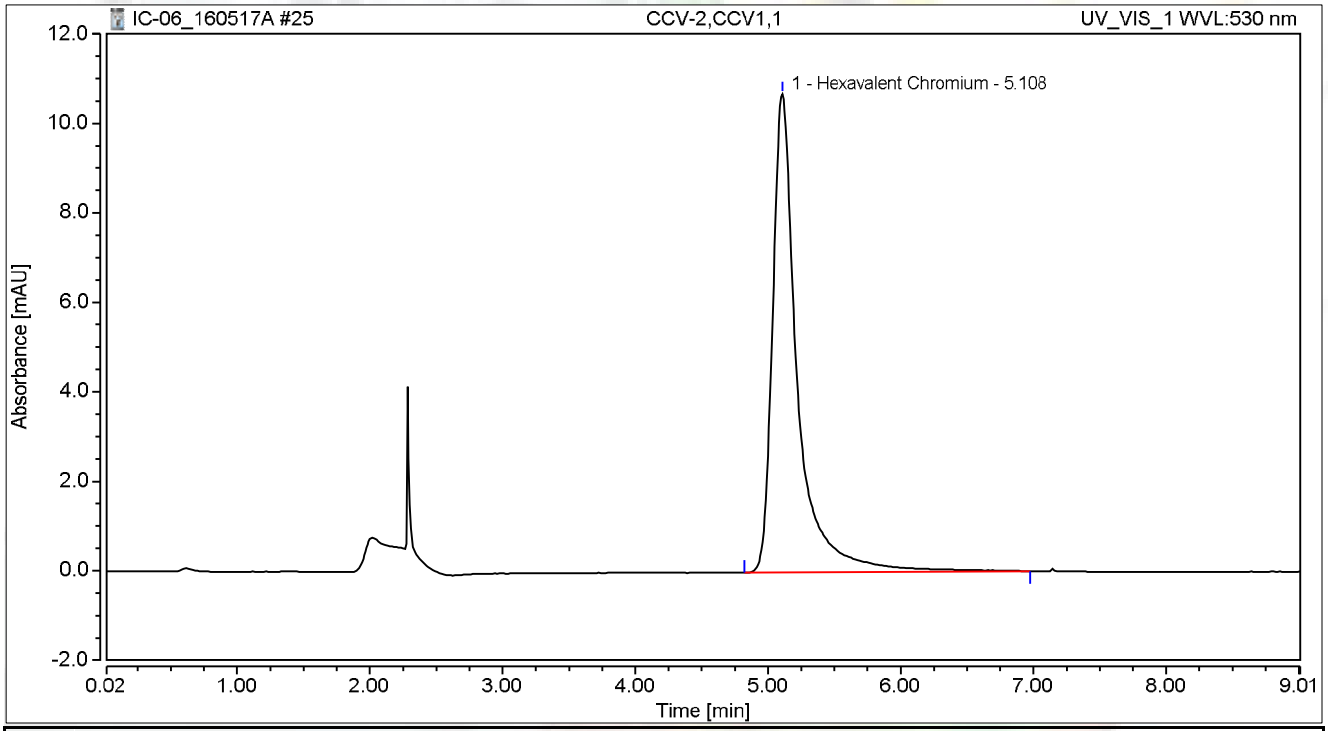
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.245	1.161	100.00	100.00	1.0331
Total:			**0.245**	**1.161**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

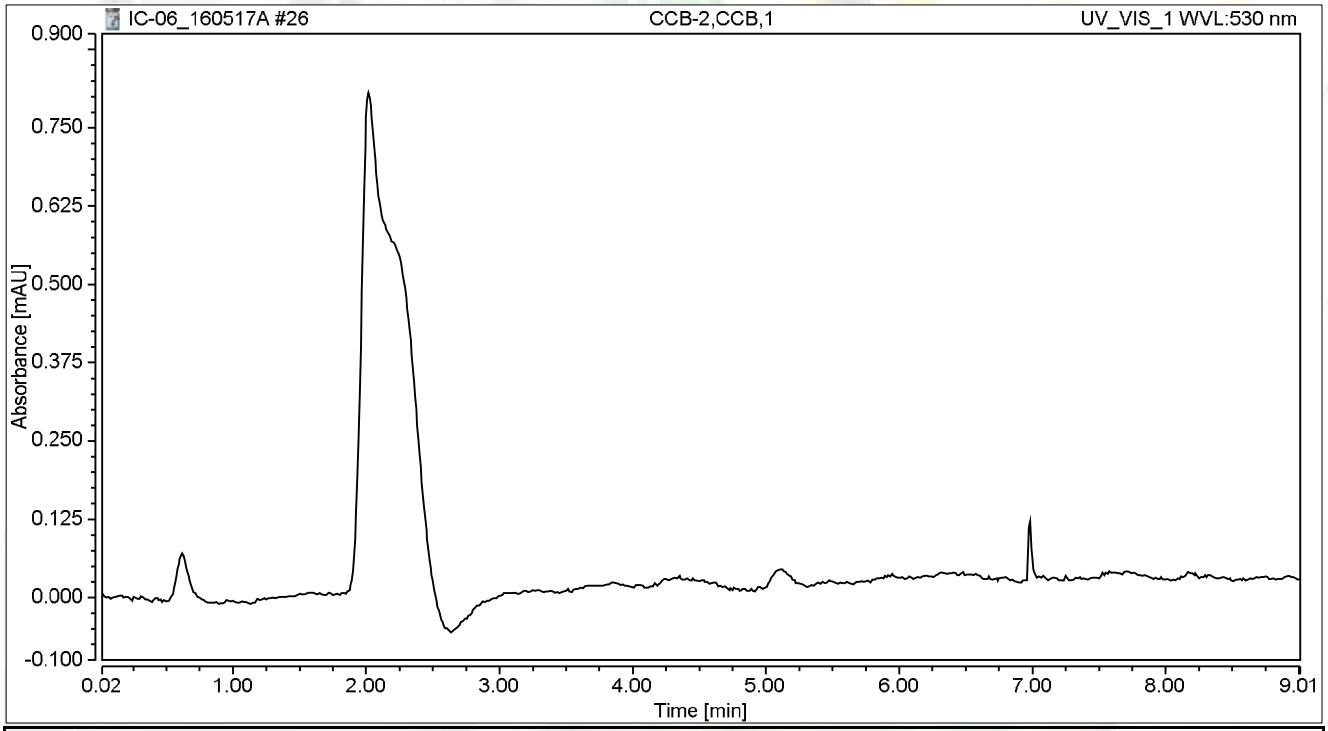
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.323	10.689	100.00	100.00	9.9277
Total:			**2.323**	**10.689**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

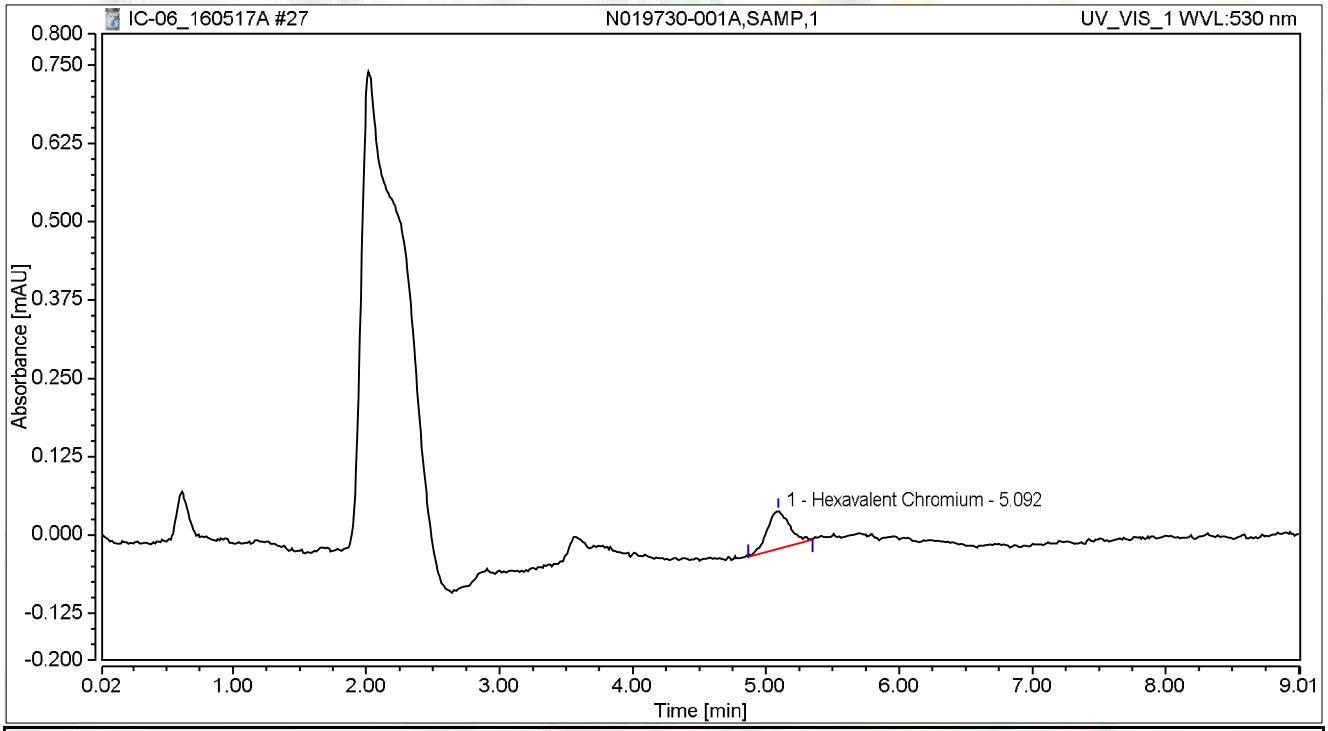
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019730-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

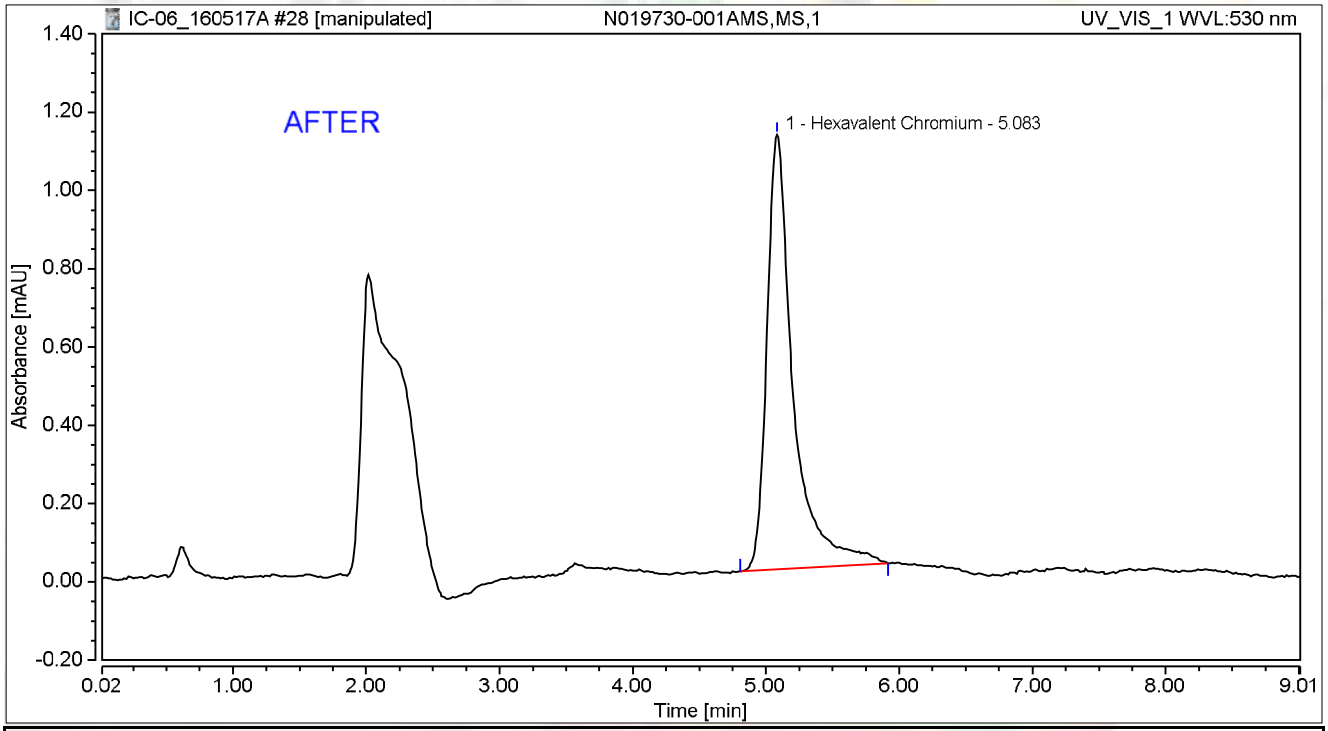
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.012	0.061	100.00	100.00	0.0339
Total:			**0.012**	**0.061**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019730-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 13:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	0.254	1.111	100.00	100.00	1.0700
Total:			**0.254**	**1.111**	**100.00**	**100.00**	

5/18/2016

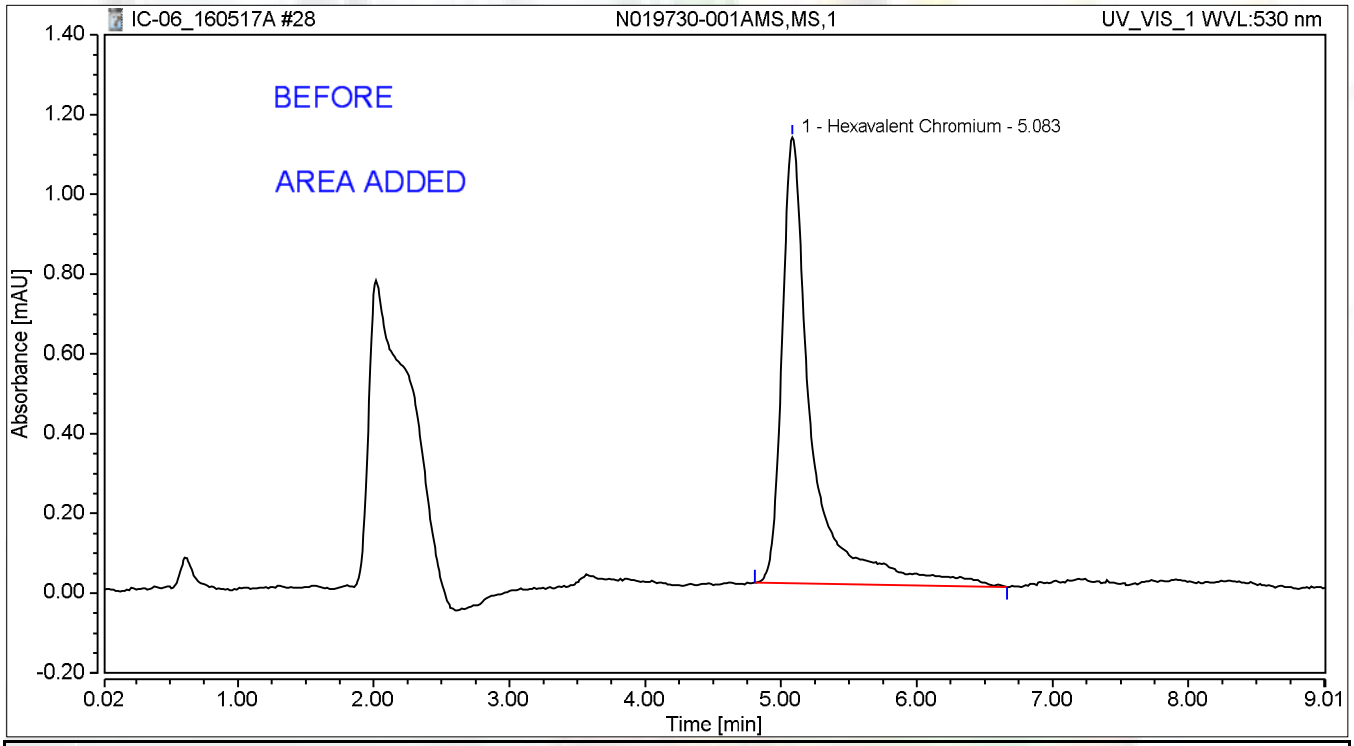
5/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019730-001AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 13:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	0.283	1.117	100.00	100.00	1.1927
Total:			**0.283**	**1.117**	**100.00**	**100.00**	

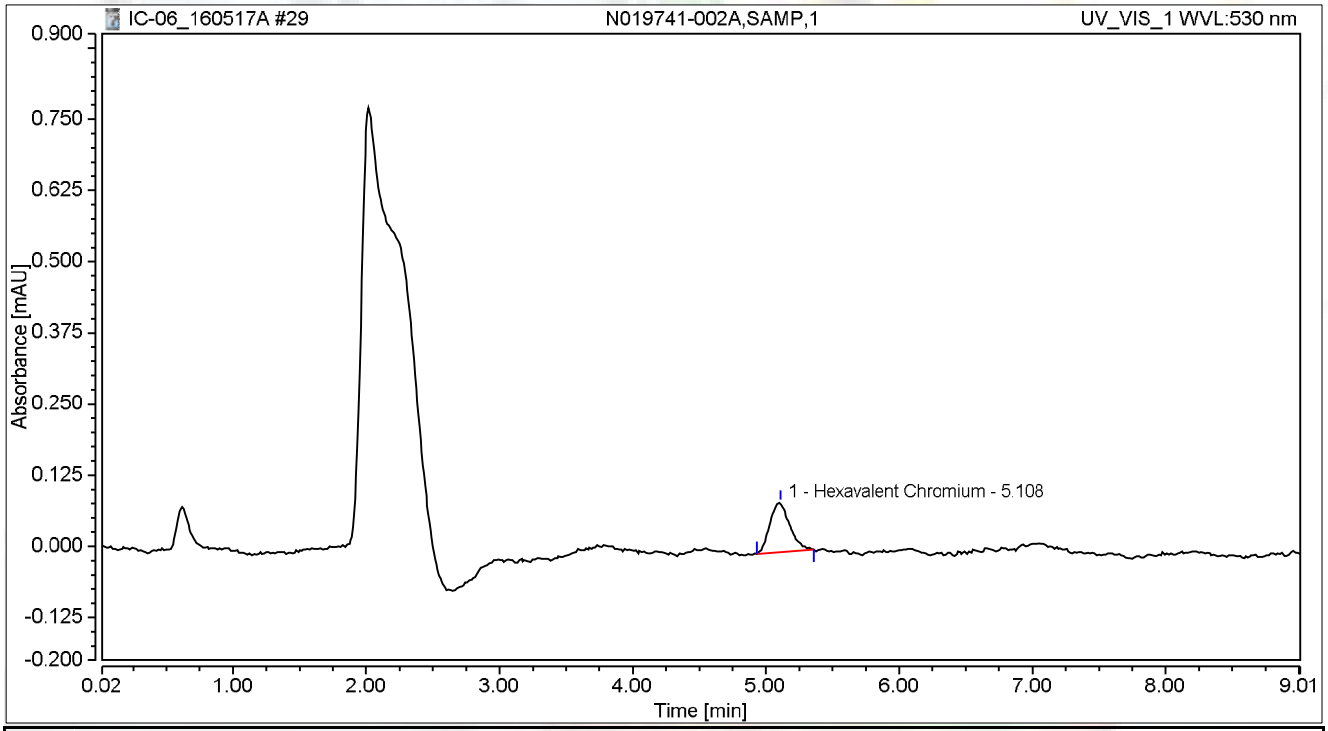
JAS 5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**N019741-002A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

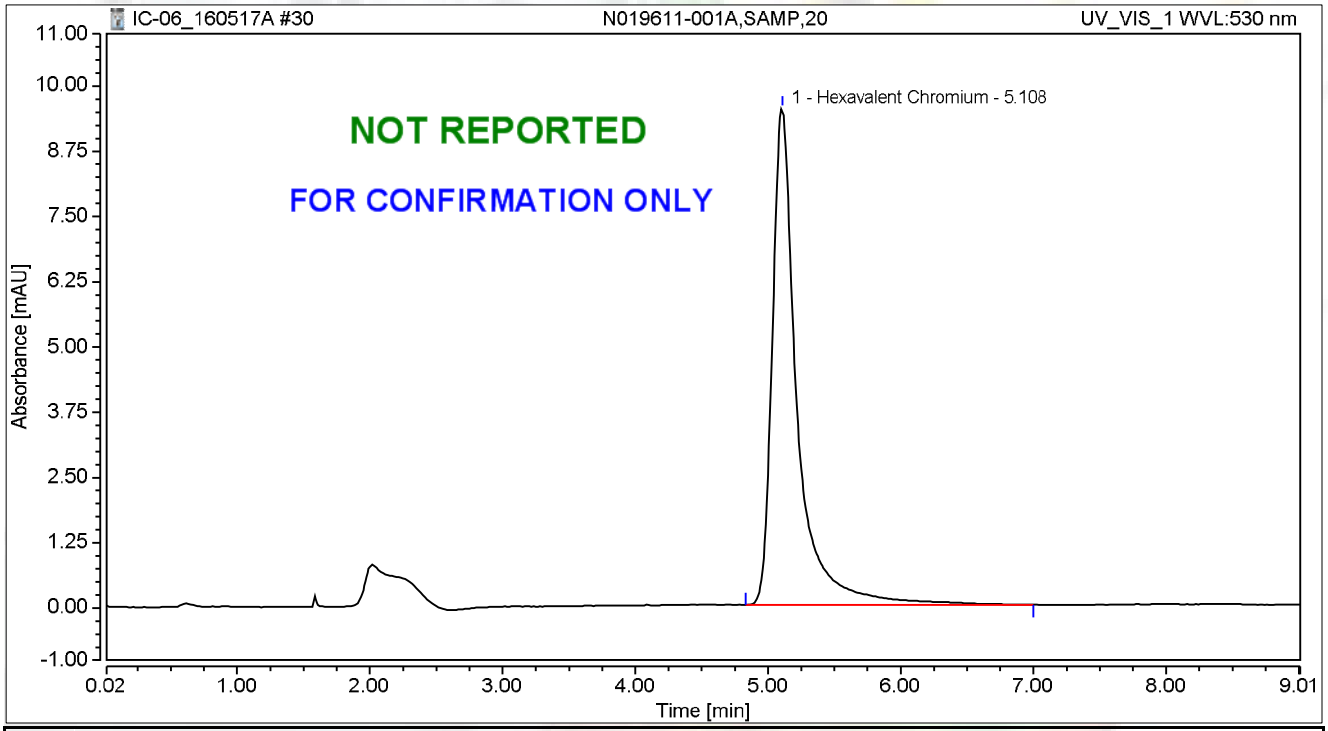
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.015	0.087	100.00	100.00	0.0465
Total:			**0.015**	**0.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-001A,SAMP,20**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 14:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

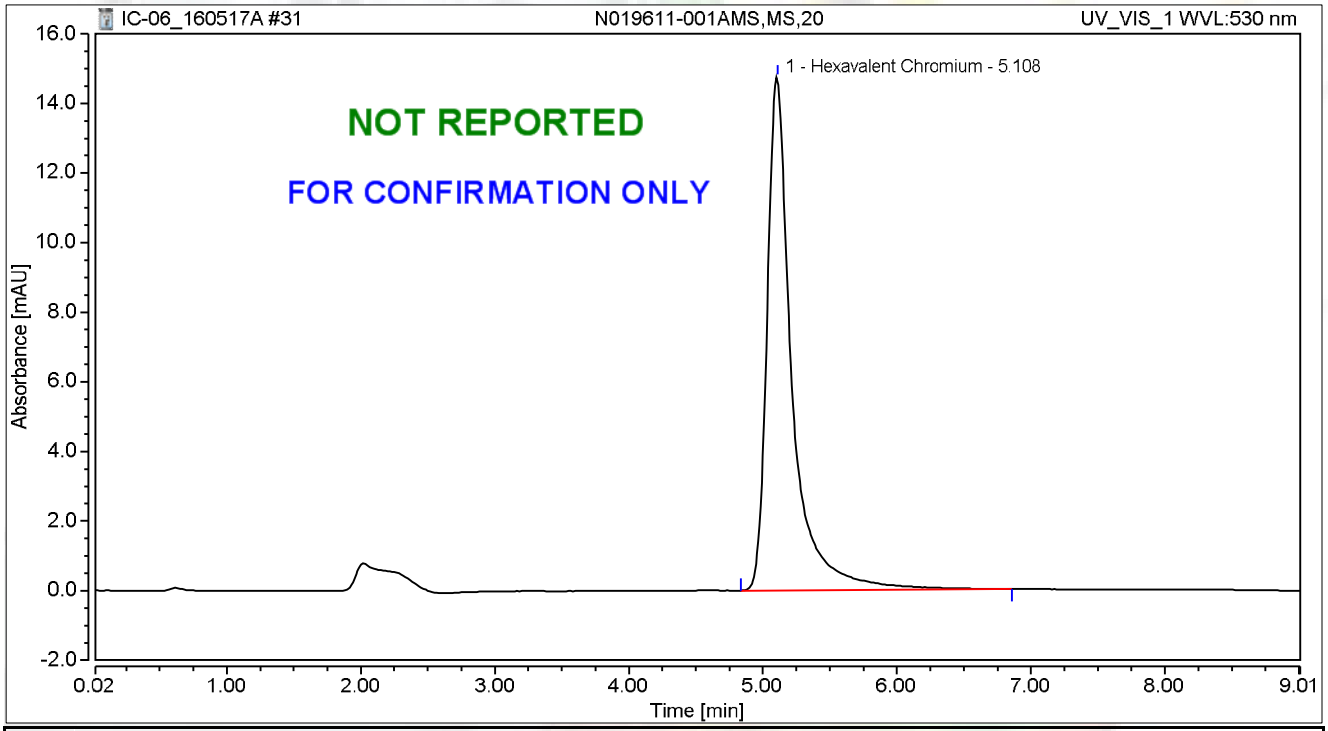
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.072	9.502	100.00	100.00	8.8511
Total:			**2.072**	**9.502**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019611-001AMS,MS,20**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 14:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

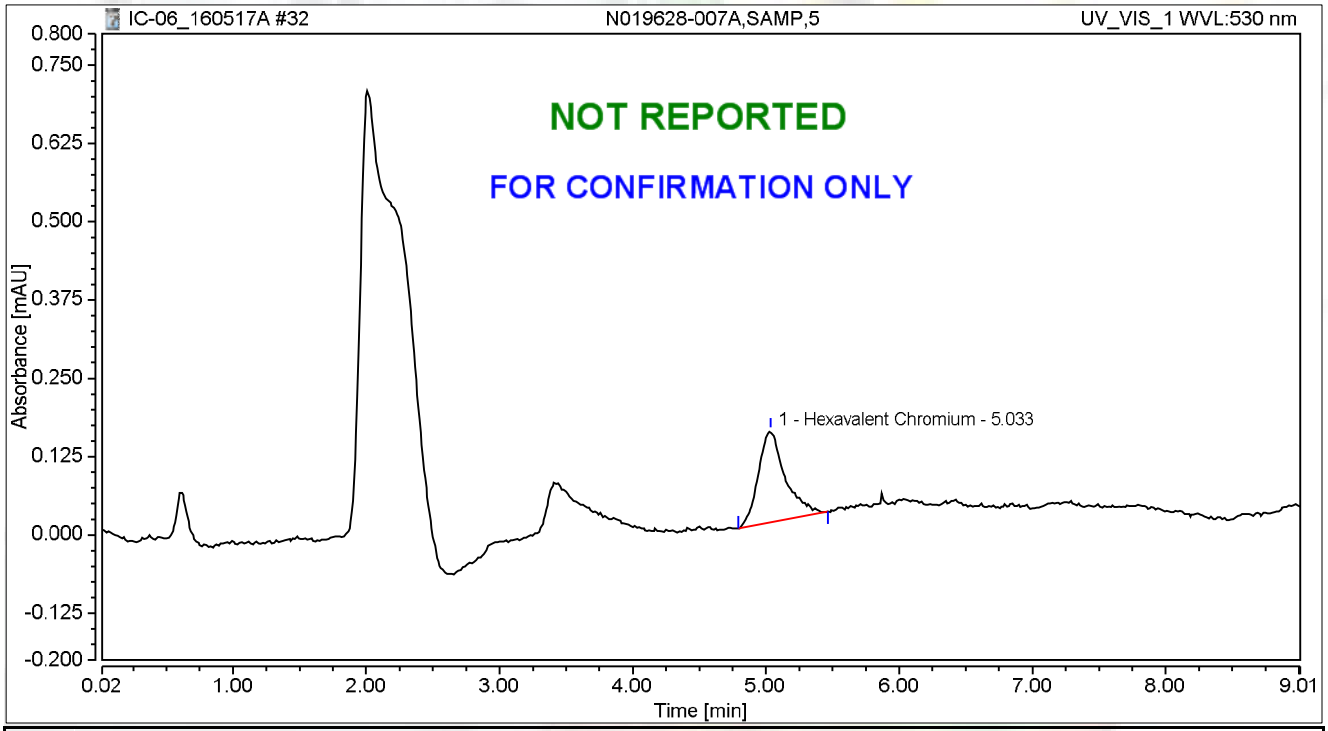
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	3.182	14.738	100.00	100.00	13.6037
Total:			**3.182**	**14.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 14:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

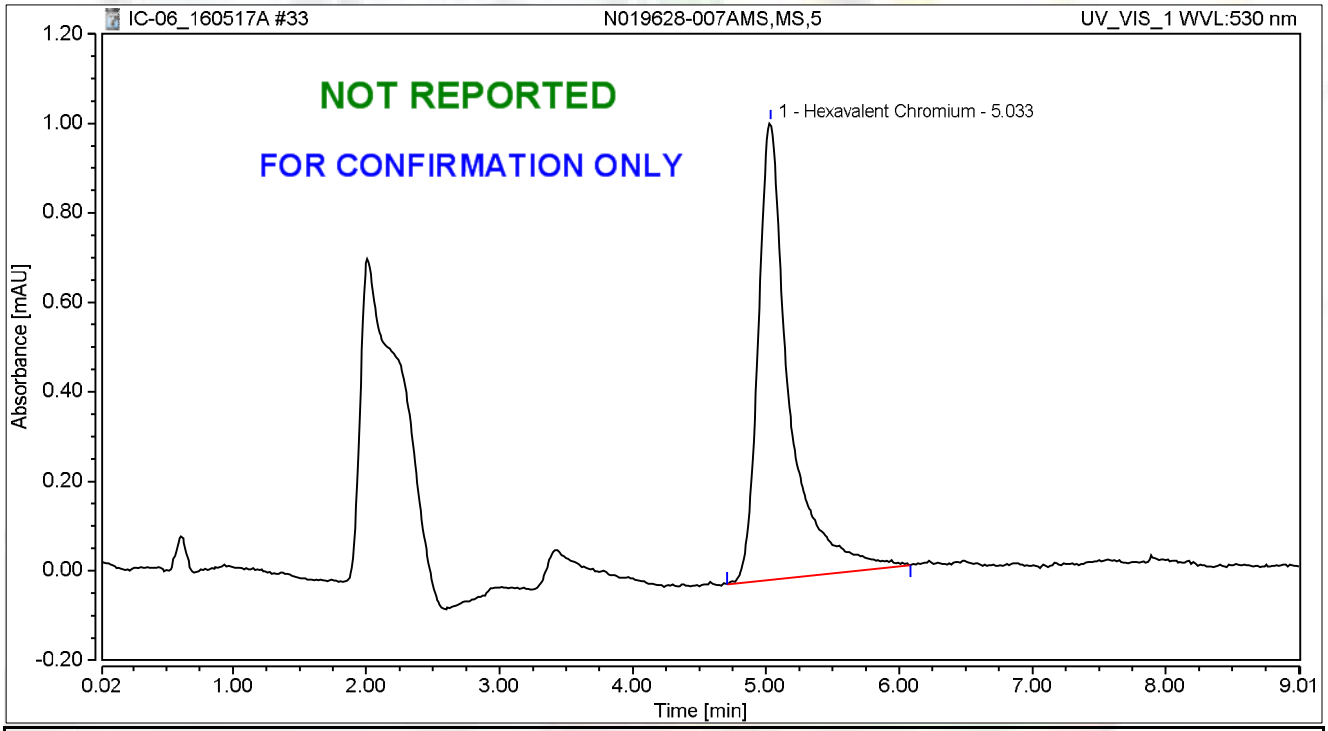
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.033	0.034	0.147	100.00	100.00	0.1281
Total:			**0.034**	**0.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019628-007AMS,MS,5**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 14:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

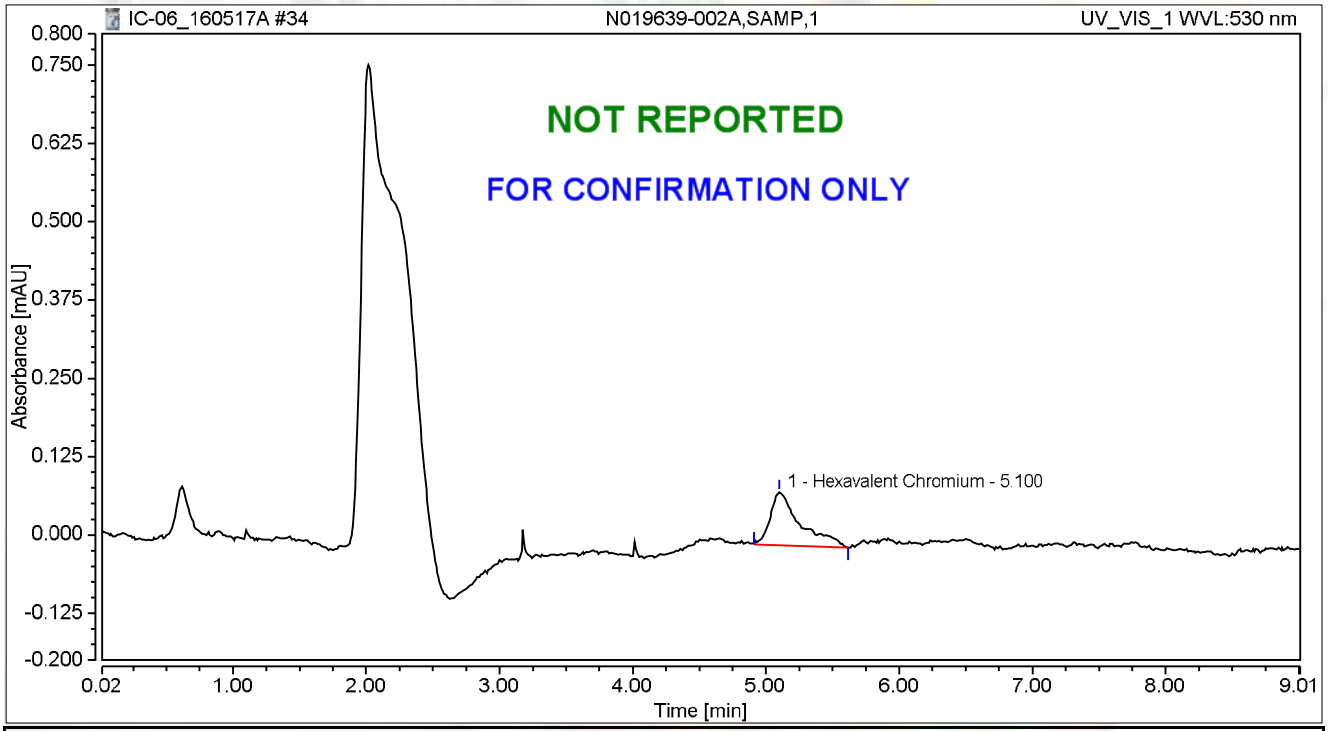
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.033	0.276	1.022	100.00	100.00	1.1617
Total:			**0.276**	**1.022**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019639-002A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

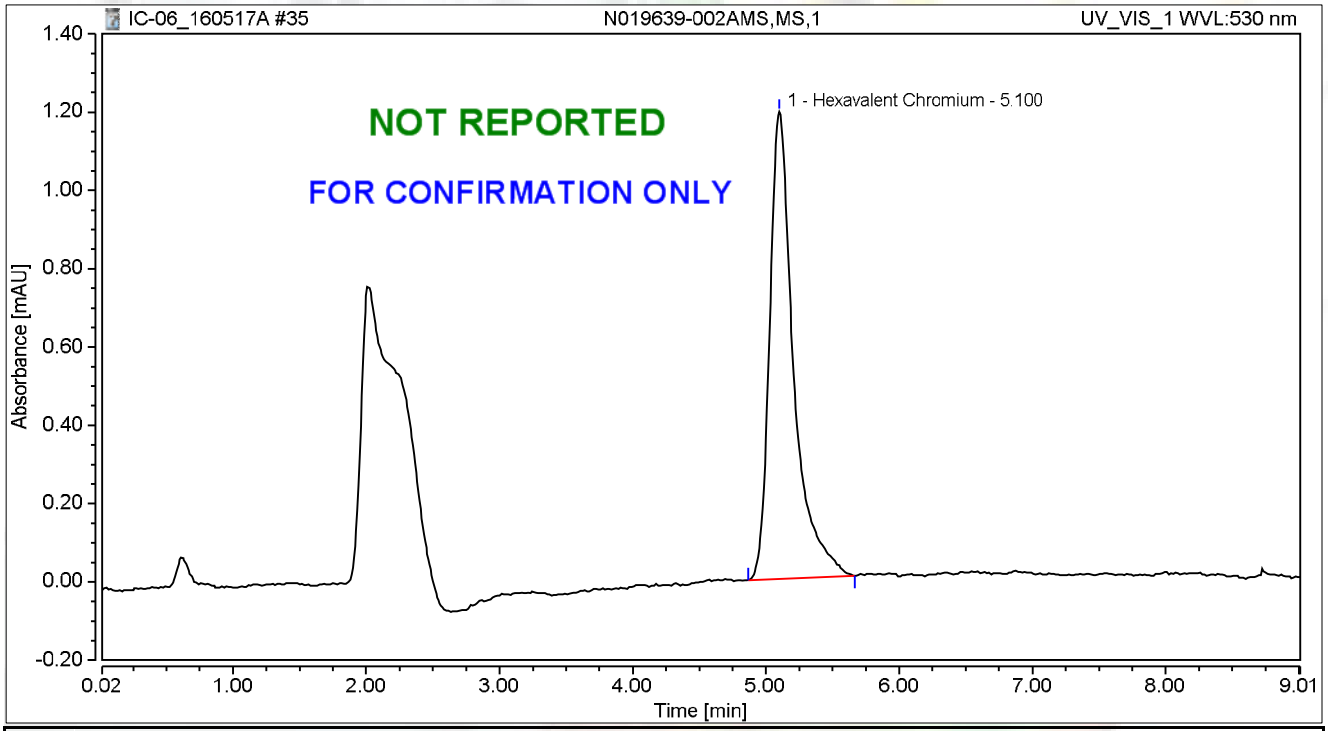
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.022	0.084	100.00	100.00	0.0764
Total:			**0.022**	**0.084**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019639-002AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 15:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

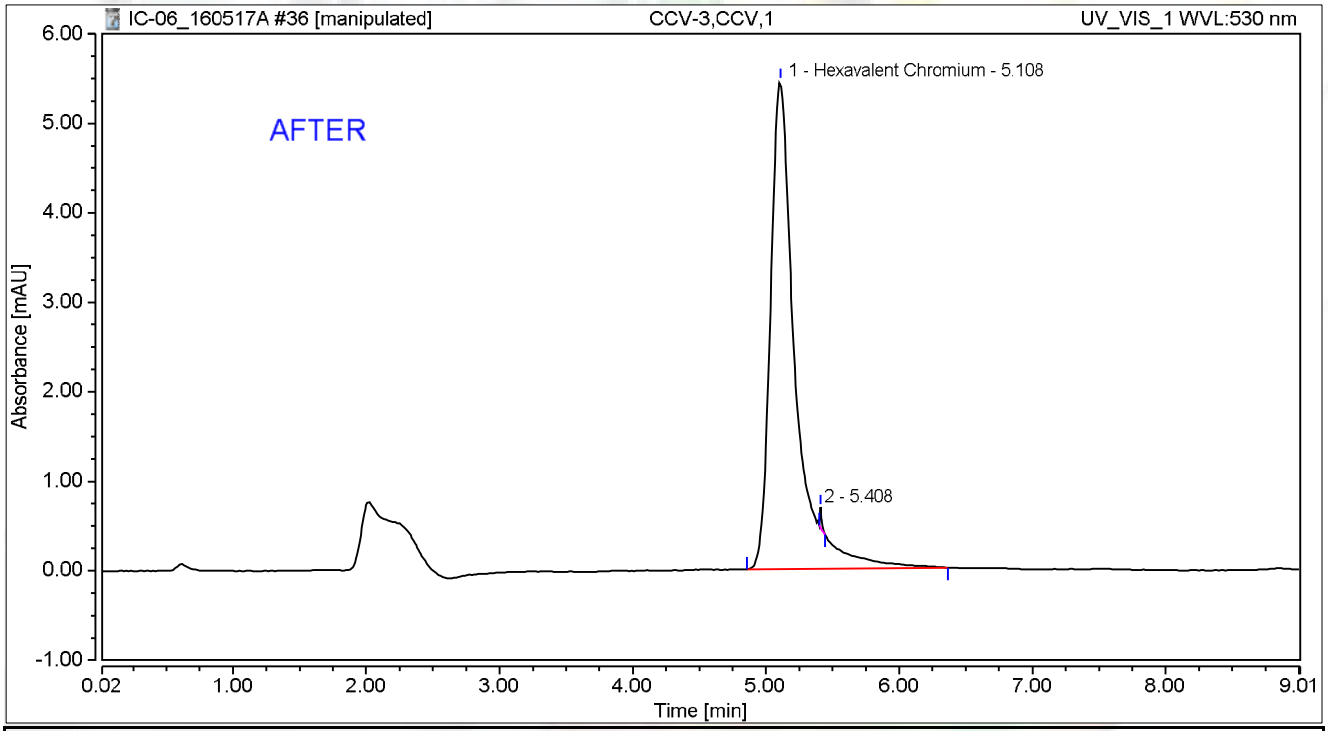
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.100	0.249	1.193	100.00	100.00	1.0484
Total:			**0.249**	**1.193**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 15:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	1.182	5.451	99.70	96.06	5.0426
2		5.408	0.004	0.223	0.30	3.94	n.a.
Total:			**1.186**	**5.675**	**100.00**	**100.00**	

5/18/2016

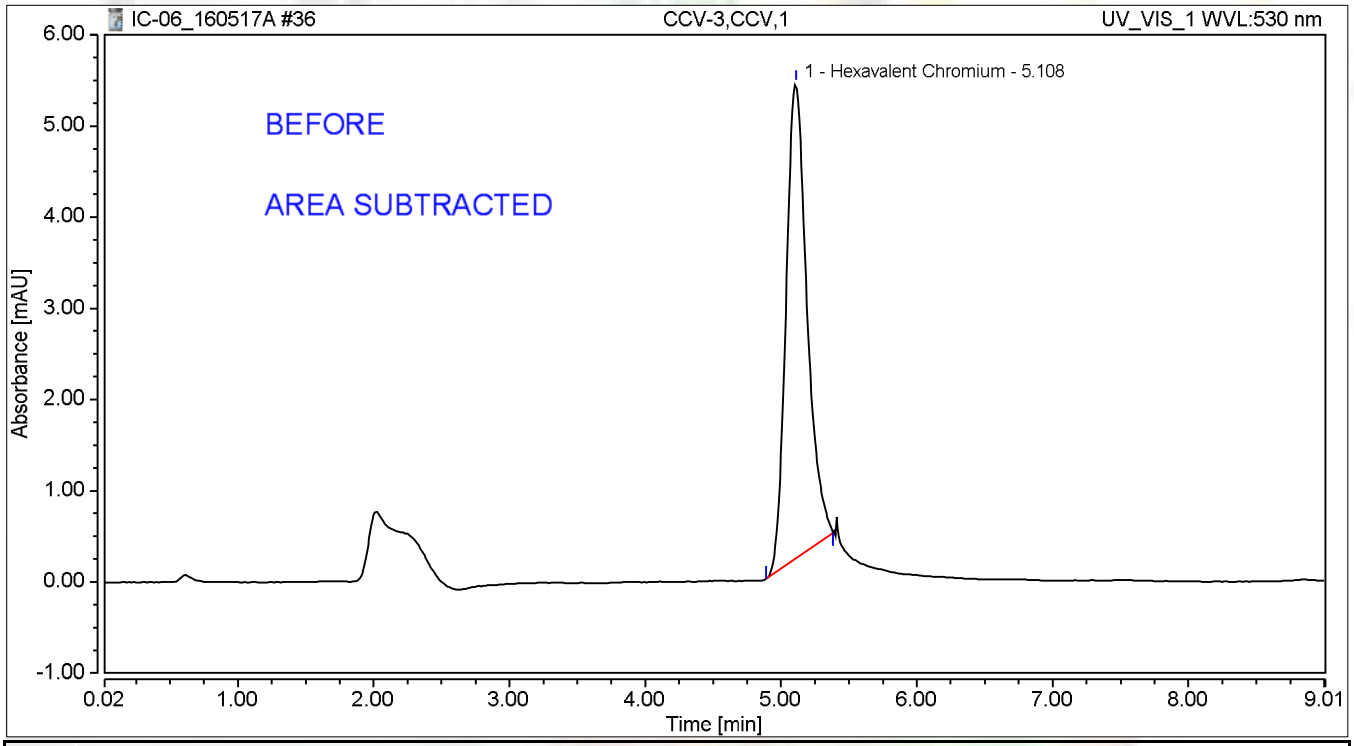
5/25/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 15:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.939	5.214	100.00	100.00	4.0002
Total:			**0.939**	**5.214**	**100.00**	**100.00**	

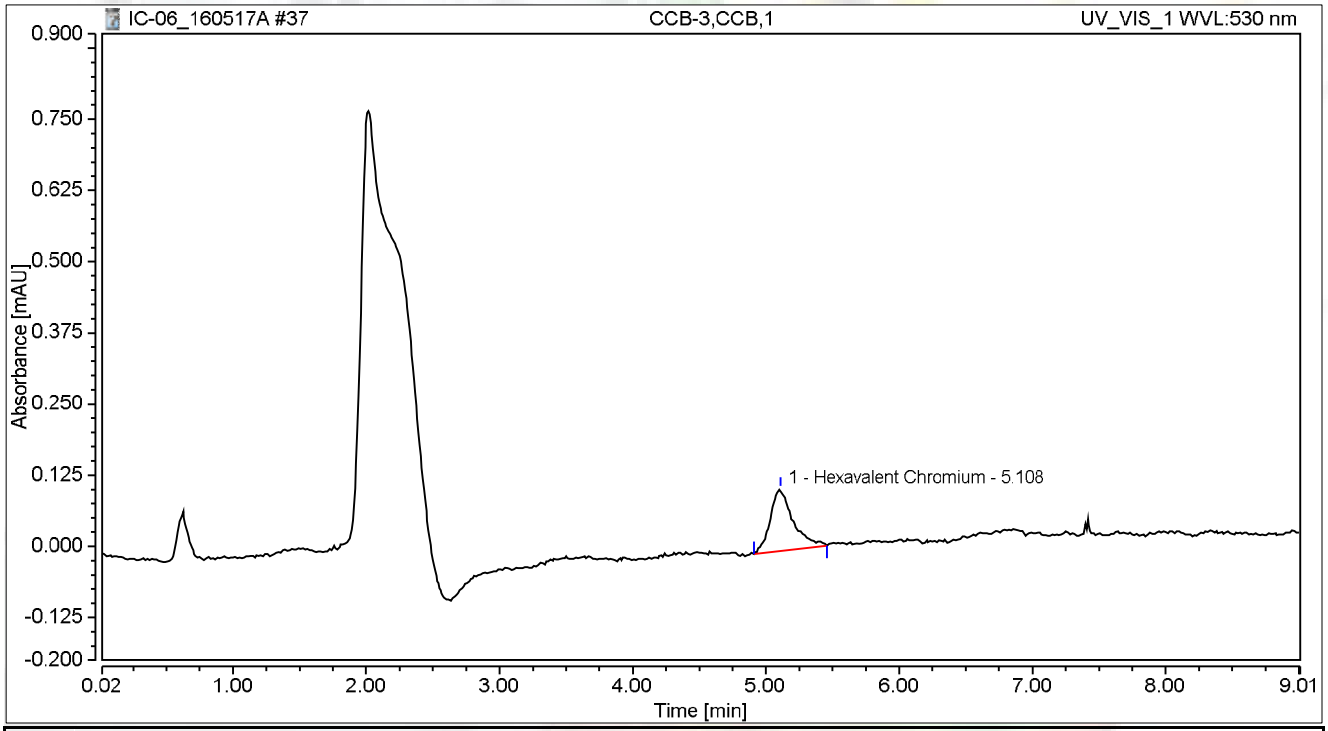
jas 5/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

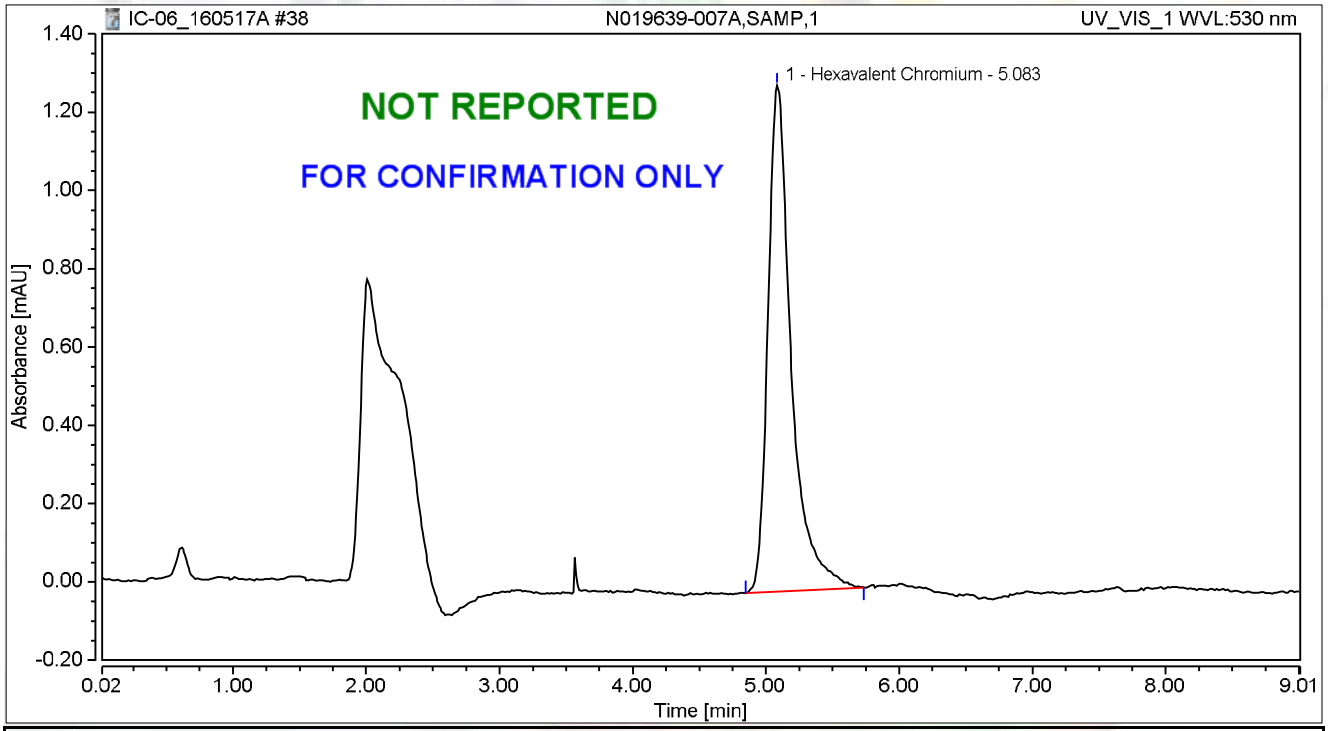
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.022	0.108	100.00	100.00	0.0756
Total:			**0.022**	**0.108**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019639-007A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

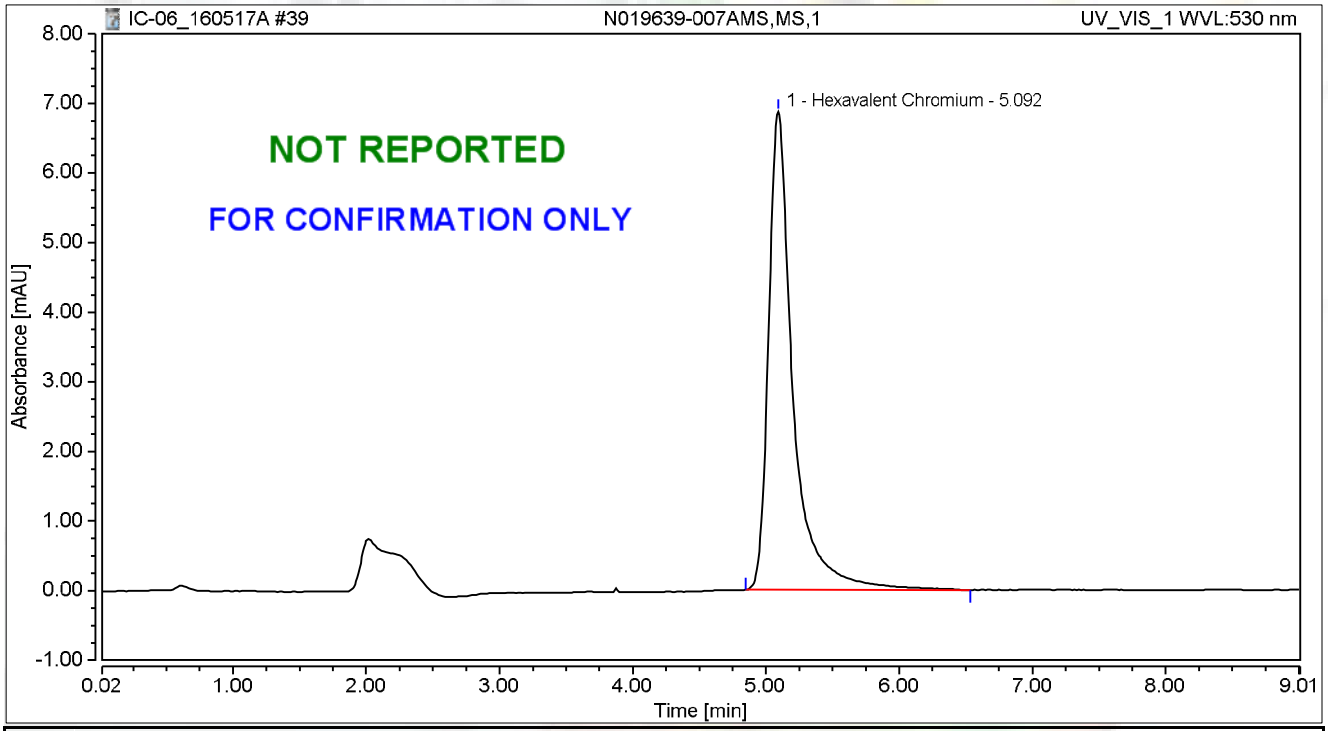
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	0.262	1.293	100.00	100.00	1.1052
Total:			**0.262**	**1.293**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019639-007AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

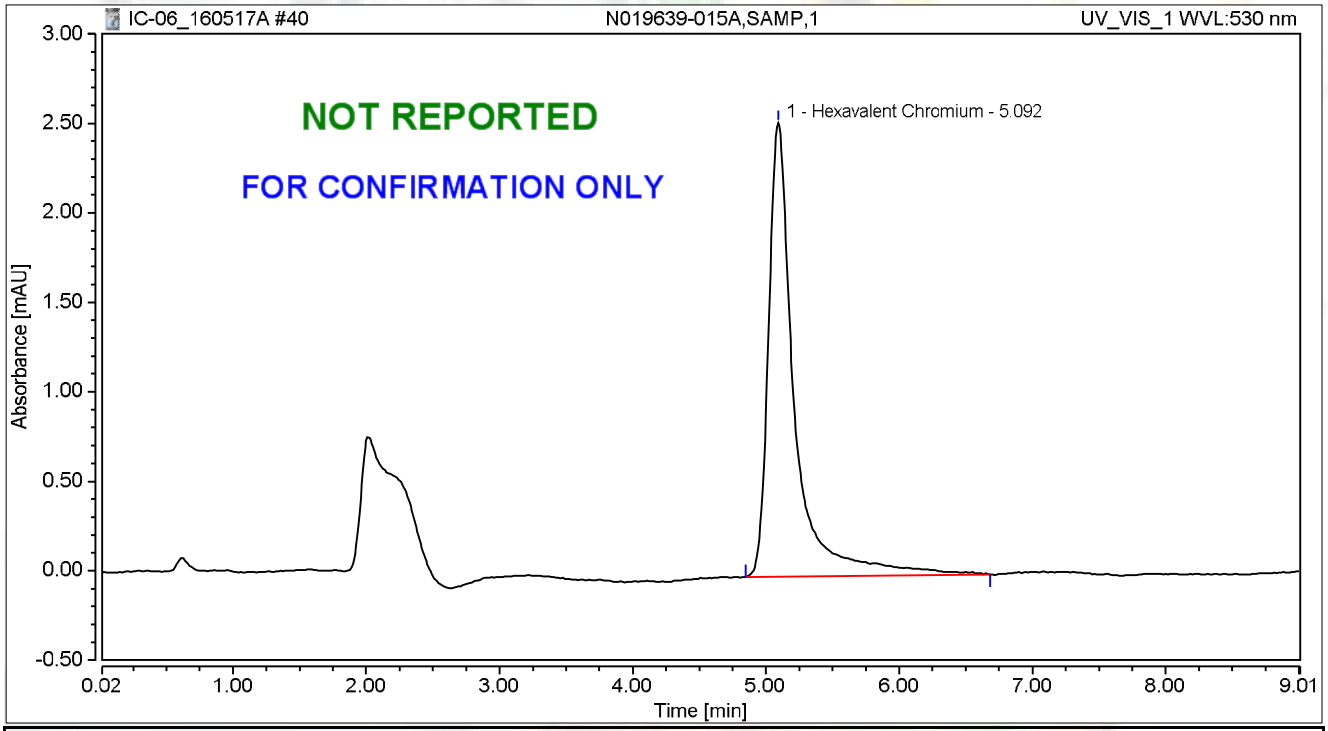
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	1.463	6.873	100.00	100.00	6.2467
Total:			**1.463**	**6.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019639-015A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

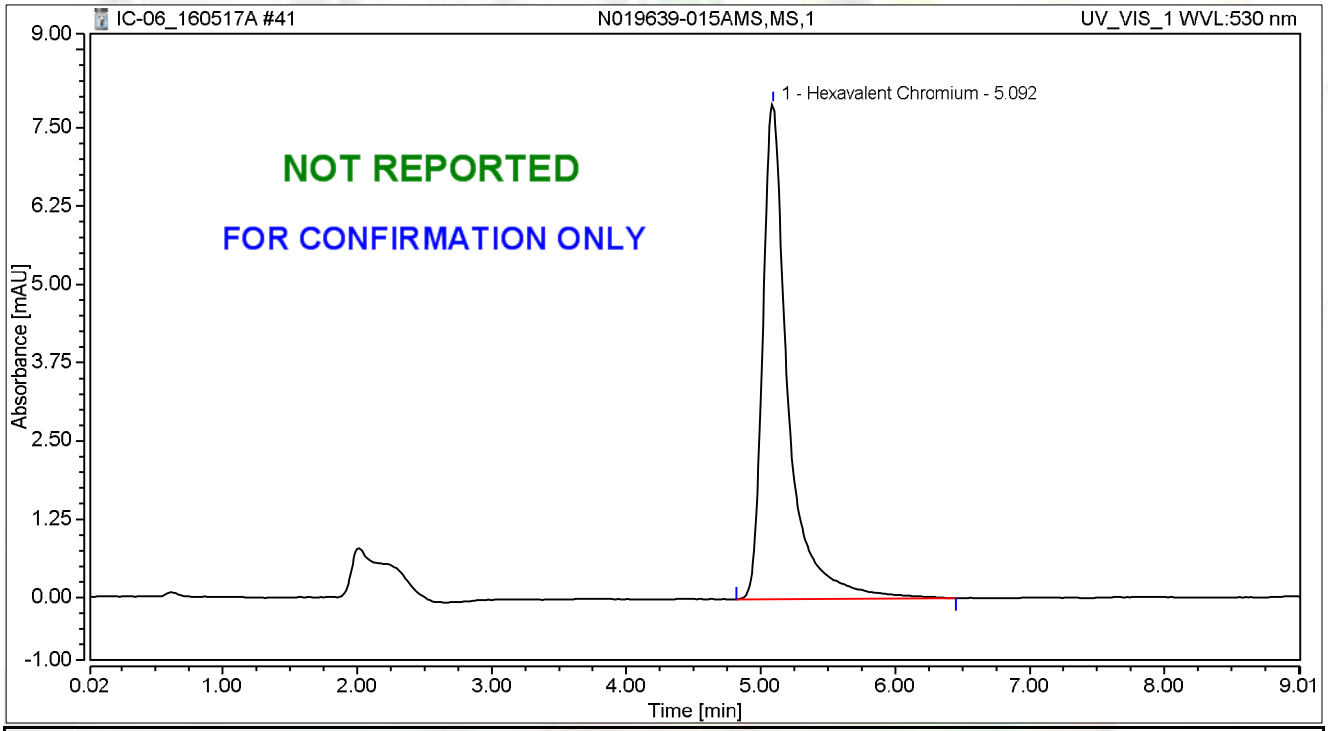
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	0.574	2.536	100.00	100.00	2.4412
Total:			**0.574**	**2.536**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019639-015AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

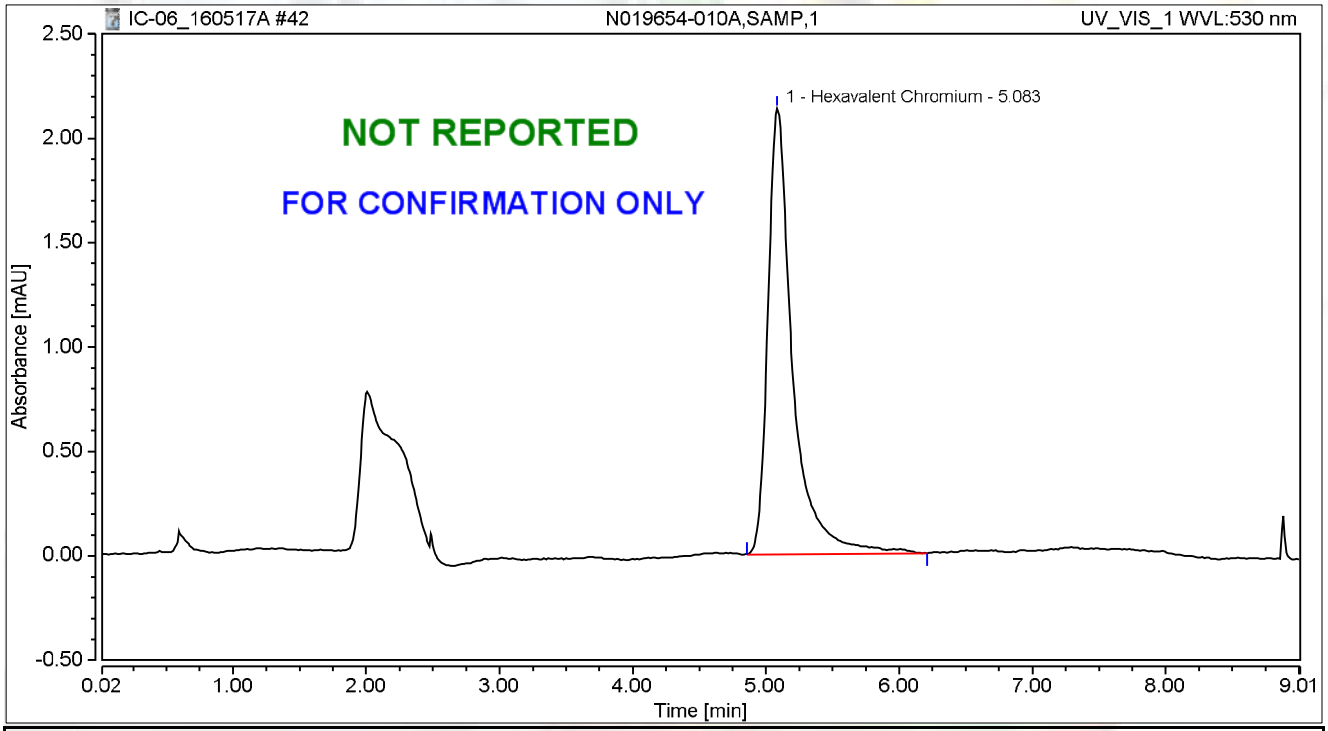
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	1.726	7.898	100.00	100.00	7.3716
Total:			**1.726**	**7.898**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-010A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

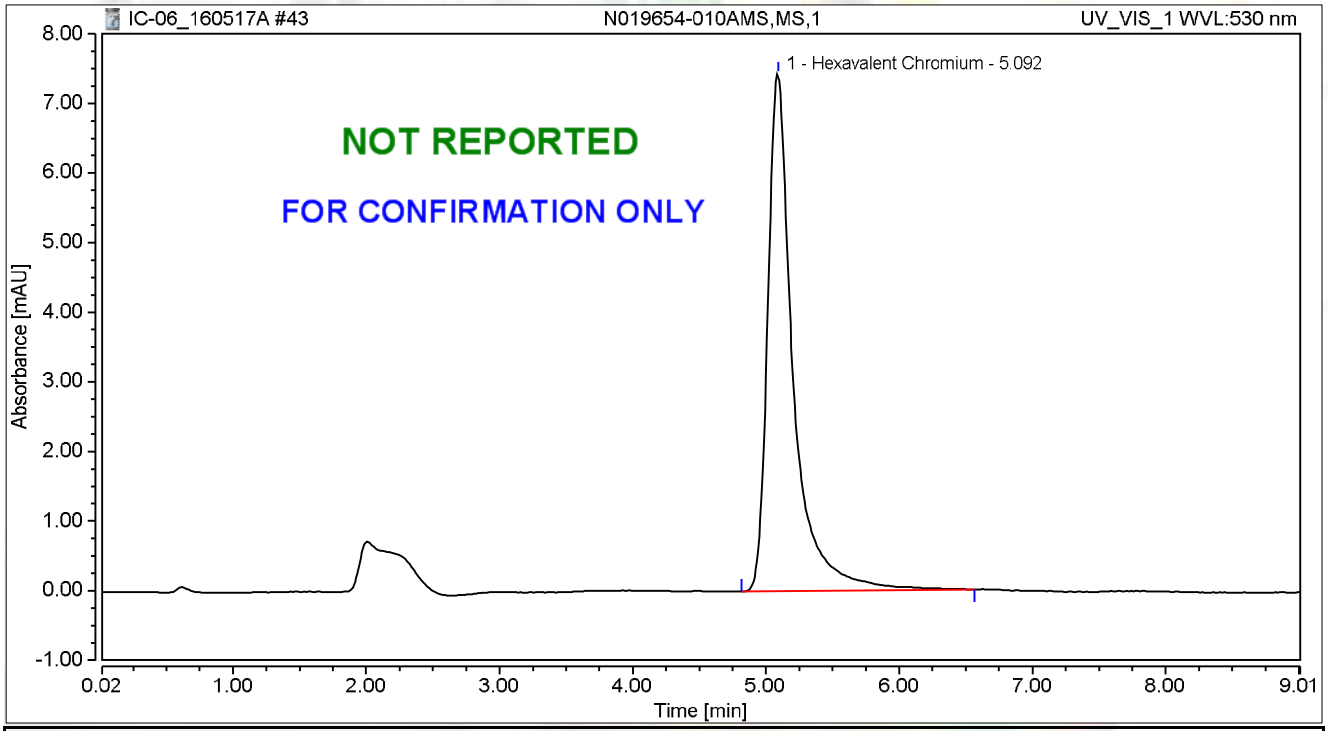
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.083	0.461	2.136	100.00	100.00	1.9557
Total:			**0.461**	**2.136**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N019654-010AMS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 16:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

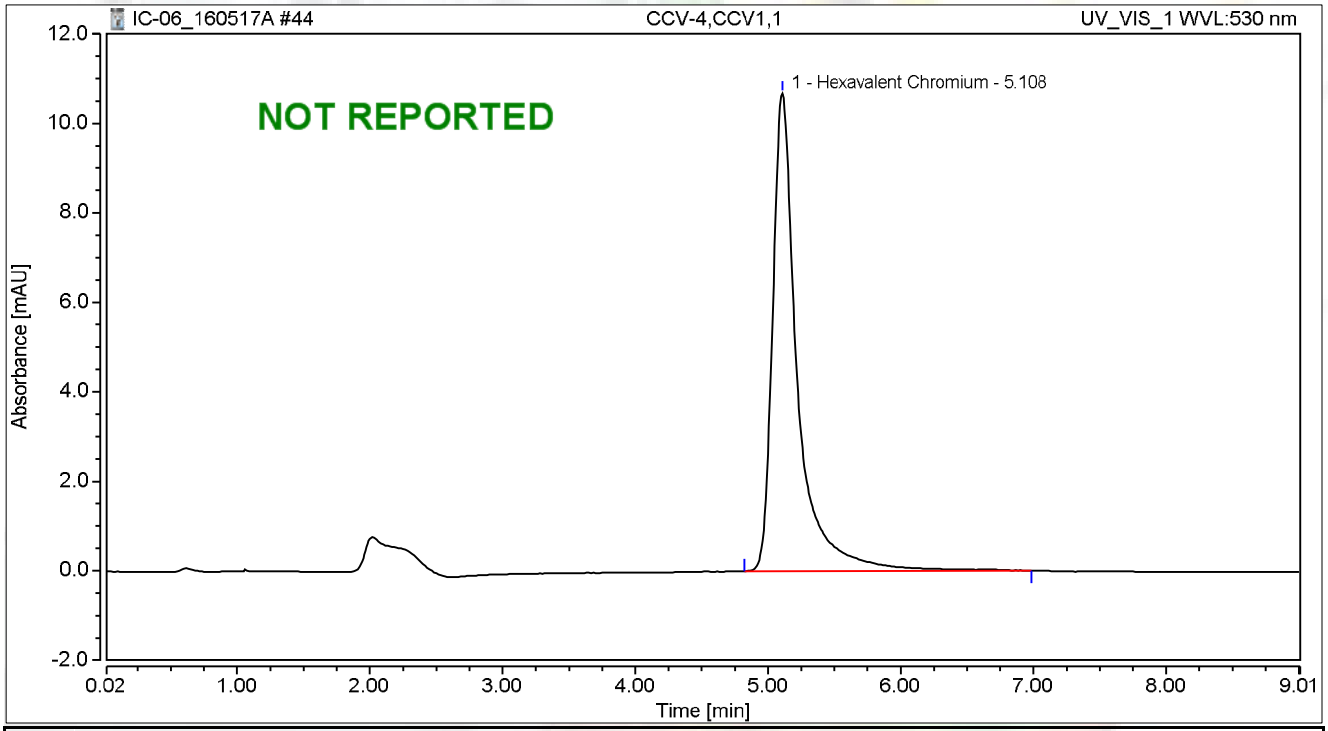
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.092	1.649	7.429	100.00	100.00	7.0401
Total:			**1.649**	**7.429**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1**	*Run Time (min):*	**8.99**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

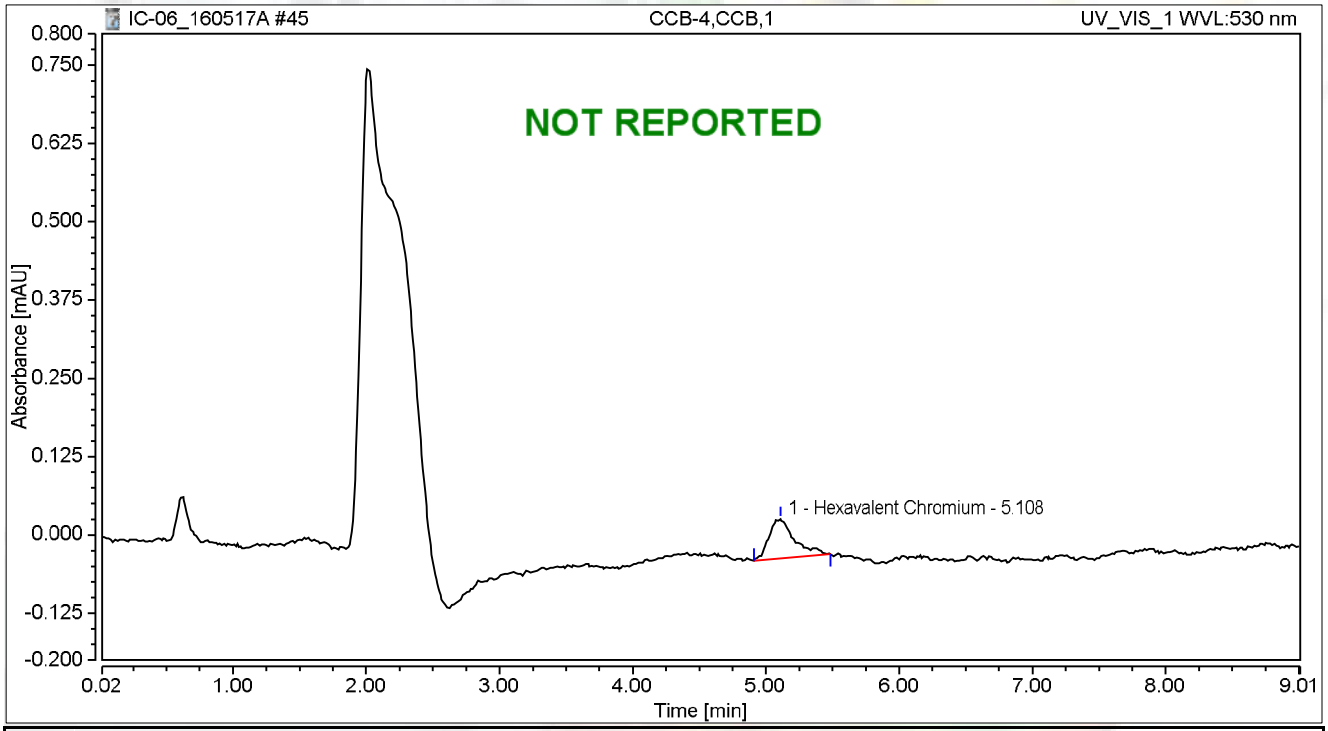
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	2.321	10.671	100.00	100.00	9.9174
Total:			**2.321**	**10.671**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160502_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/16 16:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.108	0.014	0.063	100.00	100.00	0.0418
Total:			**0.014**	**0.063**	**100.00**	**100.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108458 **Analyst:** QBM

ASSET #: N019730 **Date Analyzed:** 5/12/2016

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/20/2016

2nd Level Reviewer: Nancy 5/25/2016 Date: ——

SAMPLE CALCULATION

Sample ID: **N019730-001C @ pH 7.63**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.95 mL)

= **0.02092 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (10.05) (0.02092 N) (1) * 1000

= 210.2460 mg**/L**

Reporting results in two significant figures,

= **210 mg/L** as CaCO3

Julia Ramit 5/20/2016

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02092 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (10.05 mL) (0.02092) (1) * 1000

= 210.2460 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **210.2460 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **210 mg/L**

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.60	50	0.00	0.05	MBLK
LCS-1	8.33	50	0.00	4.80	LCS
N019663-001E	7.86	50	0.00	5.40	SAMP
N019730-001C	7.63	50	0.00	10.05	SAMP
N019730-002C	7.39	50	0.00	7.00	SAMP
N019730-003C	7.42	50	0.00	8.30	SAMP
N019748-001C	7.98	50	0.00	6.20	SAMP
N019730-001CDUP	7.64	50	0.00	10.00	DUP
N019730-003CMS	7.68	50	0.00	13.00	MS
N019730-003CMSD	7.70	50	0.00	13.00	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.95**	ml
N H2SO4	**0.02092**	Normal
Date Analyzed:	**5/12/16**	
Time:	**5:30PM**	
Analyzed By:	**QBM**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R160308A**	

Julia Ramit 5/20/2016

Date Analyzed:	5/12/16		Reagents:					Standardization:					P = 0
Time Started:	5:30PM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	QBM			Hydrochloric Acid:		0			Titrant used:	11.95	mL		P = 1/2 T
				Sulfuric Acid:		R160308A							P > 1/2 T
									N H2SO4	0.02092	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.6				0.02092	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.33				0.02092	0.00	4.80	4.80	1	0.00	100.42	
N019663-001E	50	7.86				0.02092	0.00	5.40	5.40	1	0.00	112.97	
N019730-001C	50	7.63				0.02092	0.00	10.05	10.05	1	0.00	210.25	
N019730-002C	50	7.39				0.02092	0.00	7.00	7.00	1	0.00	146.44	
N019730-003C	50	7.42				0.02092	0.00	8.30	8.30	1	0.00	173.64	
N019748-001C	50	7.98				0.02092	0.00	6.20	6.20	1	0.00	129.71	
N019730-001CDU	50	7.64				0.02092	0.00	10.00	10.00	1	0.00	209.21	
N019730-003CMS	50	7.68				0.02092	0.00	13.00	13.00	1	0.00	271.97	
N019730-003CMS	50	7.7				0.02092	0.00	13.00	13.00	1	0.00	271.97	

Silvia Ramit 5/20/2016

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	5/12/16
Time:	5:30PM
Analyzed By:	QBM

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	0.00	100.42	100.42	100.42		P = 0
N019663-001E	0.00	0.00	112.97	112.97	112.97		P = 0
N019730-001C	0.00	0.00	210.25	210.25	210.25		P = 0
N019730-002C	0.00	0.00	146.44	146.44	146.44		P = 0
N019730-003C	0.00	0.00	173.64	173.64	173.64		P = 0
N019748-001C	0.00	0.00	129.71	129.71	129.71		P = 0
N019730-001CDUP	0.00	0.00	209.21	209.21	209.21		P = 0
N019730-003CMS	0.00	0.00	271.97	271.97	271.97		P = 0
N019730-003CMSD	0.00	0.00	271.97	271.97	271.97		P = 0

Julia Ramit 5/20/2016

Alkalinity Preparation and Runlog

Book #5

Matrix: H_2O

Date Extracted:
Time Extracted:
Extracted By:

Date Analyzed: 5/12/16
Time Analyzed: 5:30 PM
Analyzed By: L

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-160125B
Hydrochloric Acid: –
Sulfuric Acid: K160305A
$NaHCO_3$: CINV-150601A

pH meter calibration: slope: 98.8%
pH 4 - 4.02 CINV-150828B
7 - 7.00 160309A
10 - 9.96 160111B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.61	IWST160512A	5 mL	0.05 N	–	–	11.95 mL	50/50	$N_{H_2SO_4} = \frac{(2.65\ g/L)(5\ mL)}{53\ (V_{titrant})} =$	0.0209205 N
	#2	↓	10.60	↓	↓	↓	–	–	11.95 ↓	↓		
1)	MBLK	50 mL	5.60	–	–	–	0.0209205	0	0.05	50/50		
2)	LCS	↓	8.33	IWST160512B	1 mL	0.05 N	↓	0	4.80	↓		
3)	N019663-001E	↓	7.86	–	–	–	↓	0	5.40	↓		
4)	N019730-001C	↓	7.63	–	–	–	↓	0	10.05	↓		
5)	↓ 2C	↓	7.39	–	–	–	↓	0	7.00	↓		
6)	↓ 3C	↓	7.42	–	–	–	↓	0	8.30	↓		
7)	N019748-001C	↓	7.98	–	–	–	↓	0	6.20	↓		
8)	N019730-001C[illegible]	↓	7.64	–	–	–	↓	0	10.0	↓		
9)	N019730-003CMS	↓	7.68	IWST160512B	1 mL	0.05 N	↓	0	13.00	↓		
10)	↓ MSD	↓	7.70	↓	↓	↓	↓	0	13.00	↓		
11)												
12)												
13)												
14)												
15)												
16)												
17)												
18)												
19)												
20)												
	MS											
	MSD											
	LCS											

$$P = \frac{(V_{pH\ 8.3})(N_{H_2SO_4})(50{,}000)}{V_{SX}}$$

$$T = \frac{(V_{pH\ 4.5})(N_{H_2SO_4})(50{,}000)}{V_{SX}}$$

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com
57 of 100

Julia Ramit 5/20/2016

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108524
ASSET #019651 / N019654 / N019655 / N0197
Method: N019730

[X] EPA 300.0
[ ] EPA 7199

Instrument ID: IC2
Analyst: QBM
Date Analyzed: 5/16/2016

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/18/2016

2nd Level Reviewer 5/25/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N019730-001C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 6.746 * 50

= 337.3

Reporting result in two significant values,

Sulfate, mg/L = 340

ANALYSIS RUN LOG

DIONEX SCHEDULE - C:\DX\SCHEDULE\160418.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160418.M	..\16041801.D01	1	1	1
2	,BLANK,	..\160418.M	..\16041801.D02	1	1	1
3	AUTOCAL1R	..\160418.M	..\16041801.D03	1	1	1
4	AUTOCAL2R	..\160418.M	..\16041801.D04	1	1	1
5	AUTOCAL3R	..\160418.M	..\16041801.D05	1	1	1
6	AUTOCAL4R	..\160418.M	..\16041801.D06	1	1	1
7	AUTOCAL5R	..\160418.M	..\16041801.D07	1	1	1
8	AUTOCAL6R	..\160418.M	..\16041801.D08	1	1	1
9	,ICV,ICV,1,	..\160418.M	..\16041801.D09	1	1	1
10	,ICB,ICB,1,	..\160418.M	..\16041801.D10	1	1	1
11	,MB-H2O,MBLK,1,	..\160418.M	..\16041801.D11	1	1	1
12	,LCS-H2O,LCS,1,	..\160418.M	..\16041801.D12	1	1	1
13	,N019419-020C,SAMP,	..\160418.M	..\16041801.D13	1	1	1
14	,N019431-006C,SAMP,	..\160418.M	..\16041801.D14	1	1	1
15	,N019431-006CDUP,DU	..\160418.M	..\16041801.D15	1	1	1
16	,N019431-015C,SAMP,	..\160418.M	..\16041801.D16	1	1	1
17	,N019431-015CMS,MS,	..\160418.M	..\16041801.D17	1	1	1
18	,N019431-015CMSD,MS	..\160418.M	..\16041801.D18	1	1	1
19	,N019432-002C,SAMP,	..\160418.M	..\16041801.D19	1	1	1
20	,N019432-003C,SAMP,	..\160418.M	..\16041801.D20	1	1	1
21	,CCV-1,CCV,1,	..\160418.M	..\16041801.D21	1	1	1
22	,CCB-1,CCB,1,	..\160418.M	..\16041801.D22	1	1	1
23	,N019419-020C,SAMP,	..\160418.M	..\16041801.D23	1	1	1
24	,N019432-004C,SAMP,	..\160418.M	..\16041801.D24	1	1	1
25	,N019432-004CMS,MS,	..\160418.M	..\16041801.D25	1	1	1
26	,N019432-005C,SAMP,	..\160418.M	..\16041801.D26	1	1	1
27	,N019432-006C,SAMP,	..\160418.M	..\16041801.D27	1	1	1
28	,N019432-007C,SAMP,	..\160418.M	..\16041801.D28	1	1	1
29	,N019432-008C,SAMP,	..\160418.M	..\16041801.D29	1	1	1
30	,N019432-009C,SAMP,	..\160418.M	..\16041801.D30	1	1	1
31	,N019432-015C,SAMP,	..\160418.M	..\16041801.D31	1	1	1
32	,N019433-001C,SAMP,	..\160418.M	..\16041801.D32	1	1	1
33	,CCV-2,CCV,1,	..\160418.M	..\16041801.D33	1	1	1
34	,CCB-2,CCB,1,	..\160418.M	..\16041801.D34	1	1	1
35	,N019433-007C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
36	,N019433-008C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
37	,N019433-009C,SAMP,	..\160418.M	..\16041801.D01	1	1	1
38	,N019447-007D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
39	,N019447-008D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
40	,N019447-009D,SAMP,	..\160418.M	..\16041801.D01	1	1	1
41	,CCV-3,CCV,1,	..\160418.M	..\16041801.D01	1	1	1
42	,CCB-3,CCB,1,	..\160418.M	..\16041801.D01	1	1	1
43	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

4/21/2016

DIONEX SCHEDULE - C:\DX\SCHEDULE\160516.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160418.M	..\16051601.D01	1	1	1
2	,CCV-1,CCV,1,	..\160418.M	..\16051601.D02	1	1	1
3	,CCB-1,CCB,1,	..\160418.M	..\16051601.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\160418.M	..\16051601.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\160418.M	..\16051601.D05	1	1	1
6	,N019651-001A,SAMP,	..\160418.M	..\16051601.D06	1	1	1
7	,N019651-002A,SAMP,	..\160418.M	..\16051601.D07	1	1	1
8	,N019651-003C,SAMP,	..\160418.M	..\16051601.D08	1	1	1
9	,N019651-004C,SAMP,	..\160418.M	..\16051601.D09	1	1	1
10	,N019651-005B,SAMP,	..\160418.M	..\16051601.D10	1	1	1
11	,N019651-006B,SAMP,	..\160418.M	..\16051601.D11	1	1	1
12	,N019651-007B,SAMP,	..\160418.M	..\16051601.D12	1	1	1
13	,N019654-001C,SAMP,	..\160418.M	..\16051601.D13	1	1	1
14	,CCV-2,CCV,1,	..\160418.M	..\16051601.D14	1	1	1
15	,CCB-2,CCB,1,	..\160418.M	..\16051601.D15	1	1	1
16	,N019654-003C,SAMP,	..\160418.M	..\16051601.D16	1	1	1
17	,N019654-005C,SAMP,	..\160418.M	..\16051601.D17	1	1	1
18	,N019654-006C,SAMP,	..\160418.M	..\16051601.D18	1	1	1
19	,N019654-007C,SAMP,	..\160418.M	..\16051601.D19	1	1	1
20	,N019654-008C,SAMP,	..\160418.M	..\16051601.D20	1	1	1
21	,N019654-009C,SAMP,	..\160418.M	..\16051601.D21	1	1	1
22	,N019651-001ADUP,DU	..\160418.M	..\16051601.D22	1	1	1
23	,N019651-003CMS,MS,	..\160418.M	..\16051601.D23	1	1	1
24	,N019651-003CMSD,MS	..\160418.M	..\16051601.D24	1	1	1
25	,N019654-001CMS,MS,	..\160418.M	..\16051601.D25	1	1	1
26	,CCV-3,CCV,1,	..\160418.M	..\16051601.D26	1	1	1
27	,CCB-3,CCB,1,	..\160418.M	..\16051601.D27	1	1	1
28	,N019655-001D,SAMP,	..\160418.M	..\16051601.D28	1	1	1
29	,N019730-001C,SAMP,	..\160418.M	..\16051601.D29	1	1	1
30	,N019730-001C,SAMP,	..\160418.M	..\16051601.D30	1	1	1
31	,N019730-002C,SAMP,	..\160418.M	..\16051601.D31	1	1	1
32	,N019730-002C,SAMP,	..\160418.M	..\16051601.D32	1	1	1
33	,N019730-003C,SAMP,	..\160418.M	..\16051601.D33	1	1	1
34	,N019730-003C,SAMP,	..\160418.M	..\16051601.D34	1	1	1
35	,CCV-4,CCV,1,	..\160418.M	..\16051601.D35	1	1	1
36	,CCB-4,CCB,1,	..\160418.M	..\16051601.D36	1	1	1
37	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

5/18/2016

INITIAL CALIBRATION DATA SUMMARY

DIONEX METHOD PARAMETERS - 160418.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS

Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\14120201.D02

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

4/21/2016

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

4/21/2016

Component Table -- Last Modified: 11:34 on Mon, 18 Apr 2016

Component # 1 Fluoride Retention Time 2.53
Reference Comp. Fluoride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 1.96604E-002
K1 = 2.75525E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	21804	2420
3	5.00000E-001	176562	18677
4	1.00000E+000	340825	37434
5	2.50000E+000	885332	103067
6	5.00000E+000	1817297	221045

Component # 2 Chloride Retention Time 3.77
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.72865E-002
K1 = 3.73331E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	123564	13717
3	1.00000E+000	255623	26807
4	2.50000E+000	629433	71108
5	5.00000E+000	1294953	149595
6	1.00000E+001	2677600	327188

Component # 3 Nitrite Retention Time 4.59
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.51829E-002
K1 = 2.03122E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	26388	2305
3	5.00000E-001	238401	20080
4	1.00000E+000	464414	39654
5	2.50000E+000	1223706	108966
6	5.00000E+000	2457690	228709

Component # 4 Bromide Retention Time 5.56
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -6.25288E-002
K1 = 8.99369E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	20924	1945
3	5.00000E-001	71851	4996
4	1.00000E+000	121564	9309
5	2.50000E+000	293667	24471
6	5.00000E+000	556648	49106

4/21/2016

Component # 5 Nitrate Retention Time 6.29
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.81800E-002
K1 = 1.49417E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	37518	2737
3	5.00000E-001	326026	23702
4	1.00000E+000	630623	48352
5	2.50000E+000	1641516	132850
6	5.00000E+000	3348176	278990

Component # 6 Phosphate Retention Time 8.30
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = -4.16125E-002
K1 = 4.34400E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	22593	1464
3	5.00000E-001	124124	6708
4	1.00000E+000	268719	13127
5	2.50000E+000	580416	34073
6	5.00000E+000	1156467	69715

Component # 7 Sulfate Retention Time 9.48
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.23779E-001
K1 = 5.14729E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	101897	5288
3	2.00000E+000	369925	20046
4	5.00000E+000	913040	51522
5	1.00000E+001	1859900	108154
6	2.00000E+001	3896340	233845

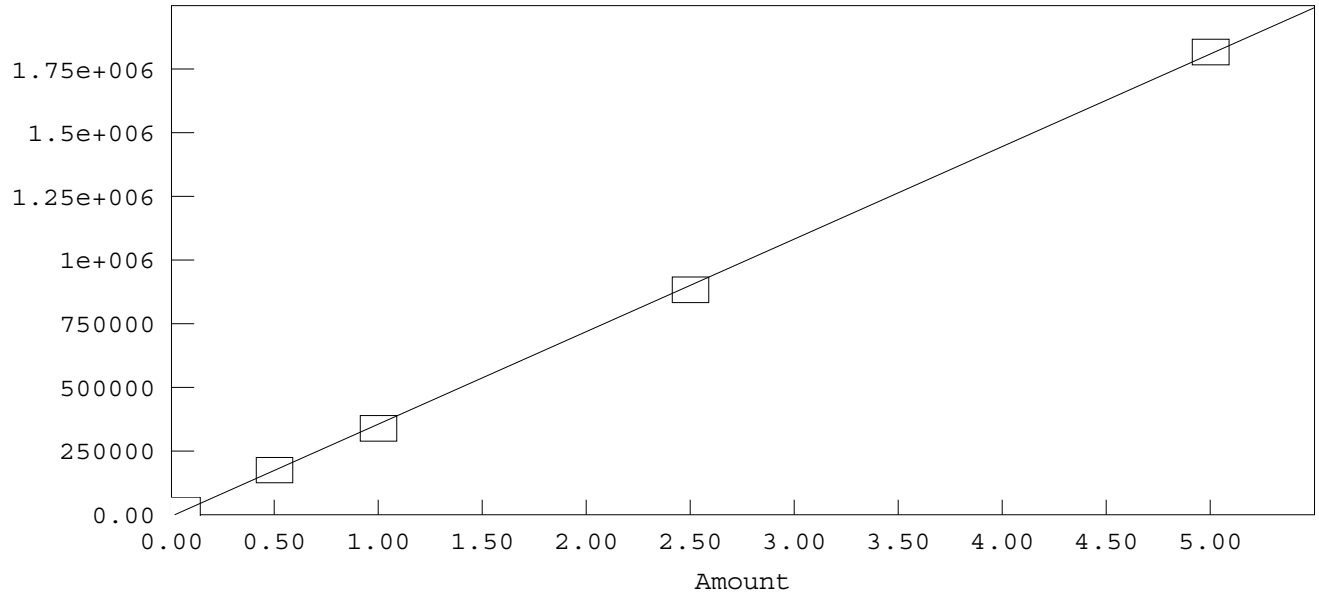
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

4/21/2016

Method: 160418.MET - Last Updated: 11:34 on Mon, 18 Apr 2016

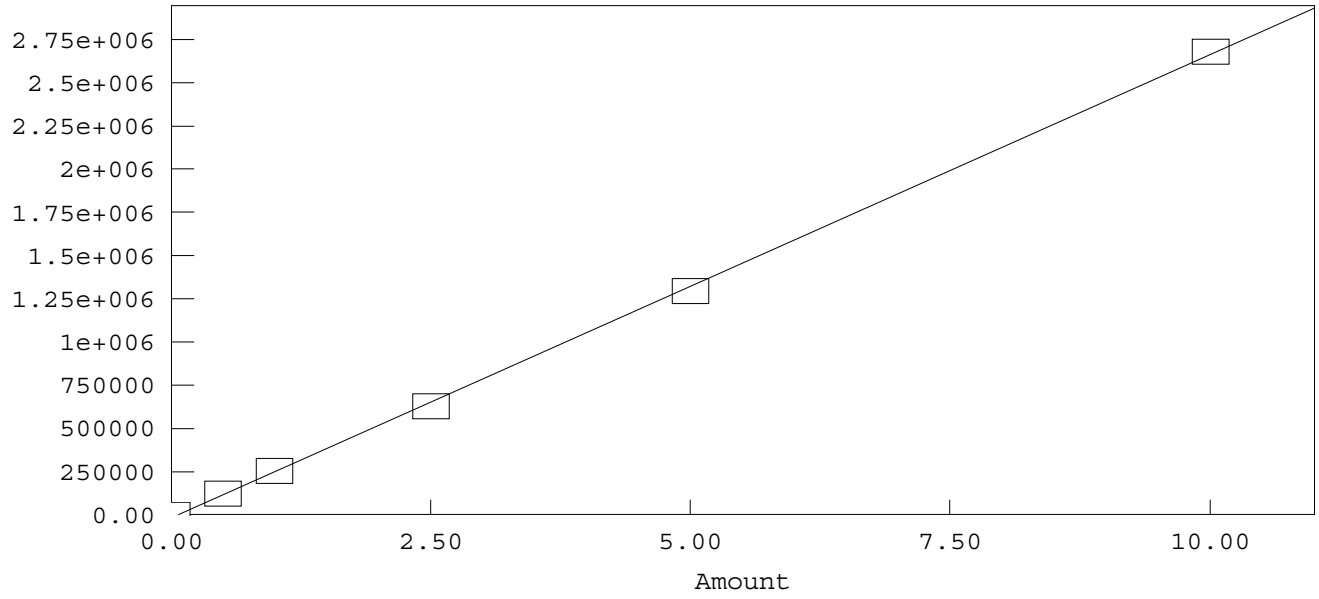
Component: Fluoride
Fit Type: Linear
r^2 = 0.999713
Amt = Resp * 2.755e-006 + 0.01966
Resp = Amt * 3.629e+005 + -7136
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

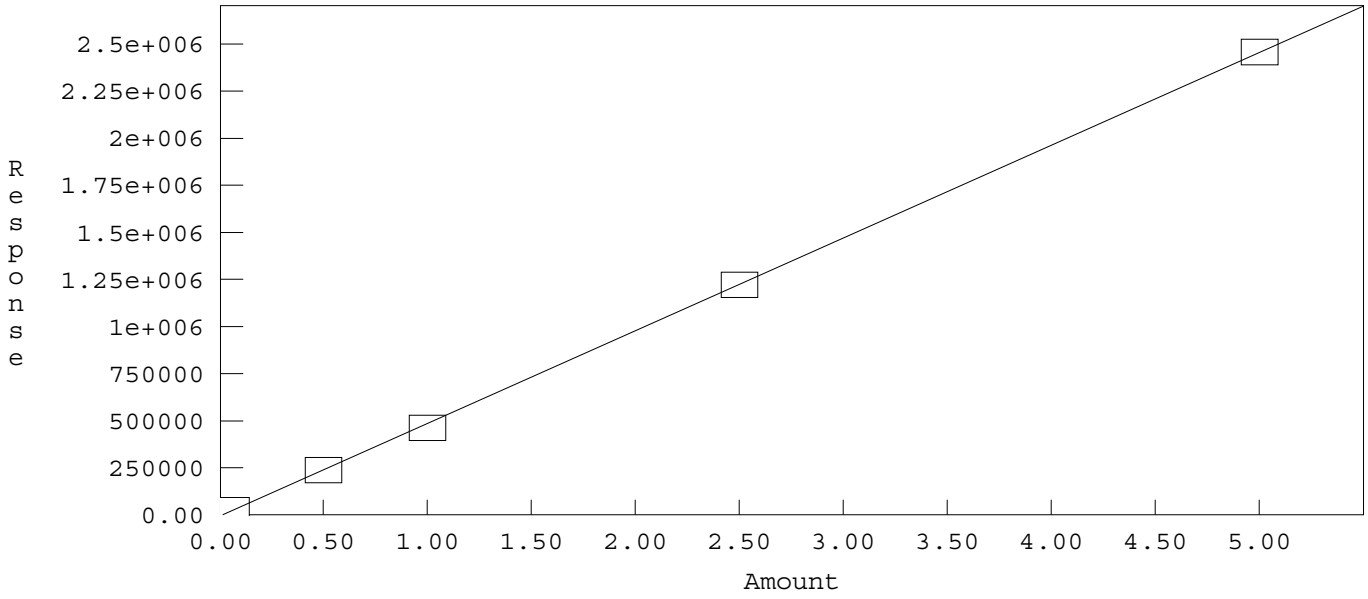
Component: Chloride
Fit Type: Linear
r^2 = 0.999635
Amt = Resp * 3.733e-006 + 0.06729
Resp = Amt * 2.679e+005 + -1.802e+004
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

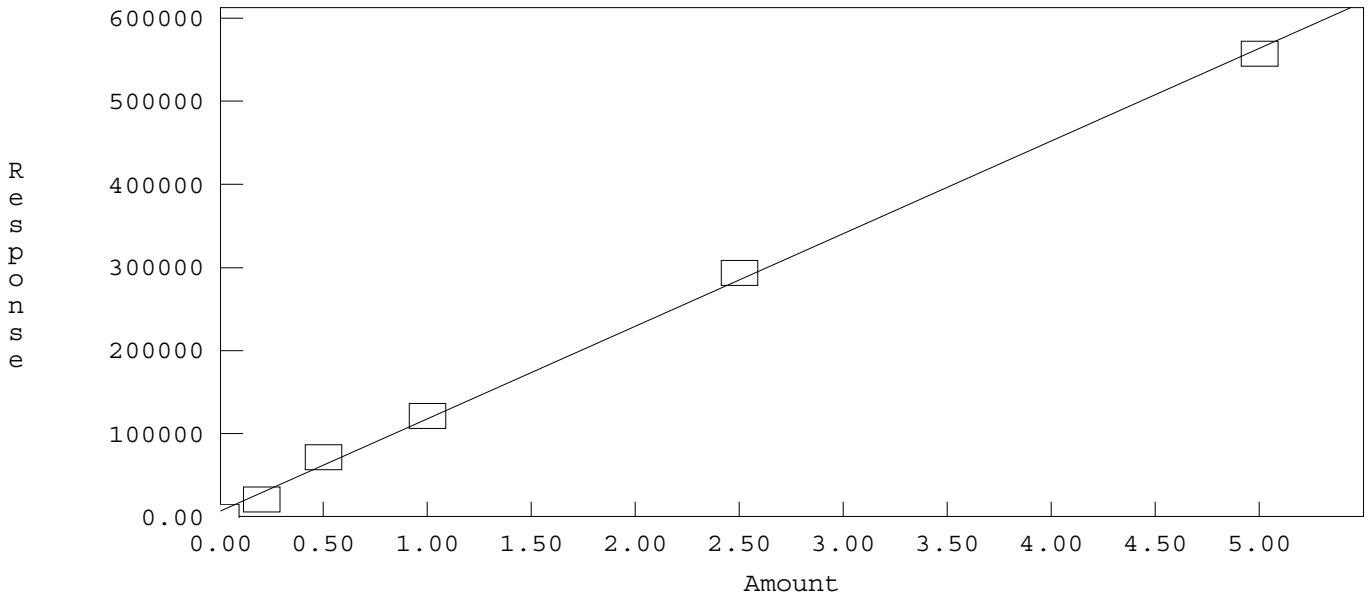
Component: Nitrite
Fit Type: Linear
r² = 0.999875
Amt = Resp * 2.031e-006 + 0.01518
Resp = Amt * 4.923e+005 + -7475
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

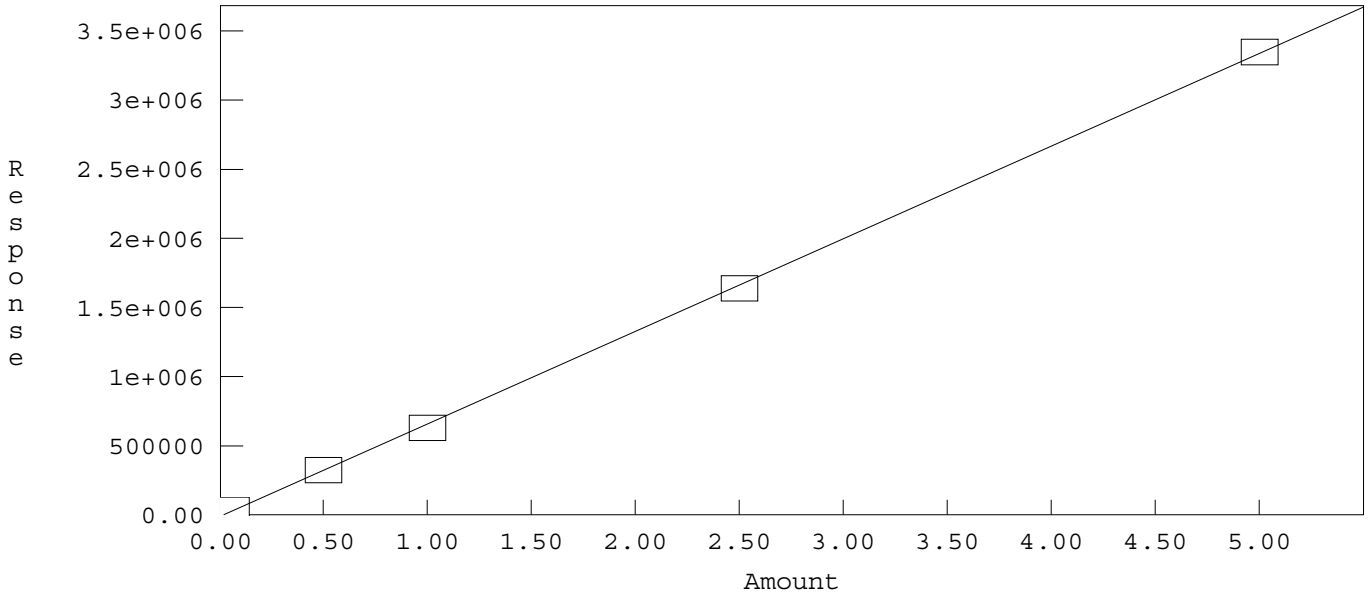
Component: Bromide
Fit Type: Linear
r² = 0.998550
Amt = Resp * 8.994e-006 + -0.06253
Resp = Amt * 1.112e+005 + 6953
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

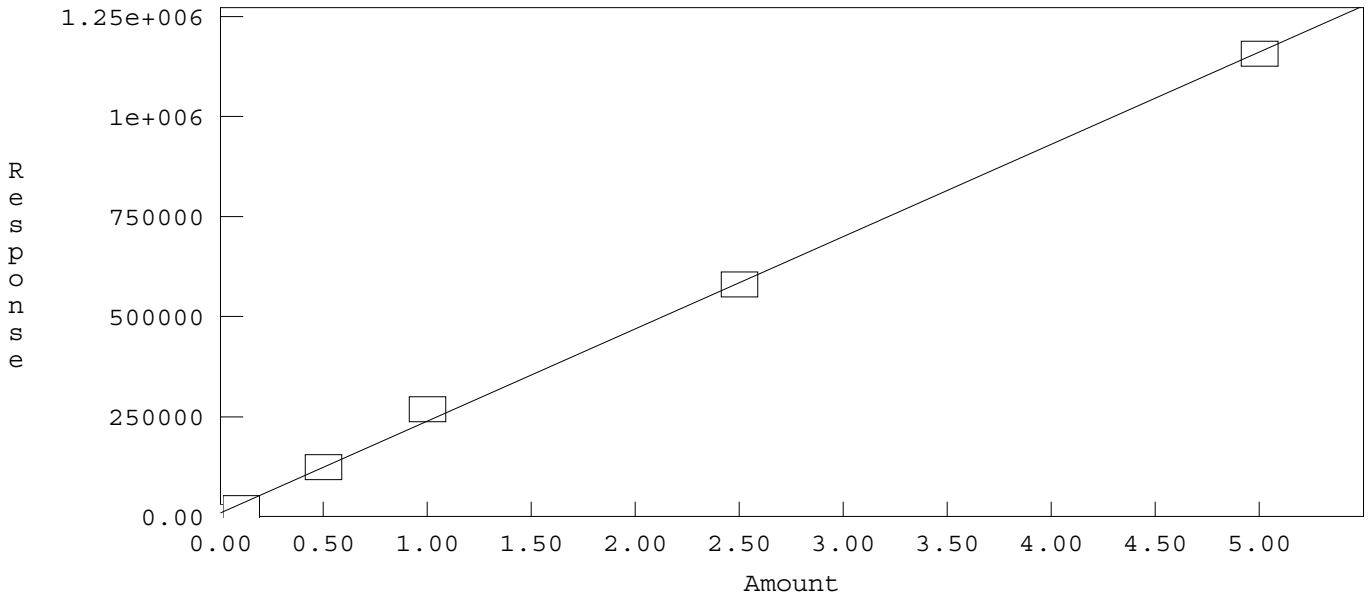
Component: Nitrate
Fit Type: Linear
r^2 = 0.999799
Amt = Resp * 1.494e-006 + 0.01818
Resp = Amt * 6.693e+005 + -1.217e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160418.MET

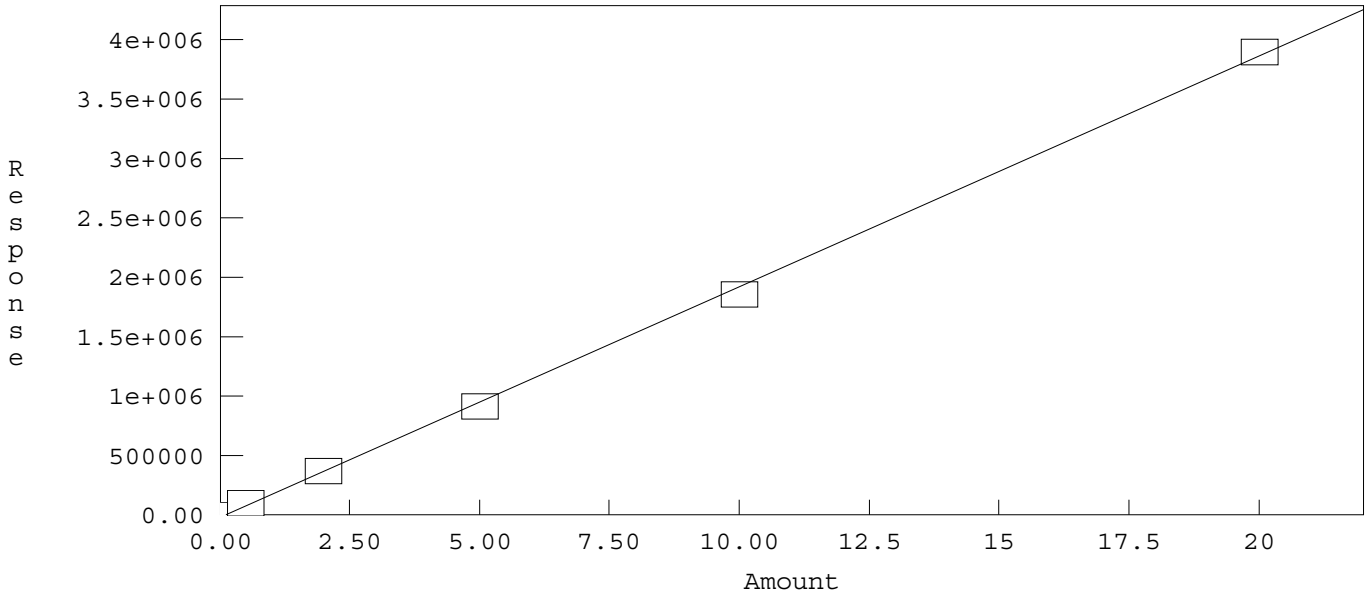
Component: Phosphate
Fit Type: Linear
r^2 = 0.998922
Amt = Resp * 4.344e-006 + -0.04161
Resp = Amt * 2.302e+005 + 9579
Standardization: External
Calibration: Area

4/21/2016



Method: C:\DX\METHOD\160418.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999345
Amt = Resp * 5.147e-006 + 0.1238
Resp = Amt * 1.943e+005 + -2.405e+004
Standardization: External
Calibration: Area



4/21/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **ICV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2330557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.437	0.50	2.500	0	97.5	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **CCV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2016**	SeqNo: **2330559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.557	0.50	2.500	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **CCV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2016**	SeqNo: **2330571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.526	0.50	2.500	0	101	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **CCV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2016**	SeqNo: **2330583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.546	0.50	2.500	0	102	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **CCV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2016**	SeqNo: **2330588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.444	0.50	2.500	0	97.8	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **ICV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **4/18/2016**	SeqNo: **2330590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.815	0.50	5.000	0	96.3	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **CCV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2016**	SeqNo: **2330592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.246	0.50	5.000	0	105	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **CCV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2016**	SeqNo: **2330601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.908	0.50	5.000	0	98.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **CCV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2016**	SeqNo: **2330606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.165	0.50	5.000	0	103	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108524**
Client ID: **CCV**	Batch ID: **R108524**	TestNo: **EPA 300.0**		Analysis Date: **5/16/2016**	SeqNo: **2330612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.934	0.50	5.000	0	98.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**108524**
Client ID:	**ICB**	Batch ID:	**R108524**	TestNo:	**EPA 300.0**			Analysis Date:	**4/18/2016**	SeqNo:	**2330558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-1**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**108524**
Client ID:	**CCB**	Batch ID:	**R108524**	TestNo:	**EPA 300.0**			Analysis Date:	**5/16/2016**	SeqNo:	**2330560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**108524**
Client ID:	**CCB**	Batch ID:	**R108524**	TestNo:	**EPA 300.0**			Analysis Date:	**5/16/2016**	SeqNo:	**2330572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**108524**
Client ID:	**CCB**	Batch ID:	**R108524**	TestNo:	**EPA 300.0**			Analysis Date:	**5/16/2016**	SeqNo:	**2330584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-4**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**108524**
Client ID:	**CCB**	Batch ID:	**R108524**	TestNo:	**EPA 300.0**			Analysis Date:	**5/16/2016**	SeqNo:	**2330589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	ICB	SampType:	ICB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	ICB	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	4/18/2016	SeqNo:	2330591

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-1	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	CCB	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330593

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-2	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	CCB	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330602

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-3	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	CCB	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330607

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-4	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108524
Client ID:	CCB	Batch ID:	R108524	TestNo:	EPA 300.0			Analysis Date:	5/16/2016	SeqNo:	2330613

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 5/16/2016

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.78	
CCV-2	Chloride	3.81	
CCV-3	Chloride	3.79	
CCV-4	Chloride	3.82	
	Average	3.800	
	Lower Limit	3.600	
	Upper Limit	4.000	
MB-R108524_CL	Chloride	0	N.A
LCS-R108524_CL	Chloride	3.81	PASS
N019651-001ADUP	Chloride	3.80	PASS
N019651-003CMS	Chloride	3.77	PASS
N019651-003CMSD	Chloride	3.79	PASS
N019654-001CMS	Chloride	3.81	PASS
N019730-001C	Chloride	3.79	PASS
N019730-002C	Chloride	3.79	PASS
N019730-003C	Chloride	3.77	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 5/16/2016

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.36	
CCV-2	Sulfate	9.36	
CCV-3	Sulfate	9.39	
CCV-4	Sulfate	9.39	
	Average	9.375	
	Lower Limit	9.175	
	Upper Limit	9.575	
MB-R108524 ~~MB-R108424~~_SO4	Sulfate	0	N.A
LCS-R108524 ~~LCS-R108424~~_SO4	Sulfate	9.38	PASS
N019651-001ADUP	Sulfate	9.38	PASS
N019651-003CMS	Sulfate	9.31	PASS
N019651-003CMSD	Sulfate	9.31	PASS
N019730-001C	Sulfate	9.30	PASS
N019730-002C	Sulfate	9.37	PASS
N019730-003C	Sulfate	9.29	PASS

5/25/2016

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (Low Level)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.100
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.100	0.0062	**0.0194**	0.050	0.500
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.050
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.200
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.050
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.100
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.100	0.0208	**0.0655**	0.150	0.500

MDL/LOD & PQL Verification 2016 (1st Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 2/24/2016
Analyst: Quennie B. Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Compound	MDL	LOD Spike Conc., mg/L	LOD actual Conc., mg/L	PQL Spike Conc., mg/L	PQL actual Conc., mg/L	%Recovery
Fluoride	**0.0174**	0.035	0.087	0.100	0.125	125
Chloride	**0.0194**	0.050	0.173	0.500	0.559	112
Nitrite	**0.0205**	0.030	0.052	0.050	0.069	138
Bromide	**0.0359**	0.100	0.102	0.200	0.151	76
Nitrate	**0.0130**	0.030	0.076	0.050	0.072	144
Phosphate	**0.0325**	0.050	0.078	0.100	0.115	115
Sulfate	**0.0655**	0.150	0.294	0.500	0.574	115

SM 3500-Cr B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108460 **Analyst:** QBM

ASSET #: N019544/N019613/N019730 **Date Analyzed:** 5/12/2016

Method: 3500_Cr

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/16/2016

2nd Level Reviewer 5/25/2016 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N019730-002A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 609.548 * 1

= 609.548 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 610

5/16/2016

INITIAL CALIBRATION DATA SUMMARY

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	5/12/2016
Organisation	(None Entered)	Time of Report	8:14:31
Information	(None Entered)		

Calibration - EPA 3500_CRB_05122016.fqc

Operator Name	(None Entered)
Instrument ID	152119

Calibration Method - EPA 3500_CRB_05122016.fqc

Description	Hexavalent Chromium by EPA 3500_CRB (Colorimetric)		
Operator Name	QBM		
Quant Mode	Single Lambda	Standards	5
Lambda 1	540.0 nm	Replicates	1
Lambda 2	Off	Initial Curve Fit	Linear
Lambda 3	Off	Conc. Units	ug/L
Integ. Time	00:00:01	Conc. Dec. Places	3
Lamp Change	325.0 nm	Flier Detection	Off
Bandwidth	2.0 nm	Valid Until	5/12/2017
Method Status	Unlocked		

Standards Table - EPA 3500_CRB_05122016.fqc

Standard	Conc.	Use	540.0nm	Errors
Standard01				
	10.000	Yes	0.009	None
Standard02				
	100.000	Yes	0.082	None
Standard03				
	250.000	Yes	0.201	None
Standard04				
	500.000	Yes	0.394	None
Standard05				
	1000.000	Yes	0.751	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

Errors Key

None	: No Errors Detected
I	: Invalid Data

Calibration Line / Curve Statistics

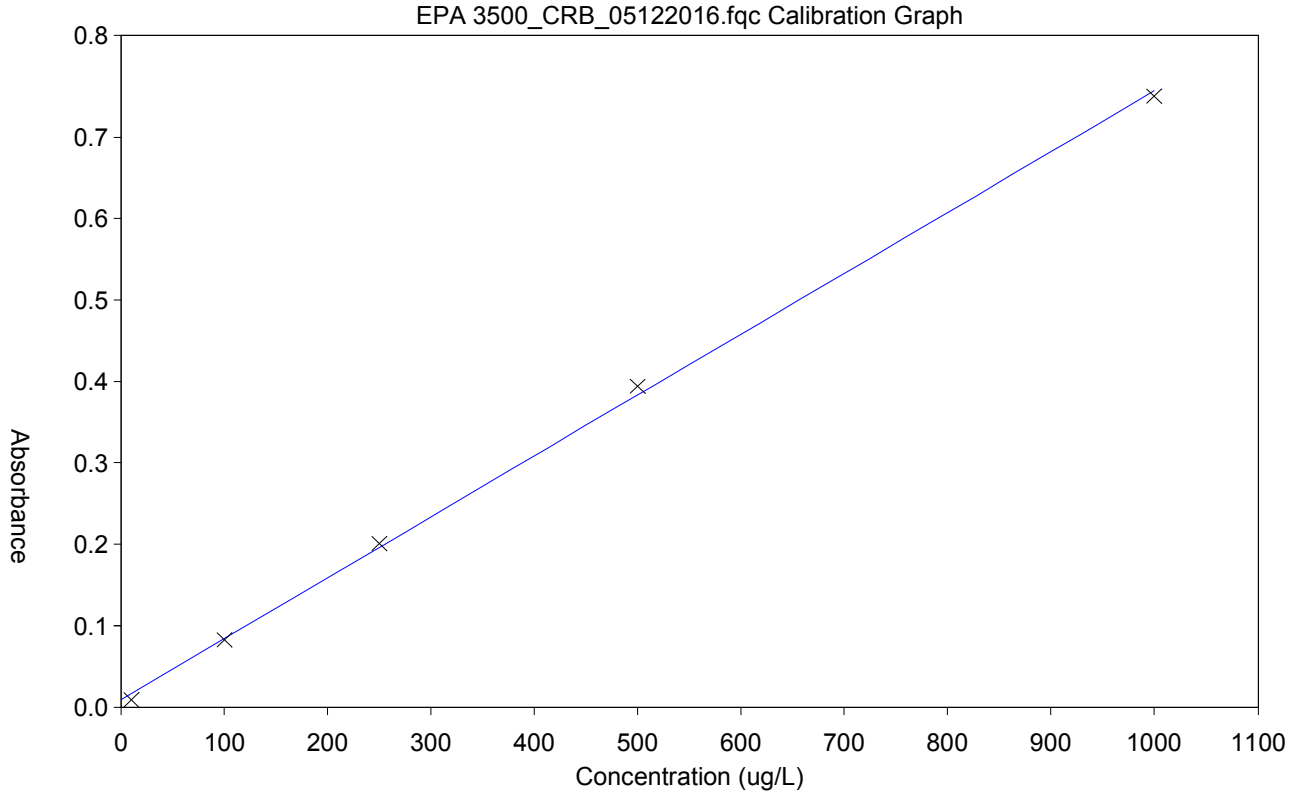
Equation	A = 0.0007 x Conc + 0.0091
Selected Fit	Linear

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	5/12/2016
Organisation	(None Entered)	Time of Report	8:14:31
Information	(None Entered)		

Coefficient	0.999288
Sum of Residuals	0.0003

Calibration Graph



ICAL: IWST160310A
ICV/LCS/MS/MSD: IWST160119A
CCV: ISST150306A
10% H2SO4: R160512E
1,5-Diphenylcarbazide Solution: R160512F

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108460**
Client ID: **CCV**	Batch ID: **R108460**	TestNo: **SM 3500-Cr B**		Analysis Date: **5/12/2016**	SeqNo: **2326407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	516.273	10	500.0	0	103	90	110				

Sample ID **ICV**	SampType: **ICV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108460**
Client ID: **ICV**	Batch ID: **R108460**	TestNo: **SM 3500-Cr B**		Analysis Date: **5/12/2016**	SeqNo: **2326409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	258.761	10	250.0	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

5/25/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	CCB-2	SampType:	CCB	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	CCB	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	-9.437	10									

Sample ID	ICB	SampType:	ICB	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108460
Client ID:	ICB	Batch ID:	R108460	TestNo:	SM 3500-Cr B			Analysis Date:	5/12/2016	SeqNo:	2326408

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	-10.3	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Calibration Method - EPA 3500_CRB_05122016.fqc

5/12/2016 20:30

Description	Hexavalent Chromium by EPA 3500_CRB (Colorimetric)
Operator Name	QBM
Quant Mode	Single Lambda
Lambda 1	540.0 nm
Lambda 2	Off
Lambda 3	Off
Integ. Time	00:00:01
Lamp Change	325.0 nm
Bandwidth	2.0 nm
Method Status	Unlocked

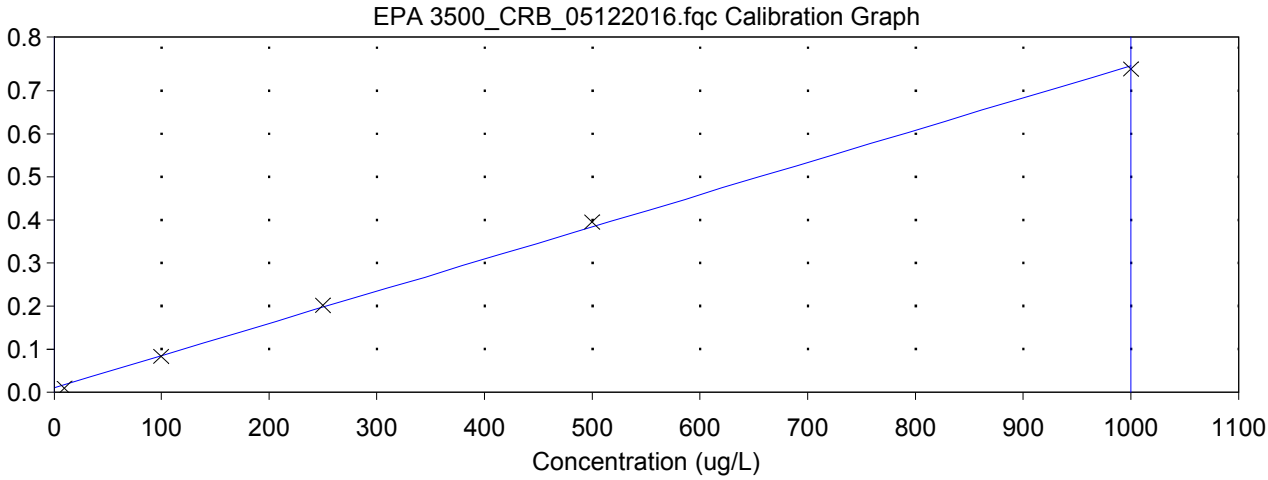
Standards	5
Replicates	1
Initial Curve Fit	Linear
Conc. Units	ug/L
Conc. Dec. Places	3
Flier Detection	Off
Valid Until	5/12/2017

Calibration Line / Curve Statistics

Equation	A = 0.0007 x Conc + 0.0091
Selected Fit	Linear
Coefficient	0.999288
Sum of Residuals	0.0003

Standard	Conc.	Use	540.0nm	Errors
Standard01	10.000	Yes	0.009	None
Standard02	100.000	Yes	0.082	None
Standard03	250.000	Yes	0.201	None
Standard04	500.000	Yes	0.394	None
Standard05	1000.000	Yes	0.751	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.



Batch : Hexavalent Chromium_05122016001.qre

	Sample	540.0nm	Conc.	Errors
1	,ICV,ICV,1,	0.203	258.761	None
2	,ICB,ICB,1,	0.001	-10.300	I
3	,MB-,MBLK,1,	0.001	-10.268	I
4	,LCS-,LCS,1,	0.083	98.933	None
5	,N019544-002A,SAMP,1,	0.472	618.984	None
6	,N019544-002ADUP,DUP,1,	0.480	629.474	None
7	,N019613-001D,SAMP,1,	0.003	-8.694	I
8	,N019613-002D,SAMP,1,	0.462	605.464	None
9	,N019730-002A,SAMP,1,	0.465	609.548	None
10	,N019730-003A,SAMP,1,	0.044	46.488	None
11	,N019730-003AMS,MS,1,	0.240	309.209	None
12	,N019730-003AMSD,MSD,1	0.242	311.795	None
13	,CCV-2,CCV,1,	0.395	516.273	None
14	,CCB-2,CCB,1,	0.002	-9.437	I

ICAL: IWST160310A
ICV/LCS/MS/MSD: IWST160119A
CCV: ISST150306A
10% H2SO4: R160512E
1,5-Diphenylcarbazide Solution: R160512F

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

5/25/2016

5/16/2016

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108423 **Analyst:** REB

ASSET #: N019730 **Date Analyzed:** 5/12/2016

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Reb 05/24/2016 Date: —

2nd Level Reviewer Nancy 5/25/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N019730-002D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6118*5

= 3.059 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 3.1

Reb 05/24/2016

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

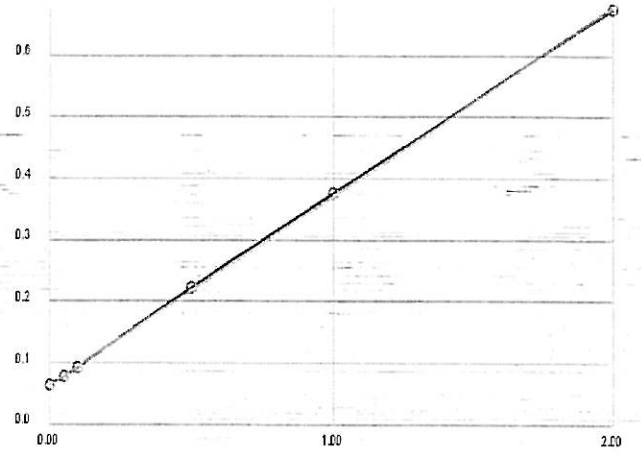
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3071x + 0.0648
Correlation	.999886

Calibrant	Energy	Set	Conc
1	0.0633	0.0000	-0.0049
2	0.0779	0.0500	0.0426
3	0.0934	0.1000	0.0931
4	0.2228	0.5000	0.5144
5	0.3767	1.0000	1.0156
6	0.6757	2.0000	1.9891



Notes:

2% CuSO4 - R160507A
R1 Buffer- R160507B
R2 Coloring Rgt. - R160507C

1° std- ISST-160211J
2° std- ISST-150730E

Reb 05/24/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **ICV**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **CCV**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.500	0.050	0.5000	0	100	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **CCV**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.454	0.050	0.5000	0	90.8	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **CCV**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.465	0.050	0.5000	0	93.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **ICB**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **CCB**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **CCB**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **108423**
Client ID: **CCB**	Batch ID: **R108423**	TestNo: **SM4500-NO3**		Analysis Date: **5/12/2016**	SeqNo: **2324511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-12-2016 08:47
Time end: 05-12-2016 11:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	10:58:32	0.0124		0.0686
2	<BLANK>	10:59:33	0.0058		0.0666
3	<CAL1>	11:00:27	-0.0049	[0]	0.0633
4	<CAL2>	11:01:22	0.0426	[0.05]	0.0779
5	<CAL3>	11:02:24	0.0931	[0.1]	0.0934
6	<CAL4>	11:03:18	0.5144	[0.5]	0.2228
7	<CAL5>	11:04:19	1.0156	[1]	0.3767
8	<CAL6>	11:05:15	1.9891	[2]	0.6757
9	,BLANK,BLANK,1,	11:06:10	0.0195		0.0708
10	,ICV,ICV,1,	11:07:10	0.4943		0.2166
11	,ICB,ICB,1,	11:08:06	-0.0101		0.0617
12	,MB-H2O,MBLK,1,	11:09:01	-0.0075		0.0625
13	,LCS-H2O,LCS,1,	11:10:01	0.4790		0.2119
14	,N019560-010C,SAMP,1,	11:10:57	0.0814		0.0898
15	,N019560-010CDUP,DUP,1,	11:11:52	0.0684		0.0858
16	,N019560-010CMS,MS,1,	11:12:54	0.5861		0.2448
17	,N019560-010CMSD,MSD,1,	11:13:48	0.6737		0.2717
18	,N019560-009C,SAMP,1,	11:14:43	0.0846		0.0908
19	,N019560-011C,SAMP,5,	11:15:45	0.7850		0.3059
20	,N019560-012C,SAMP,5,	11:16:39	0.7251		0.2875
21	,BLANK,BLANK,1	11:17:40	0.0023		0.0655
22	,CCV-1,CCV,1,	11:18:36	0.4998		0.2183
23	,CCB-1,CCB,1,	11:19:31	-0.0062		0.0629
24	,N019570-001C,SAMP,1,	11:20:32	0.1273		0.1039
25	,N019570-002C,SAMP,1,	11:21:27	0.7619		0.2988
26	,N019570-003C,SAMP,5,	11:22:29	0.4910		0.2156

Rob 05/24/2016

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N019570-004C,SAMP,1,	11:23:11	0.6479		0.2638
28	,N019570-005C,SAMP,5,	11:24:00	0.5841		0.2442
29	,N019590-001C,SAMP,5,	11:24:44	0.8541		0.3271
30	,N019590-005C,SAMP,20,	11:25:26	0.7899		0.3074
31	,N019590-007C,SAMP,1,	11:26:15	-0.0033		0.0638
32	,N019701-001C,SAMP,5,	11:26:57	0.6463		0.2633
33	,BLANK,BLANK,1	11:27:40	-0.0163		0.0598
34	,CCV-2,CCV,1,	11:28:28	0.4539		0.2042
35	,CCB-2,CCB,1,	11:29:12	-0.0179		0.0593
36	,N019714-001D,SAMP,1,	11:30:01	0.8111		0.3139
37	,N019714-002D,SAMP,1,	11:30:43	0.6942		0.2780
38	,N019714-003D,SAMP,1,	11:31:26	0.6789		0.2733
39	,N019730-001D,SAMP,1,	11:32:14	-0.0029		0.0639
40	,N019730-002D,SAMP,5,	11:32:58	0.6118		0.2527
41	,N019730-003D,SAMP,1,	11:33:40	0.8375		0.3220
42	,N019732-001D,SAMP,1,	11:34:29	0.7622		0.2989
43	,BLANK,BLANK,1	11:35:11	-0.0231		0.0577
44	,CCV-3,CCV,1,	11:35:54	0.4653		0.2077
45	,CCB-3,CCB,1,	11:36:44	-0.0254		0.0570

Rob 05/24/2016

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/12/2016
Time Analyzed: 08:47 AM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R160507B
Color reagent: R160507C
2% Copper Sulfate: R160507A
Ammonium Hydroxide: CINV-160406F

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N019560-009C		8.05						
2)	N019560-010C		8.50						
3)	N019560-011C		7.66						
4)	N019560-012C		7.88						
5)	N019570-001C		8.02						
6)	N019570-002C		8.15						
7)	N019570-003C		8.21						
8)	N019570-004C		8.15						
9)	N019570-005C		7.37						
10)	N019590-001C		7.85						
11)	N019590-005C		7.84						
12)	N019590-007C		8.02						
13)	N019701-001C		8.83						
14)	N019714-001D		8.75						
15)	N019714-002D		8.94						
16)	N019714-003D		8.85						
17)	N019730-001D		8.03						
18)	N019730-002D		7.57						
19)	N019730-003D		8.01						
20)	N019732-001D		8.67						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

Reb 05/24/2016

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58406
ASSET #: N019730

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/15/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N019730-001B PS failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/25/2016 Date: —

2nd Level Reviewer 5/26/2016 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58406
ASSET #: N019730

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/23/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Ca, Fe & Mg run only.
%Rec of Fe in N019639-019B PS/MS failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/25/2016 Date: —

2nd Level Reviewer 5/26/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Sodium concentration, in µg/L, in the original sample as follows:

Sodium ,µg/L = A * DF * PF * 1000

where:

A = mg/L, calculated concentration
DF = dilution factor
PF = Final Vol. of Digestate, mL / Amt. of Sample, mL

For Sample **N019730-001B** , the concentration in µg/L is calculated as follows:

Sodium ,µg/L = 10.422400000 * 25 * (25 / 25) * 1000

Sodium ,µg/L = 260560.000

Reporting results in two significant figures,

Sodium ,µg/L = 260000

% RSD SUMMARY

RSD SUMMARY: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	26.94	15	<PQL
Standard1	ICAL	1	Na	0.1	4.64	15	PASS
Standard2	ICAL	1	Na	1	0.8	15	PASS
Standard3	ICAL	1	Na	5	0.18	15	PASS
Standard4	ICAL	1	Na	10	0.15	15	PASS
Standard5	ICAL	1	Na	20	0.12	15	PASS
Standard6	ICAL	1	Na	40	0.11	15	PASS
ICV	ICV	1	Na	10.1	0.047	15	PASS
ICB	ICB	1	Na	0.018	28.26	15	<PQL
ICSA1	ICSA	1	Na	0.0065	59.65	15	<PQL
ICSAB1	ICSAB	1	Na	10.045	0.062	15	PASS
CCV1	CCV	1	Na	10.045	0.3	15	PASS
CCB1	CCB	1	Na	0.036	9.14	15	PASS
MB-58406	MBLK	1	Na	0.028	14.015	15	PASS
CCV2	CCV	1	Na	9.77	0.078	15	PASS
CCB2	CCB	1	Na	0.023	22.15	15	<PQL
LCS2-58406	LCS	1	Na	18.78	0.081	15	PASS
N019730-001B	SAMP	5	Na	48.95	0.072	15	PASS
N019730-002B	SAMP	5	Na	260.52	0.85	15	PASS
N019730-003B	SAMP	5	Na	282.6	0.68	15	PASS
CCV3	CCV	1	Na	9.83	0.15	15	PASS
CCB3	CCB	1	Na	0.048	10.88	15	PASS
CCV4	CCV	1	Na	11.3	1.044	15	PASS
CCB4	CCB	1	Na	1.33	1.48	15	PASS
CCV4	CCV	1	Na	10.61	0.21	15	PASS
CCB4	CCB	1	Na	0.66	0.46	15	PASS
CCB4	CCB	1	Na	0.54	0.85	15	PASS
CCB4	CCB	1	Na	0.45	1.055	15	PASS
CCV5	CCV	1	Na	22.54	94.68	15	NR!
CCV5	CCV	1	Na	10.3	0.24	15	PASS
CCB5	CCB	1	Na	0.38	2.38	15	PASS
ICSA2	ICSA	1	Na	0.41	1.029	15	PASS
ICSAB2	ICSAB	1	Na	10.35	0.21	15	PASS
CCV6	CCV	1	Na	10.21	0.12	15	PASS
CCB6	CCB	1	Na	0.29	1.37	15	PASS
CCV7	CCV	1	Na	10.19	0.35	15	PASS
CCB7	CCB	1	Na	0.26	0.3	15	PASS
N019730-001B	SAMP	25	Na	10.42	0.26	15	PASS
N019730-001B	SAMP	125	Na	2.38	0.12	15	PASS
N019730-001B-PS	PS	25	Na	11.44	0.087	15	PASS
N019730-001B-MS2	MS	25	Na	11.36	0.05	15	PASS
N019730-001B-MSD2	MSD	25	Na	11.4	0.17	15	PASS

RSD SUMMARY: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N019730-002B	SAMP	50	Na	27.61	0.075	15	PASS
N019730-003B	SAMP	50	Na	29.93	0.11	15	PASS
CCV8	CCV	1	Na	10.16	0.095	15	PASS
CCB8	CCB	1	Na	0.23	2.48	15	PASS
CCV9	CCV	1	Na	10.053	0.36	15	PASS
CCB9	CCB	1	Na	0.22	1.27	15	PASS
CCV10	CCV	1	Na	10.085	0.18	15	PASS
CCB10	CCB	1	Na	0.18	1.51	15	PASS
ICSA3	ICSA	1	Na	0.18	1.72	15	PASS
ICSAB3	ICSAB	1	Na	10	0.2	15	PASS

RSD SUMMARY: 160523C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	11.39	15	PASS
Standard1	ICAL	1	Ca	0.2	3.48	15	PASS
Standard2	ICAL	1	Ca	1	1.37	15	PASS
Standard3	ICAL	1	Ca	2	1.63	15	PASS
Standard4	ICAL	1	Ca	5	0.42	15	PASS
Standard5	ICAL	1	Ca	7.5	1.17	15	PASS
Standard6	ICAL	1	Ca	10	0.75	15	PASS
Standard7	ICAL	1	Ca	20	0.18	15	PASS
ICV	ICV	1	Ca	9.93	0.92	15	PASS
ICB	ICB	1	Ca	-0.035	69.055	15	<PQL
LLICV1	CCV1	1	Ca	0.17	14.13	20	PASS
ICSA1	ICSA	1	Ca	476.78	0.76	15	PASS
ICSAB1	ICSAB	1	Ca	582.68	1.41	15	PASS
LLICV1	CCV1	1	Ca	0.18	21.88	20	<PQL
MB-58406	MBLK	1	Ca	-0.025	13.93	15	PASS
LCS1-58406	LCS	1	Ca	9.039	0.28	15	PASS
N019639-019B	SAMP	1	Ca	115.8	0.23	15	PASS
N019639-019B	SAMP	5	Ca	24.55	0.44	15	PASS
N019639-019B-PS	PS	1	Ca	124.56	0.5	15	PASS
N019639-019B-MS1	MS	1	Ca	124.95	0.49	15	PASS
N019639-019B-MSD1	MSD	1	Ca	124.63	0.6	15	PASS
N019730-001B	SAMP	1	Ca	93.024	0.66	15	PASS
N019730-002B	SAMP	1	Ca	214.34	0.89	15	PASS
N019730-003B	SAMP	1	Ca	215.44	0.18	15	PASS
CCV1	CCV	1	Ca	9.94	0.11	15	PASS
CCB1	CCB	1	Ca	-0.039	42.00092	15	<PQL
CCV2	CCV	1	Ca	9.99	0.42	15	PASS
CCB2	CCB	1	Ca	-0.025	20.86	15	<PQL
CCB2	CCB	1	Ca	-0.0027	1235.99	15	<PQL
CCV3	CCV	1	Ca	9.89	0.67	15	PASS
CCB3	CCB	1	Ca	-0.011	127.46	15	<PQL
CCV4	CCV	1	Ca	9.76	0.7	15	PASS
CCB4	CCB	1	Ca	-0.015	44.37	15	<PQL
LLCCV1	CCV2	1	Ca	0.14	16.73	20	PASS
ICSA2	ICSA	1	Ca	465.12	0.18	15	PASS
ICSAB2	ICSAB	1	Ca	574.58	0.42	15	PASS
LLCCV1	CCV2	1	Ca	0.19	8.3	20	PASS
ICSA2	ICSA	1	Ca	473.56	0.45	15	PASS
ICSAB2	ICSAB	1	Ca	578.5	0.77	15	PASS
CalBlk	IBLK	1	Fe	0	13.51	15	PASS
Standard1	ICAL	1	Fe	0.02	2.97	15	PASS
Standard2	ICAL	1	Fe	0.05	0.57	15	PASS

RSD SUMMARY: 160523C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard3	ICAL	1	Fe	2	0.42	15	PASS
Standard4	ICAL	1	Fe	5	0.51	15	PASS
Standard5	ICAL	1	Fe	7.5	0.45	15	PASS
Standard6	ICAL	1	Fe	10	0.68	15	PASS
Standard7	ICAL	1	Fe	20	0.042	15	PASS
ICV	ICV	1	Fe	10.28	0.35	15	PASS
ICB	ICB	1	Fe	-0.0051	4.56	15	PASS
LLICV1	CCV1	1	Fe	0.015	2.61	20	PASS
ICSA1	ICSA	1	Fe	168.35	0.017	15	PASS
ICSAB1	ICSAB	1	Fe	182.94	0.12	15	PASS
LLICV1	CCV1	1	Fe	0.023	8.45	20	PASS
MB-58406	MBLK	1	Fe	-0.0039	4.49	15	PASS
LCS1-58406	LCS	1	Fe	0.1	0.84	15	PASS
N019639-019B	SAMP	1	Fe	0.062	0.65	15	PASS
N019639-019B	SAMP	5	Fe	0.0083	5.51	15	PASS
N019639-019B-PS	PS	1	Fe	0.18	0.67	15	PASS
N019639-019B-MS1	MS	1	Fe	0.19	0.74	15	PASS
N019639-019B-MSD1	MSD	1	Fe	0.16	3.011	15	PASS
N019730-001B	SAMP	1	Fe	0.065	2.11	15	PASS
N019730-002B	SAMP	1	Fe	-0.004	2.63	15	PASS
N019730-003B	SAMP	1	Fe	0.038	0.31	15	PASS
CCV1	CCV	1	Fe	10.25	0.13	15	PASS
CCB1	CCB	1	Fe	-0.0059	8.49	15	PASS
CCV2	CCV	1	Fe	10.33	0.56	15	PASS
CCB2	CCB	1	Fe	-0.004	20.2	15	<PQL
CCB2	CCB	1	Fe	-0.0045	4.024	15	PASS
CCV3	CCV	1	Fe	10.21	0.9	15	PASS
CCB3	CCB	1	Fe	0.0073	8.9	15	PASS
CCV4	CCV	1	Fe	10.25	0.35	15	PASS
CCB4	CCB	1	Fe	-0.003	18.58	15	<PQL
LLCCV1	CCV2	1	Fe	0.017	2.72	20	PASS
ICSA2	ICSA	1	Fe	168.09	0.12	15	PASS
ICSAB2	ICSAB	1	Fe	182.99	0.069	15	PASS
LLCCV1	CCV2	1	Fe	0.019	3.44	20	PASS
ICSA2	ICSA	1	Fe	168.46	0.034	15	PASS
ICSAB2	ICSAB	1	Fe	183.38	0.16	15	PASS
CalBlk	IBLK	1	Mg	0	10.37	15	PASS
Standard1	ICAL	1	Mg	0.1	0.52	15	PASS
Standard2	ICAL	1	Mg	1	0.58	15	PASS
Standard3	ICAL	1	Mg	2	0.29	15	PASS
Standard4	ICAL	1	Mg	5	0.49	15	PASS
Standard5	ICAL	1	Mg	7.5	0.45	15	PASS

RSD SUMMARY: 160523C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard6	ICAL	1	Mg	10	0.71	15	PASS
Standard7	ICAL	1	Mg	20	0.0024	15	PASS
ICV	ICV	1	Mg	10.089	0.17	15	PASS
ICB	ICB	1	Mg	-0.006	5.71	15	PASS
LLICV1	CCV1	1	Mg	0.1	0.95	20	PASS
ICSA1	ICSA	1	Mg	448.88	0.046	15	PASS
ICSAB1	ICSAB	1	Mg	524.19	0.28	15	PASS
LLICV1	CCV1	1	Mg	0.11	2.59	20	PASS
MB-58406	MBLK	1	Mg	-0.004	24.97	15	<PQL
LCS1-58406	LCS	1	Mg	9.96	0.74	15	PASS
N019639-019B	SAMP	1	Mg	18.94	0.076	15	PASS
N019639-019B	SAMP	5	Mg	4.095	0.33	15	PASS
N019639-019B-PS	PS	1	Mg	27.8	0.24	15	PASS
N019639-019B-MS1	MS	1	Mg	27.72	0.19	15	PASS
N019639-019B-MSD1	MSD	1	Mg	27.67	0.16	15	PASS
N019730-001B	SAMP	1	Mg	22	0.47	15	PASS
N019730-002B	SAMP	1	Mg	27.15	0.78	15	PASS
N019730-003B	SAMP	1	Mg	31.054	0.21	15	PASS
CCV1	CCV	1	Mg	10.064	0.11	15	PASS
CCB1	CCB	1	Mg	-0.006	1.58	15	PASS
CCV2	CCV	1	Mg	10.11	0.62	15	PASS
CCB2	CCB	1	Mg	-0.0059	3.56	15	PASS
CCB2	CCB	1	Mg	-0.0066	7.21	15	PASS
CCV3	CCV	1	Mg	10.05	1.21	15	PASS
CCB3	CCB	1	Mg	-0.00057	55.21	15	<PQL
CCV4	CCV	1	Mg	9.99	0.45	15	PASS
CCB4	CCB	1	Mg	-0.0027	19.66	15	<PQL
LLCCV1	CCV2	1	Mg	0.11	2.29	20	PASS
ICSA2	ICSA	1	Mg	444.14	0.27	15	PASS
ICSAB2	ICSAB	1	Mg	522.79	0.082	15	PASS
LLCCV1	CCV2	1	Mg	0.11	0.5	20	PASS
ICSA2	ICSA	1	Mg	456.59	0.041	15	PASS
ICSAB2	ICSAB	1	Mg	534.55	0.21	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160515A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207G,0.025<50mL
Standard2	MWST-151207G,0.25<50mL
Standard3	MWST-151207G,1.25<50mL
Standard4	MWST-151207G,2.5<50mL
Standard5	MWST-151207G,5<50mL
Standard6	MWST-151207G,10<50mL
ICV	MSST-140120B/-111006A/-150717A
CCV	MWST-151207G,2.5<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207H
Int. Std. (Sc):	MSST-150923A
PS Spike	MSST-140120B/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/15/2016	03:23:53 PM
2	Standard1	ICAL	1	05/15/2016	03:27:24 PM
3	Standard2	ICAL	1	05/15/2016	03:30:44 PM
4	Standard3	ICAL	1	05/15/2016	03:34:03 PM
5	Standard4	ICAL	1	05/15/2016	03:37:54 PM
6	Standard5	ICAL	1	05/15/2016	03:41:49 PM
7	Standard6	ICAL	1	05/15/2016	03:45:40 PM
8	ICV	ICV	1	05/15/2016	03:49:53 PM
1	ICB	ICB	1	05/15/2016	03:53:45 PM
3	ICSA1	ICSA	1	05/15/2016	03:57:03 PM
4	ICSAB1	ICSAB	1	05/15/2016	04:00:21 PM
38	MB-58401	MBLK	1	05/15/2016	04:06:29 PM
39	LCS2-58401	LCS	1	05/15/2016	04:09:48 PM
40	N019748-001D	SAMP	1	05/15/2016	04:13:43 PM
41	N019748-002A	SAMP	1	05/15/2016	04:17:35 PM
42	N019748-003A	SAMP	1	05/15/2016	04:21:26 PM
43	MB-58387	MBLK	1	05/15/2016	04:26:16 PM
44	LCS2-58387	LCS	1	05/15/2016	04:29:34 PM
45	N019606-001B	SAMP	5	05/15/2016	04:32:54 PM
46	N019606-002B	SAMP	5	05/15/2016	04:36:44 PM
5	CCV1	CCV	1	05/15/2016	04:40:04 PM
1	CCB1	CCB	1	05/15/2016	04:43:57 PM
47	N019606-003B	SAMP	5	05/15/2016	04:47:15 PM
48	N019607-003B	SAMP	5	05/15/2016	04:51:06 PM
49	MB-58328	MBLK	1	05/15/2016	04:54:57 PM
50	LCS2-58328	LCS	1	05/15/2016	05:00:40 PM
51	N019637-001C	SAMP	5	05/15/2016	05:04:34 PM
52	N019637-002C	SAMP	5	05/15/2016	05:07:55 PM
53	N019637-003C	SAMP	5	05/15/2016	05:11:14 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N019637-004C	SAMP	5	05/15/2016	05:14:33 PM
55	N019637-005C	SAMP	5	05/15/2016	05:17:53 PM
56	MB-58406	MBLK	1	05/15/2016	05:21:12 PM
5	CCV2	CCV	1	05/15/2016	05:24:32 PM
1	CCB2	CCB	1	05/15/2016	05:28:25 PM
57	LCS2-58406	LCS	1	05/15/2016	05:31:41 PM
58	N019730-001B	SAMP	5	05/15/2016	05:35:02 PM
59	N019730-002B	SAMP	5	05/15/2016	05:38:02 PM
60	N019730-003B	SAMP	5	05/15/2016	05:42:53 PM
61	MB-58410	MBLK	1	05/15/2016	05:47:46 PM
62	LCS2-58410	LCS	1	05/15/2016	05:51:07 PM
63	N019742-001C	SAMP	5	05/15/2016	05:54:28 PM
64	N019742-002C	SAMP	5	05/15/2016	05:57:47 PM
65	N019743-001A	SAMP	5	05/15/2016	06:01:07 PM
66	N019743-002A	SAMP	5	05/15/2016	06:04:27 PM
5	CCV3	CCV	1	05/15/2016	06:07:46 PM
1	CCB3	CCB	1	05/15/2016	06:11:41 PM
67	N019743-003C	SAMP	5	05/15/2016	06:14:57 PM
68	N019743-004A	SAMP	5	05/15/2016	06:18:17 PM
69	N019743-005A	SAMP	5	05/15/2016	06:21:36 PM
70	N019743-006C	SAMP	5	05/15/2016	06:24:55 PM
71	N019744-001D	SAMP	5	05/15/2016	06:29:46 PM
72	N019744-002C	SAMP	5	05/15/2016	06:35:24 PM
73	N019744-003D	SAMP	5	05/15/2016	06:40:17 PM
74	N019744-004D	SAMP	5	05/15/2016	06:45:45 PM
75	N019744-005D	SAMP	5	05/15/2016	06:51:23 PM
76	N019744-006D	SAMP	5	05/15/2016	06:56:22 PM
5	CCV4	CCV	1	05/15/2016	07:01:51 PM
1	CCB4	CCB	1	05/15/2016	07:05:45 PM
5	CCV4	CCV	1	05/15/2016	07:12:13 PM
1	CCB4	CCB	1	05/15/2016	07:23:28 PM
1	CCB4	CCB	1	05/15/2016	07:33:18 PM
1	CCB4	CCB	1	05/15/2016	07:40:55 PM
77	N019744-007D	SAMP	100	05/15/2016	07:46:53 PM
78	N019744-008D	SAMP	100	05/15/2016	07:50:13 PM
79	MB-58396	MBLK	1	05/15/2016	07:53:34 PM
80	LCS2-58396	LCS	1	05/15/2016	07:56:54 PM
81	N019651-001C	SAMP	1	05/15/2016	08:00:51 PM
82	N019651-002C	SAMP	1	05/15/2016	08:04:10 PM
83	N019651-003B	SAMP	1	05/15/2016	08:07:30 PM
84	N019651-004B	SAMP	1	05/15/2016	08:10:50 PM
85	N019651-005A	SAMP	1	05/15/2016	08:14:10 PM
86	N019651-006A	SAMP	1	05/15/2016	08:17:31 PM
5	CCV5	CCV	1	05/15/2016	08:20:52 PM
5	CCV5	CCV	1	05/15/2016	08:24:10 PM
1	CCB5	CCB	1	05/15/2016	08:28:04 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
3	ICSA2	ICSA	1	05/15/2016	08:31:21 PM
4	ICSAB2	ICSAB	1	05/15/2016	08:34:38 PM
87	N019651-007A	SAMP	1	05/15/2016	08:38:32 PM
88	N019748-001D	SAMP	5	05/15/2016	08:41:52 PM
89	N019748-001D	SAMP	25	05/15/2016	08:45:12 PM
90	N019748-001D-PS	PS	1	05/15/2016	08:48:31 PM
91	N019748-001D-PS	PS	5	05/15/2016	08:53:22 PM
92	N019748-001D-MS2	MS	1	05/15/2016	08:56:42 PM
93	N019748-001D-MS2	MS	5	05/15/2016	09:01:34 PM
94	N019748-001D-MSD2	MSD	1	05/15/2016	09:04:54 PM
95	N019748-001D-MSD2	MSD	5	05/15/2016	09:09:47 PM
96	N019748-002A	SAMP	5	05/15/2016	09:13:07 PM
5	CCV6	CCV	1	05/15/2016	09:16:28 PM
1	CCB6	CCB	1	05/15/2016	09:20:22 PM
97	N019748-003A	SAMP	5	05/15/2016	09:23:40 PM
98	N019606-001B	SAMP	25	05/15/2016	09:27:02 PM
99	N019606-001B	SAMP	125	05/15/2016	09:30:23 PM
100	N019606-001B-PS	PS	25	05/15/2016	09:33:44 PM
101	N019606-001B-MS2	MS	25	05/15/2016	09:37:05 PM
102	N019606-001B-MSD2	MSD	25	05/15/2016	09:40:27 PM
103	N019606-002B	SAMP	25	05/15/2016	09:43:47 PM
104	N019606-003B	SAMP	25	05/15/2016	09:47:08 PM
105	N019607-003B	SAMP	25	05/15/2016	09:50:30 PM
106	N019637-004C	SAMP	25	05/15/2016	09:53:51 PM
5	CCV7	CCV	1	05/15/2016	09:57:12 PM
1	CCB7	CCB	1	05/15/2016	10:01:05 PM
107	N019637-004C-PS	PS	5	05/15/2016	10:04:22 PM
108	N019637-004C-MS2	MS	5	05/15/2016	10:08:14 PM
109	N019637-004C-MSD2	MSD	5	05/15/2016	10:12:08 PM
110	N019730-001B	SAMP	25	05/15/2016	10:16:02 PM
111	N019730-001B	SAMP	125	05/15/2016	10:19:23 PM
112	N019730-001B-PS	PS	25	05/15/2016	10:22:43 PM
113	N019730-001B-MS2	MS	25	05/15/2016	10:26:05 PM
114	N019730-001B-MSD2	MSD	25	05/15/2016	10:29:26 PM
115	N019730-002B	SAMP	50	05/15/2016	10:32:47 PM
116	N019730-003B	SAMP	50	05/15/2016	10:36:09 PM
5	CCV8	CCV	1	05/15/2016	10:39:31 PM
1	CCB8	CCB	1	05/15/2016	10:43:25 PM
117	N019743-006C	SAMP	50	05/15/2016	10:46:42 PM
118	N019743-006C	SAMP	250	05/15/2016	10:50:02 PM
119	N019743-006C-PS	PS	50	05/15/2016	10:53:24 PM
120	N019743-006C-MS2	MS	50	05/15/2016	10:56:44 PM
121	N019743-006C-MSD2	MSD	50	05/15/2016	11:00:04 PM
122	N019744-001D	SAMP	500	05/15/2016	11:03:24 PM
123	N019744-002C	SAMP	100	05/15/2016	11:06:46 PM
124	N019744-003D	SAMP	500	05/15/2016	11:10:07 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
125	N019744-004D	SAMP	500	05/15/2016	11:13:28 PM
126	N019744-005D	SAMP	500	05/15/2016	11:16:49 PM
5	CCV9	CCV	1	05/15/2016	11:20:09 PM
1	CCB9	CCB	1	05/15/2016	11:24:03 PM
127	N019744-006D	SAMP	500	05/15/2016	11:27:22 PM
128	N019744-007D	SAMP	500	05/15/2016	11:32:13 PM
129	N019744-008D	SAMP	200	05/15/2016	11:35:34 PM
130	MB-58396	MBLK	1	05/15/2016	11:38:55 PM
131	LCS2-58396	LCS	1	05/15/2016	11:42:16 PM
132	N019651-007A	SAMP	25	05/15/2016	11:45:40 PM
133	N019651-007A-PS	PS	5	05/15/2016	11:49:01 PM
134	N019651-007A-MS	MS	5	05/15/2016	11:52:54 PM
135	N019651-007A-MSD	MSD	5	05/15/2016	11:56:48 PM
38	MB-58355	MBLK	1	05/16/2016	12:00:41 AM
5	CCV10	CCV	1	05/16/2016	12:03:59 AM
1	CCB10	CCB	1	05/16/2016	12:07:54 AM
3	ICSA3	ICSA	1	05/16/2016	12:11:10 AM
4	ICSAB3	ICSAB	1	05/16/2016	12:14:27 AM
39	LCS2-58355	LCS	1	05/16/2016	12:18:21 AM
40	N019619-001A	SAMP	10	05/16/2016	12:21:41 AM
41	N019620-001A	SAMP	10	05/16/2016	12:25:00 AM
42	N019621-001A	SAMP	10	05/16/2016	12:28:19 AM
43	N019622-001A	SAMP	10	05/16/2016	12:31:38 AM
44	N019623-001A	SAMP	10	05/16/2016	12:34:57 AM
45	N019640-001A	SAMP	10	05/16/2016	12:38:16 AM
46	N019641-001A	SAMP	1	05/16/2016	12:41:35 AM
47	N019642-001A	SAMP	10	05/16/2016	12:44:55 AM
48	N019667-001A	SAMP	10	05/16/2016	12:48:16 AM
5	CCV11	CCV	1	05/16/2016	12:51:36 AM
1	CCB11	CCB	1	05/16/2016	12:55:30 AM
49	N019668-001A	SAMP	10	05/16/2016	12:58:47 AM
50	N019669-001A	SAMP	10	05/16/2016	01:02:07 AM
51	N019670-001A	SAMP	10	05/16/2016	01:05:26 AM
52	N019671-001A	SAMP	10	05/16/2016	01:08:45 AM
53	N019687-001A	SAMP	10	05/16/2016	01:12:05 AM
54	N019688-001A	SAMP	10	05/16/2016	01:15:24 AM
55	N019689-001A	SAMP	10	05/16/2016	01:18:43 AM
56	N019690-001A	SAMP	10	05/16/2016	01:22:02 AM
57	N019691-001A	SAMP	10	05/16/2016	01:25:22 AM
58	N019692-001A	SAMP	1	05/16/2016	01:28:41 AM
5	CCV12	CCV	1	05/16/2016	01:32:01 AM
1	CCB12	CCB	1	05/16/2016	01:35:55 AM
59	N019693-001A	SAMP	10	05/16/2016	01:39:12 AM
60	N019668-001A	SAMP	50	05/16/2016	01:42:33 AM
61	N019668-001A-PS	PS	10	05/16/2016	01:45:53 AM
62	N019668-001A-MS2	MS	10	05/16/2016	01:49:14 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
63	N019668-001A-MSD2	MSD	10	05/16/2016	01:52:35 AM
5	CCV13	CCV	1	05/16/2016	01:55:55 AM
1	CCB13	CCB	1	05/16/2016	01:59:49 AM
3	ICSA4	ICSA	1	05/16/2016	02:03:07 AM
4	ICSAB4	ICSAB	1	05/16/2016	02:06:26 AM

INJECTION LOG: 160523C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151207A,0.5<50mL
Standard2	MWST-151207F
Standard3	MWST-151207L,5<50mL
Standard4	MWST-151207L,12.5<50mL
Standard5	MWST-151207L,15<40mL
Standard6	MWST-151207L,25<50mL
Standard7	MWST-151207L
ICV	MWST-160201D
CCV	MWST-151207L,25<50mL
ICSA/ICSAB	MWST-151123F/MWST-151207M
Int. Std. (Y)	MSST-150923A/B
PS Spike	MWST-160201G/H/I

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/23/2016	09:17:09 PM
2	Standard1	ICAL	1	05/23/2016	09:22:21 PM
3	Standard2	ICAL	1	05/23/2016	09:28:01 PM
4	Standard3	ICAL	1	05/23/2016	09:33:42 PM
5	Standard4	ICAL	1	05/23/2016	09:39:22 PM
6	Standard5	ICAL	1	05/23/2016	09:46:07 PM
7	Standard6	ICAL	1	05/23/2016	09:52:47 PM
8	Standard7	ICAL	1	05/23/2016	09:59:27 PM
9	ICV	ICV	1	05/23/2016	10:08:17 PM
1	ICB	ICB	1	05/23/2016	10:32:19 PM
2	LLICV1	CCV1	1	05/23/2016	10:37:28 PM
4	ICSA1	ICSA	1	05/23/2016	10:50:09 PM
5	ICSAB1	ICSAB	1	05/23/2016	10:56:56 PM
2	LLICV1	CCV1	1	05/23/2016	11:02:29 PM
38	MB-58406	MBLK	1	05/23/2016	11:09:36 PM
39	LCS1-58406	LCS	1	05/23/2016	11:14:46 PM
40	N019639-019B	SAMP	1	05/23/2016	11:21:28 PM
41	N019639-019B	SAMP	5	05/23/2016	11:28:08 PM
42	N019639-019B-PS	PS	1	05/23/2016	11:33:49 PM
43	N019639-019B-MS1	MS	1	05/23/2016	11:40:31 PM
44	N019639-019B-MSD1	MSD	1	05/23/2016	11:47:12 PM
45	N019730-001B	SAMP	1	05/23/2016	11:53:56 PM
46	N019730-002B	SAMP	1	05/23/2016	11:59:37 PM
47	N019730-003B	SAMP	1	05/24/2016	12:06:19 AM
7	CCV1	CCV	1	05/24/2016	12:13:02 AM
1	CCB1	CCB	1	05/24/2016	12:19:44 AM
48	MB-58410	MBLK	1	05/24/2016	12:24:53 AM
49	LCS1-58410	LCS	1	05/24/2016	12:30:06 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
50	N019727-001B	SAMP	1	05/24/2016	12:36:51 AM
51	N019727-001B	SAMP	5	05/24/2016	12:43:33 AM
52	N019727-001B-PS	PS	1	05/24/2016	12:50:13 AM
53	N019727-001B-MS1	MS	1	05/24/2016	12:56:55 AM
54	N019727-001B-MSD1	MSD	1	05/24/2016	01:03:37 AM
55	N019727-002B	SAMP	1	05/24/2016	01:10:21 AM
56	N019727-003B	SAMP	100	05/24/2016	01:16:32 AM
57	N019727-004B	SAMP	100	05/24/2016	01:23:15 AM
7	CCV2	CCV	1	05/24/2016	01:29:55 AM
1	CCB2	CCB	1	05/24/2016	01:36:37 AM
1	CCB2	CCB	1	05/24/2016	01:42:46 AM
58	N019742-001C	SAMP	1	05/24/2016	01:48:25 AM
59	N019742-002C	SAMP	1	05/24/2016	01:55:10 AM
60	N019743-001A	SAMP	1	05/24/2016	02:01:53 AM
61	N019743-002A	SAMP	1	05/24/2016	02:07:35 AM
62	N019743-003C	SAMP	1	05/24/2016	02:13:17 AM
63	N019743-004A	SAMP	1	05/24/2016	02:18:58 AM
64	N019743-005A	SAMP	1	05/24/2016	02:24:39 AM
65	N019743-006C	SAMP	1	05/24/2016	02:30:22 AM
66	N019744-002C	SAMP	1	05/24/2016	02:37:04 AM
67	N019744-007D	SAMP	1	05/24/2016	02:43:21 AM
7	CCV3	CCV	1	05/24/2016	02:50:12 AM
1	CCB3	CCB	1	05/24/2016	02:56:54 AM
68	N019744-008D	SAMP	1	05/24/2016	03:02:34 AM
69	N019744-001D	SAMP	5	05/24/2016	03:09:19 AM
70	N019744-002C	SAMP	5	05/24/2016	03:16:01 AM
71	N019744-003D	SAMP	5	05/24/2016	03:21:44 AM
72	N019744-004D	SAMP	5	05/24/2016	03:28:26 AM
73	N019744-005D	SAMP	5	05/24/2016	03:35:09 AM
74	N019744-006D	SAMP	5	05/24/2016	03:41:52 AM
75	N019744-007D	SAMP	5	05/24/2016	03:48:05 AM
76	N019744-008D	SAMP	5	05/24/2016	03:54:50 AM
64	MB-58410	MBLK	1	05/24/2016	04:01:33 AM
7	CCV4	CCV	1	05/24/2016	04:07:15 AM
1	CCB4	CCB	1	05/24/2016	04:13:56 AM
2	LLCCV1	CCV2	1	05/24/2016	04:19:36 AM
4	ICSA2	ICSA	1	05/24/2016	04:25:16 AM
5	ICSAB2	ICSAB	1	05/24/2016	04:32:04 AM
2	LLCCV1	CCV2	1	05/24/2016	05:18:36 AM
4	ICSA2	ICSA	1	05/24/2016	05:24:21 AM
5	ICSAB2	ICSAB	1	05/24/2016	05:31:09 AM
48	MB-58410	MBLK	1	05/24/2016	07:47:29 AM
77	N019744-006D	SAMP	10	05/24/2016	07:52:41 AM
78	N019727-003B	SAMP	25	05/24/2016	07:58:54 AM
79	N019727-004B	SAMP	25	05/24/2016	08:04:35 AM
80	N019727-004B	SAMP	25	05/24/2016	08:09:46 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	05/24/2016	08:16:28 AM
1	CCB5	CCB	1	05/24/2016	08:30:56 AM
2	LLCCV2	CCV2	1	05/24/2016	08:36:35 AM
4	ICSA3	ICSA	1	05/24/2016	08:42:14 AM
5	ICSAB3	ICSAB	1	05/24/2016	08:49:02 AM
2	LLCCV2	CCV2	1	05/24/2016	09:10:54 AM
4	ICSA3	ICSA	1	05/24/2016	09:16:33 AM
5	ICSAB3	ICSAB	1	05/24/2016	09:23:20 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/12/2016 10:39:38**
Prep End Date: **5/12/2016 3:00:00**

Initials/ Date: 5/25/2016

Prep Factor Units
mL / mL

Prep Batch **58406** Prep Code: **3010_W_DISS** Technician **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-58406	Aqueous		25	☐	0	0	25	1.000		
LCS2-58406	Aqueous		25	☐	0	0	25	1.000		
MB-58406	Aqueous	<2	25	☐	0	0	25	1.000		
N019639-019B	Groundwater	<2	25	☐	0	0	25	1.000		
N019639-019B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019639-019B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N019654-009B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8406	HYDROCHLORIC ACID
8444	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/12/2016 10:39:38**
Prep End Date: **5/12/2016 3:00:00**

Initials/ Date: 5/25/2016

Prep Factor Units
mL / mL

Prep Batch **58406** Prep Code: **3010_W_DISS** Technician **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N019655-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019730-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019730-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019730-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019730-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019730-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019741-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019741-002B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8406	HYDROCHLORIC ACID
8444	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160201I	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160515A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	05/15/2016	03:23:53 PM	Na	589.594	39	0.00	mg/L	
Standard1	05/15/2016	03:27:24 PM	Na	589.594	376	0.1000	mg/L	
Standard2	05/15/2016	03:30:44 PM	Na	589.594	3663	1.000	mg/L	
Standard3	05/15/2016	03:34:03 PM	Na	589.594	18344	5.000	mg/L	
Standard4	05/15/2016	03:37:54 PM	Na	589.594	36307	10.000	mg/L	
Standard5	05/15/2016	03:41:49 PM	Na	589.594	71839	20.000	mg/L	
Standard6	05/15/2016	03:45:40 PM	Na	589.594	143432	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 160523C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	05/23/2016	09:17:09 PM	Mg	279.079	58	0.00	mg/L	
Standard1	05/23/2016	09:22:21 PM	Mg	279.079	909	0.1000	mg/L	
Standard2	05/23/2016	09:28:01 PM	Mg	279.079	8599	1.000	mg/L	
Standard3	05/23/2016	09:33:42 PM	Mg	279.079	17214	2.000	mg/L	
Standard4	05/23/2016	09:39:22 PM	Mg	279.079	43575	5.000	mg/L	
Standard5	05/23/2016	09:46:07 PM	Mg	279.079	64329	7.500	mg/L	
Standard6	05/23/2016	09:52:47 PM	Mg	279.079	86916	10.000	mg/L	
Standard7	05/23/2016	09:59:27 PM	Mg	279.079	170565	20.000	mg/L	1.0000
Calcium								
CalBlk	05/23/2016	09:17:09 PM	Ca	227.546	-34	0.00	mg/L	
Standard1	05/23/2016	09:22:21 PM	Ca	227.546	43	0.2000	mg/L	
Standard2	05/23/2016	09:28:01 PM	Ca	227.546	220	1.000	mg/L	
Standard3	05/23/2016	09:33:42 PM	Ca	227.546	444	2.000	mg/L	
Standard4	05/23/2016	09:39:22 PM	Ca	227.546	1112	5.000	mg/L	
Standard5	05/23/2016	09:46:07 PM	Ca	227.546	1674	7.500	mg/L	
Standard6	05/23/2016	09:52:47 PM	Ca	227.546	2283	10.000	mg/L	
Standard7	05/23/2016	09:59:27 PM	Ca	227.546	4626	20.000	mg/L	0.9999
Iron								
CalBlk	05/23/2016	09:17:09 PM	Fe	273.953	79	0.00	mg/L	
Standard1	05/23/2016	09:22:21 PM	Fe	273.953	435	0.0200	mg/L	
Standard2	05/23/2016	09:28:01 PM	Fe	273.953	1256	0.050	mg/L	
Standard3	05/23/2016	09:33:42 PM	Fe	273.953	48475	2.000	mg/L	
Standard4	05/23/2016	09:39:22 PM	Fe	273.953	123444	5.000	mg/L	
Standard5	05/23/2016	09:46:07 PM	Fe	273.953	182325	7.500	mg/L	
Standard6	05/23/2016	09:52:47 PM	Fe	273.953	245977	10.000	mg/L	
Standard7	05/23/2016	09:59:27 PM	Fe	273.953	474904	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **ICV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10099.875	500	10000	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10044.932	500	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9766.248	500	10000	0	97.7	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9826.980	500	10000	0	98.3	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10610.002	500	10000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10302.550	500	10000	0	103	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10208.664	500	10000	0	102	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10190.094	500	10000	0	102	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10164.984	500	10000	0	102	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10052.831	500	10000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCV**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/16/2016**	SeqNo: **2328009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10085.363	500	10000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ICV**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/23/2016**	SeqNo: **2336214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9929.355	500	10000	0	99.3	90	110				
Iron	10284.266	20	10000	0	103	90	110				
Magnesium	10088.502	100	10000	0	101	90	110				

Sample ID **LLICV1**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ZZZZZZ**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/23/2016**	SeqNo: **2336219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	178.088	500	200.0	0	89.0	80	120				
Iron	22.892	20	20.00	0	114	80	120				
Magnesium	112.149	100	100.0	0	112	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **CCV**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9937.684	500	10000	0	99.4	90	110				
Iron	10252.539	20	10000	0	103	90	110				
Magnesium	10063.539	100	10000	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **CCV**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9988.088	500	10000	0	99.9	90	110				
Iron	10326.005	20	10000	0	103	90	110				
Magnesium	10109.633	100	10000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **CCV**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9887.728	500	10000	0	98.9	90	110				
Iron	10207.724	20	10000	0	102	90	110				
Magnesium	10050.371	100	10000	0	101	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **CCV**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9761.820	500	10000	0	97.6	90	110				
Iron	10246.513	20	10000	0	102	90	110				
Magnesium	9989.721	100	10000	0	99.9	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ZZZZZZ**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	192.179	500	200.0	0	96.1	70	130				
Iron	18.597	20	20.00	0	93.0	70	130				
Magnesium	109.541	100	100.0	0	110	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICB	SampType:	ICB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327882

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	17.569	500									

Sample ID	CCB1	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	CCB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327895

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	35.521	500									

Sample ID	CCB2	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	CCB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.292	500									

Sample ID	CCB3	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	CCB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327919

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	47.640	500									

Sample ID	CCB4	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	CCB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327935

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	448.003	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	383.953	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	290.661	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	260.955	500									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	227.403	500									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/15/2016**	SeqNo: **2327998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	221.344	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **CCB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/16/2016**	SeqNo: **2328010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	176.441	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ICB**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/23/2016**	SeqNo: **2336215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-35.069791	500									
Iron	-5.067745	20									
Magnesium	-5.950206	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **CCB**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-39.475615	500									
Iron	-5.886824	20									
Magnesium	-6.043766	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **CCB**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-2.711803	500									
Iron	-4.53026	20									
Magnesium	-6.571654	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **CCB**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-11.202134	500									
Iron	7.328	20									
Magnesium	-0.569806	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **CCB**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-15.483491	500									
Iron	-3.008478	20									
Magnesium	-2.67569	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSA	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	6.535	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSAB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10045.063	500	10000	0	100	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSA	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	414.189	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSAB	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/15/2016	SeqNo:	2327950

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10345.215	500	10000	0	103	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	108486
Client ID:	ICSA	Batch ID:	R108486	TestNo:	EPA 6010B			Analysis Date:	5/16/2016	SeqNo:	2328011

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	181.054	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **ICSAB**	Batch ID: **R108486**	TestNo: **EPA 6010B**		Analysis Date: **5/16/2016**	SeqNo: **2328012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9999.211	500	10000	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ICSA**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/23/2016**	SeqNo: **2336217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	463655.950	50	500000	0	92.7	80	120				
Calcium	476779.988	500	500000	0	95.4	80	120				
Iron	168350.337	20	200000	0	84.2	80	120				
Magnesium	448876.832	100	500000	0	89.8	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ICSAB**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/23/2016**	SeqNo: **2336218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	564945.901	50	500000	0	113	80	120				
Calcium	582681.277	500	500000	0	117	80	120				
Iron	182936.297	20	200000	0	91.5	80	120				
Magnesium	524187.161	100	500000	0	105	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ICSA**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	461098.117	50	500000	0	92.2	80	120				
Calcium	473563.174	500	500000	0	94.7	80	120				
Iron	168455.471	20	200000	0	84.2	80	120				
Magnesium	456593.274	100	500000	0	91.3	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ICSAB**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	562232.270	50	500000	0	112	80	120				
Calcium	578504.119	500	500000	0	116	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ICSAB**	Batch ID: **R108643**	TestNo: **EPA 6010B**		Analysis Date: **5/24/2016**	SeqNo: **2336430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	183383.995	20	200000	0	91.7	80	120				
Magnesium	534546.189	100	500000	0	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160515A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.029	102.88	65-125	PASS
Standard2	ICAL	1	1.032	103.21	65-125	PASS
Standard3	ICAL	1	1.033	103.33	65-125	PASS
Standard4	ICAL	1	1.024	102.42	65-125	PASS
Standard5	ICAL	1	1.023	102.31	65-125	PASS
Standard6	ICAL	1	1.011	101.07	65-125	PASS
ICV	ICV	1	1.02	102.02	65-125	PASS
ICB	ICB	1	1.015	101.5	65-125	PASS
ICSA1	ICSA	1	1.012	101.22	65-125	PASS
ICSAB1	ICSAB	1	1.012	101.15	65-125	PASS
CCV1	CCV	1	1.03	102.98	65-125	PASS
CCB1	CCB	1	1.032	103.15	65-125	PASS
MB-58406	MBLK	1	1.0086	100.86	65-125	PASS
CCV2	CCV	1	1.029	102.86	65-125	PASS
CCB2	CCB	1	1.027	102.69	65-125	PASS
LCS2-58406	LCS	1	1.08	107.99	65-125	PASS
N019730-001B	SAMP	5	1.032	103.16	65-125	PASS
N019730-002B	SAMP	5	1.0042	100.42	65-125	PASS
N019730-003B	SAMP	5	1.0019	100.19	65-125	PASS
CCV3	CCV	1	1.058	105.85	65-125	PASS
CCB3	CCB	1	1.056	105.58	65-125	PASS
CCV4	CCV	1	1.027	102.69	65-125	PASS
CCB4	CCB	1	1.0049	100.49	65-125	PASS
CCV4	CCV	1	1.05	105	65-125	PASS
CCB4	CCB	1	1.046	104.59	65-125	PASS
CCB4	CCB	1	1.044	104.38	65-125	PASS
CCB4	CCB	1	1.17	116.76	65-125	PASS
CCV5	CCV	1	0.71	71.19	65-125	PASS
CCV5	CCV	1	1.048	104.75	65-125	PASS
CCB5	CCB	1	1.11	110.91	65-125	PASS
ICSA2	ICSA	1	1.044	104.43	65-125	PASS
ICSAB2	ICSAB	1	1.05	104.97	65-125	PASS
CCV6	CCV	1	1.064	106.37	65-125	PASS
CCB6	CCB	1	1.14	114.21	65-125	PASS
CCV7	CCV	1	1.022	102.18	65-125	PASS
CCB7	CCB	1	1.11	110.67	65-125	PASS
N019730-001B	SAMP	25	1.028	102.85	65-125	PASS
N019730-001B	SAMP	125	1.021	102.08	65-125	PASS
N019730-001B-PS	PS	25	1.032	103.18	65-125	PASS
N019730-001B-MS2	MS	25	1.028	102.83	65-125	PASS

INTERNAL STANDARD: 160515A

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	~~Yttrium~~, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N019730-001B-MSD2	MSD	25	1.029	102.88	65-125	PASS
N019730-002B	SAMP	50	1.026	102.57	65-125	PASS
N019730-003B	SAMP	50	1.025	102.5	65-125	PASS
CCV8	CCV	1	1.045	104.47	65-125	PASS
CCB8	CCB	1	1.12	112.27	65-125	PASS
CCV9	CCV	1	1.033	103.26	65-125	PASS
CCB9	CCB	1	1.046	104.58	65-125	PASS
CCV10	CCV	1	1.042	104.17	65-125	PASS
CCB10	CCB	1	1.037	103.72	65-125	PASS
ICSA3	ICSA	1	1.021	102.08	65-125	PASS
ICSAB3	ICSAB	1	1.045	104.5	65-125	PASS

5/26/2016

INTERNAL STANDARD: 160523C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.84	65-125	PASS
Standard2	ICAL	1	1.21	120.76	65-125	PASS
Standard3	ICAL	1	0.99	99	65-125	PASS
Standard4	ICAL	1	0.98	97.98	65-125	PASS
Standard5	ICAL	1	0.98	97.75	65-125	PASS
Standard6	ICAL	1	0.98	97.63	65-125	PASS
Standard7	ICAL	1	0.96	96.048	65-125	PASS
ICV	ICV	1	0.98	98.26	65-125	PASS
ICB	ICB	1	0.99	99.049	65-125	PASS
LLICV1	CCV1	1	1.0021	100.21	65-125	PASS
ICSA1	ICSA	1	1.051	105.1	65-125	PASS
ICSAB1	ICSAB	1	0.81	80.86	65-125	PASS
LLICV1	CCV1	1	1.011	101.11	65-125	PASS
MB-58406	MBLK	1	1.0041	100.41	65-125	PASS
LCS1-58406	LCS	1	1.052	105.22	65-125	PASS
N019639-019B	SAMP	1	0.99	99.094	65-125	PASS
N019639-019B	SAMP	5	0.99	99.025	65-125	PASS
N019639-019B-PS	PS	1	0.99	98.7	65-125	PASS
N019639-019B-MS1	MS	1	0.99	98.73	65-125	PASS
N019639-019B-MSD1	MSD	1	1.0027	100.27	65-125	PASS
N019730-001B	SAMP	1	0.99	98.86	65-125	PASS
N019730-002B	SAMP	1	0.91	90.93	65-125	PASS
N019730-003B	SAMP	1	0.9	89.52	65-125	PASS
CCV1	CCV	1	1.0057	100.57	65-125	PASS
CCB1	CCB	1	1.022	102.17	65-125	PASS
CCV2	CCV	1	0.98	98.22	65-125	PASS
CCB2	CCB	1	1	99.52	65-125	PASS
CCB2	CCB	1	1.0008	100.08	65-125	PASS
CCV3	CCV	1	0.96	96.34	65-125	PASS
CCB3	CCB	1	0.99	99.12	65-125	PASS
CCV4	CCV	1	0.99	98.67	65-125	PASS
CCB4	CCB	1	1	99.89	65-125	PASS
LLCCV1	CCV2	1	1	99.59	65-125	PASS
ICSA2	ICSA	1	1.05	104.99	65-125	PASS
ICSAB2	ICSAB	1	0.81	80.65	65-125	PASS
LLCCV1	CCV2	1	1.0015	100.15	65-125	PASS
ICSA2	ICSA	1	1.049	104.93	65-125	PASS
ICSAB2	ICSAB	1	0.81	80.72	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019730
Test Method: EPA 6010B
Analysis Date: 05/15/16

Matrix: Groundwater
Batch No.: 58406

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

~~Dilution test is not applicable to Na. The calculated concentrations are~~ <25XRL.
DT/ PS failed, however, MS/MSD is within criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019730-001B DT 125X	Sodium	ug/L	297795.3	~~NA~~ Fail	260559.9	14.29%	10

Note: NA - Not Applicable

5/26/2016
for

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N019730
Test Method: EPA 6010B
Analysis Date: 05/23/16

Matrix: Groundwater
Batch No.: 58406

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentrations are <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N019639-019B DT 5X	Calcium	ug/L	122753.8	PASS	115803.1	6.00%	10
N019639-019B DT 5X	Iron	ug/L	41.48924	NA	62.0336	33.12%	11
N019639-019B DT 5X	Magnesium	ug/L	20475.27	PASS	18942.57	8.09%	12

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N019730-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108486**
Client ID: **ZZZZZZ**	Batch ID: **58406**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/15/2016**	SeqNo: **2327980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	286028.269	12000	20000	260600	127	80	120				S

Sample ID **N019639-019B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **108643**
Client ID: **ZZZZZZ**	Batch ID: **58406**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/23/2016**	SeqNo: **2336224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124563.647	500	10000	115800	87.6	80	120				
Iron	184.711	20	100.0	62.03	123	80	120				S
Magnesium	27804.769	100	10000	18940	88.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58428
ASSET #: N019730

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/18/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/25/2016 Date:

2nd Level Reviewer 5/25/2016 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N019730-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 124.94 * 5 * (25/25)

Chromium , ug/L = 624.700000

Reporting results in two significant figures,

Chromium , ug/L = 620

% RSD SUMMARY

PERCENT RSD SUMMARY: 160518A2

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.073	15.23	15	<PQL	0.12	4.41	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.46	1.56	15	PASS	0.49	2.89	15	PASS
Std3-5/50 ppb	ICAL	1	4.85	1.68	15	PASS	4.99	1.9	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	0.99	15	PASS	10.022	3.1	15	PASS
Std5-20/200 ppb	ICAL	1	19.55	1.24	15	PASS	20.2	1.58	15	PASS
Std6-40/400 ppb	ICAL	1	39.62	0.83	15	PASS	40.69	0.67	15	PASS
Std7-100/1000 ppb	ICAL	1	98.66	1.038	15	PASS	100.92	1.41	15	PASS
Std8-200/2000 ppb	ICAL	1	200.8	0.75	15	PASS	199.38	0.28	15	PASS
ICV	ICV	1	10.2	0.64	15	PASS	102.95	0.71	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1	4.73	20	PASS	0.5	7.16	20	PASS
ICSA1	ICSA	1	0.1	5.2	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.92	0.93	15	PASS	20.49	1.33	15	PASS
MB-58428	MBLK	1	0.069	18.18	15	<PQL	0.019	41.83	15	<PQL
LCS-58428	LCS	1	9.33	1.15	15	PASS	96.32	0.3	15	PASS
N019730-001B	SAMP	1	0.23	6.55	15	PASS	291.69	1.33	15	PASS
N019730-001B	SAMP	5	0.027	29.5	15	<PQL	60.37	0.2	15	PASS
N019730-001B-PS	PS	1	9.24	0.95	15	PASS	373.35	0.68	15	PASS
N019730-001B-MS	MS	1	9.18	1.75	15	PASS	362.91	0.73	15	PASS
N019730-001B-MSD	MSD	1	9.045	1.6	15	PASS	360.69	0.74	15	PASS
N019730-002B	SAMP	1	569.56	1.06	15	PASS	12.3	1.7	15	PASS
N019730-003B	SAMP	1	46.84	1.0078	15	PASS	56.11	0.75	15	PASS
CCV1	CCV	1	19.085	0.43	15	PASS	19.74	1.27	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N019741-001B	SAMP	1	1.74	2.41	15	PASS	2267.68	0.57	15	PASS
N019741-002B	SAMP	1	1.75	1.016	15	PASS	2268.35	0.92	15	PASS
N019730-001B	SAMP	25	<0.000	N/A	15	<PQL	12.95	0.84	15	PASS
N019730-001B-PS	PS	5	1.91	1.99	15	PASS	78.61	0.61	15	PASS
N019730-001B-MS	MS	5	1.98	1.6	15	PASS	78.8	0.44	15	PASS
N019730-001B-MSD	MSD	5	1.96	3.59	15	PASS	78.42	0.34	15	PASS
N019730-002B	SAMP	5	124.94	0.59	15	PASS	2.7	2.42	15	PASS
N019741-001B	SAMP	25	0.047	7.68	15	PASS	100.84	0.47	15	PASS
N019741-002B	SAMP	25	0.041	19.12	15	<PQL	101.055	0.12	15	PASS
CCV2	CCV	1	19.075	0.48	15	PASS	19.65	0.2	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	18.92	1.38	15	PASS	19.54	1.83	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.97	1.18	20	PASS	0.5	4.051	20	PASS
ICSA2	ICSA	1	0.11	6.94	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.74	0.56	15	PASS	20.59	0.35	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160518A2

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0518001.D	RINSE	RINSE	1	05/18/16 4:34 PM
A0518002.D	Cal Blank	IBLK	1	05/18/16 4:40 PM
A0518003.D	Std1-0.1/1 ppb	ICAL	1	05/18/16 4:45 PM
A0518004.D	Std2-0.5/5 ppb	ICAL	1	05/18/16 4:51 PM
A0518005.D	Std3-5/50 ppb	ICAL	1	05/18/16 4:56 PM
A0518006.D	Std4-10/100 ppb	ICAL	1	05/18/16 5:02 PM
A0518007.D	Std5-20/200 ppb	ICAL	1	05/18/16 5:07 PM
A0518008.D	Std6-40/400 ppb	ICAL	1	05/18/16 5:13 PM
A0518009.D	Std7-100/1000 ppb	ICAL	1	05/18/16 5:18 PM
A0518010.D	Std8-200/2000 ppb	ICAL	1	05/18/16 5:24 PM
A0518011.D	ICV	ICV	1	05/18/16 5:29 PM
A0518012.D	ICB	ICB	1	05/18/16 5:35 PM
A0518013.D	LLICV	CCV1	1	05/18/16 5:40 PM
A0518014.D	ICSA1	ICSA	1	05/18/16 5:46 PM
A0518015.D	ICSAB1	ICSAB	1	05/18/16 5:51 PM
A0518016.D	N019628-007B	SAMP	1	05/18/16 5:55 PM
A0518017.D	MB-58428	MBLK	1	05/18/16 6:00 PM
A0518018.D	LCS-58428	LCS	1	05/18/16 6:08 PM
A0518019.D	N019730-001B	SAMP	1	05/18/16 6:14 PM
A0518020.D	N019730-001B	SAMP	5	05/18/16 6:19 PM
A0518021.D	N019730-001B-PS	PS	1	05/18/16 6:25 PM
A0518022.D	N019730-001B-MS	MS	1	05/18/16 6:30 PM
A0518023.D	N019730-001B-MSD	MSD	1	05/18/16 6:36 PM
A0518024.D	N019730-002B	SAMP	1	05/18/16 6:41 PM
A0518025.D	N019730-003B	SAMP	1	05/18/16 6:47 PM
A0518026.D	CCV1	CCV	1	05/18/16 6:52 PM
A0518027.D	CCB1	CCB	1	05/18/16 6:58 PM
A0518028.D	N019741-001B	SAMP	1	05/18/16 7:03 PM
A0518029.D	N019741-002B	SAMP	1	05/18/16 7:09 PM
A0518030.D	N019730-001B	SAMP	25	05/18/16 7:14 PM
A0518031.D	N019730-001B-PS	PS	5	05/18/16 7:20 PM
A0518032.D	N019730-001B-MS	MS	5	05/18/16 7:25 PM
A0518033.D	N019730-001B-MSD	MSD	5	05/18/16 7:31 PM
A0518034.D	N019730-002B	SAMP	5	05/18/16 7:36 PM
A0518035.D	N019741-001B	SAMP	25	05/18/16 7:42 PM
A0518036.D	N019741-002B	SAMP	25	05/18/16 7:48 PM
A0518037.D	N019607-010B	SAMP	1	05/18/16 7:53 PM
A0518038.D	CCV2	CCV	1	05/18/16 7:59 PM
A0518039.D	CCB2	CCB	1	05/18/16 8:04 PM
A0518040.D	N019607-010A	SAMP	1	05/18/16 8:10 PM
A0518041.D	N019611-012B	SAMP	1	05/18/16 8:15 PM
A0518042.D	N019611-012A	SAMP	1	05/18/16 8:21 PM

INJECTION LOG: 160518A2

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0518043.D	N019639-015B	SAMP	1	05/18/16 8:26 PM
A0518044.D	N019639-015A	SAMP	1	05/18/16 8:32 PM
A0518045.D	CCV3	CCV	1	05/18/16 8:37 PM
A0518046.D	CCB3	CCB	1	05/18/16 8:43 PM
A0518047.D	LLCCV1	CCV2	1	05/18/16 8:48 PM
A0518048.D	ICSA2	ICSA	1	05/18/16 8:54 PM
A0518049.D	ICSAB2	ICSAB	1	05/18/16 8:59 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/16/2016 6:58:51 A**
Prep End Date: **5/16/2016 11:30:00**
Initials/ Date: 5/25/2016

Prep Batch **58428** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.6**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58428	Aqueous		25	☐	0	0	25	1.000		
MB-58428	Aqueous		25	☐	0	0	25	1.000		
N019730-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019730-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019730-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N019730-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N019730-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N019741-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N019741-002B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-151207	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 18 May 2016 10:00:25 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	104986.00	0.00	
24 Mg	323048.00	0.00	
25 Mg	42925.50	0.00	
26 Mg	49675.90	0.00	
59 Co	508018.00	0.00	
115 In	891813.00	0.00	
206 Pb	285638.00	0.00	
207 Pb	248896.00	0.00	
208 Pb	614478.00	0.00	

RSD (%)

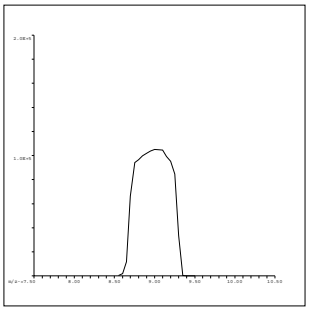
Element	Actual	Required	Flag
9 Be	0.49	5.00	
24 Mg	0.56	5.00	
25 Mg	1.31	5.00	
26 Mg	1.45	5.00	
59 Co	0.50	5.00	
115 In	0.57	5.00	
206 Pb	0.38	5.00	
207 Pb	0.53	5.00	
208 Pb	0.68	5.00	

Ion Ratio

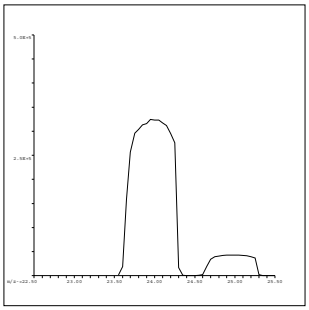
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

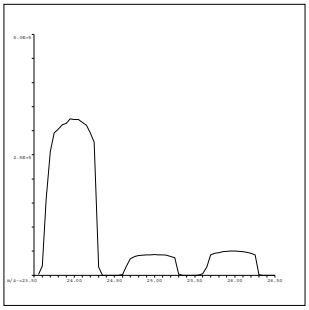
Element	Actual	Required	Flag



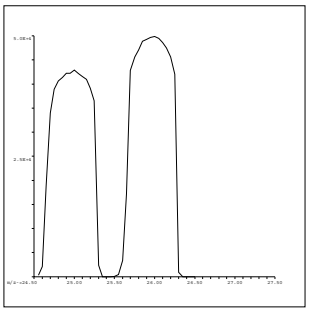
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



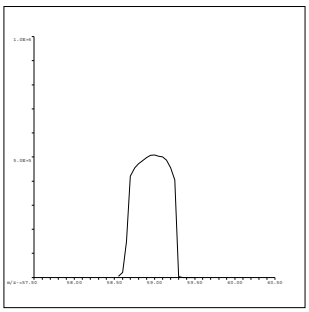
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



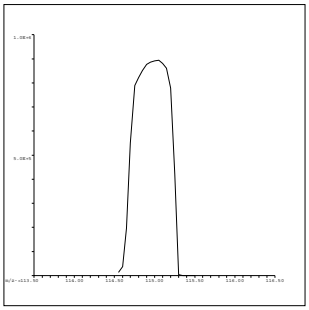
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



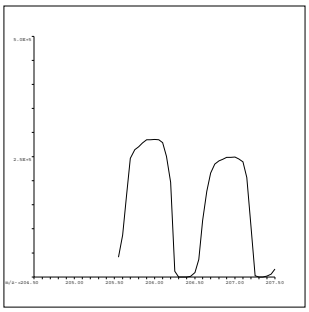
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



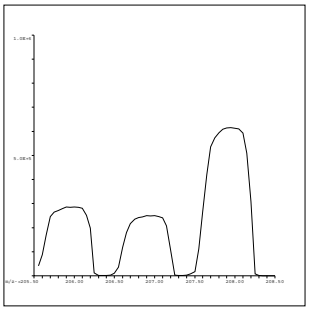
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



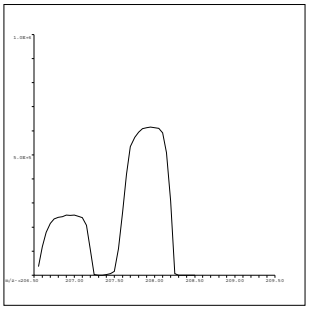
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160518A2

Instrument ID: ICPMS-02

Analyte	Data File	A0518002.D	A0518004.D	A0518005.D	A0518006.D	A0518007.D	A0518008.D	A0518009.D	A0518010.D	
	Acq. Date-Time	05/18/2016 04:40 PM	05/18/2016 04:51 PM	05/18/2016 04:56 PM	05/18/2016 05:02 PM	05/18/2016 05:07 PM	05/18/2016 05:13 PM	05/18/2016 05:18 PM	05/18/2016 05:24 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	141065.1	135853.4	131223.6	126171.7	118719.3	110108.5	106063.7	105703.4	
55 Mn [2]	CPS	384.1	3080.8	27205.4	52197.9	98674.8	184083.1	439380.3	864848.1	1.0000
52 Cr [2]	CPS	1399.8	6173.3	50873.5	97742.5	182109.6	341149.4	816760.5	1655583.6	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **ICV**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	102.948	0.50	100.0	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **ZZZZZZ**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.498	0.50	0.5000	0	99.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **CCV**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.743	0.50	20.00	0	98.7	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **CCV**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.650	0.50	20.00	0	98.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **CCV**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.536	0.50	20.00	0	97.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **ZZZZZZ**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.505	0.50	0.5000	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICV	SampType:	ICV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	ICV	Batch ID:	R108595	TestNo:	EPA 6020			Analysis Date:	5/18/2016	SeqNo:	2333655

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.196	1.0	10.00	0	102	90	110				

Sample ID	LLICV	SampType:	CCV1	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	ZZZZZZ	Batch ID:	R108595	TestNo:	EPA 6020			Analysis Date:	5/18/2016	SeqNo:	2333657

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.999	1.0	1.000	0	99.9	80	120				

Sample ID	CCV1	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	CCV	Batch ID:	R108595	TestNo:	EPA 6020			Analysis Date:	5/18/2016	SeqNo:	2333670

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.085	1.0	20.00	0	95.4	90	110				

Sample ID	CCV2	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	CCV	Batch ID:	R108595	TestNo:	EPA 6020			Analysis Date:	5/18/2016	SeqNo:	2333682

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.075	1.0	20.00	0	95.4	90	110				

Sample ID	CCV3	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	CCV	Batch ID:	R108595	TestNo:	EPA 6020			Analysis Date:	5/18/2016	SeqNo:	2333689

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.921	1.0	20.00	0	94.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108595**
Client ID: **ZZZZZZ**	Batch ID: **R108595**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.971	1.0	1.000	0	97.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **ICB**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **CCB**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **CCB**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **CCB**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108595**
Client ID: **ICB**	Batch ID: **R108595**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108595**
Client ID: **CCB**	Batch ID: **R108595**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108595**
Client ID: **CCB**	Batch ID: **R108595**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108595**
Client ID: **CCB**	Batch ID: **R108595**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **ICSA**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **ICSAB**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.485	0.50	20.00	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **ICSA**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID: **ICSAB**	Batch ID: **R108596**	TestNo: **EPA 6020**		Analysis Date: **5/18/2016**	SeqNo: **2333771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.586	0.50	20.00	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	ICSA	Batch ID:	R108595	TestNo:	EPA 6020			Analysis Date:	5/18/2016	SeqNo:	2333658

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.103	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	ICSAB	Batch ID:	R108595	TestNo:	EPA 6020			Analysis Date:	5/18/2016	SeqNo:	2333659

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.920	1.0	20.00	0	94.6	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	ICSA	Batch ID:	R108595	TestNo:	EPA 6020			Analysis Date:	5/18/2016	SeqNo:	2333692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.112	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	ICSAB	Batch ID:	R108595	TestNo:	EPA 6020			Analysis Date:	5/18/2016	SeqNo:	2333693

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.736	1.0	20.00	0	93.7	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160518A2

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	141065.1	141065.1	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	140562.6	141065.1	99.64	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	135853.4	141065.1	96.31	PASS	70-130
Std3-5/50 ppb	ICAL	1	131223.6	141065.1	93.023	PASS	70-130
Std4-10/100 ppb	ICAL	1	126171.7	141065.1	89.44	PASS	70-130
Std5-20/200 ppb	ICAL	1	118719.3	141065.1	84.16	PASS	70-130
Std6-40/400 ppb	ICAL	1	110108.5	141065.1	78.055	PASS	70-130
Std7-100/1000 ppb	ICAL	1	106063.7	141065.1	75.19	PASS	70-130
Std8-200/2000 ppb	ICAL	1	105703.4	141065.1	74.93	PASS	70-130
ICV	ICV	1	112246.9	141065.1	79.57	PASS	70-130
ICB	ICB	1	111431.3	141065.1	78.99	PASS	70-130
LLICV	CCV1	1	109668.3	141065.1	77.74	PASS	70-130
ICSA1	ICSA	1	127354.7	141065.1	90.28	PASS	70-130
ICSAB1	ICSAB	1	136612.2	141065.1	96.84	PASS	70-130
MB-58428	MBLK	1	142007.2	141065.1	100.67	PASS	70-130
LCS-58428	LCS	1	126557.7	141065.1	89.72	PASS	70-130
N019730-001B	SAMP	1	112354.2	141065.1	79.65	PASS	70-130
N019730-001B	SAMP	5	117883.8	141065.1	83.57	PASS	70-130
N019730-001B-PS	PS	1	108999.3	141065.1	77.27	PASS	70-130
N019730-001B-MS	MS	1	112699.7	141065.1	79.89	PASS	70-130
N019730-001B-MSD	MSD	1	115380	141065.1	81.79	PASS	70-130
N019730-002B	SAMP	1	106418.5	141065.1	75.44	PASS	70-130
N019730-003B	SAMP	1	107425.8	141065.1	76.15	PASS	70-130
CCV1	CCV	1	140763	141065.1	99.79	PASS	70-130
CCB1	CCB	1	140384.5	141065.1	99.52	PASS	70-130
N019741-001B	SAMP	1	129194.8	141065.1	91.59	PASS	70-130
N019741-002B	SAMP	1	123618.7	141065.1	87.63	PASS	70-130
N019730-001B	SAMP	25	121235.2	141065.1	85.94	PASS	70-130
N019730-001B-PS	PS	5	115145.1	141065.1	81.63	PASS	70-130
N019730-001B-MS	MS	5	109840.7	141065.1	77.87	PASS	70-130
N019730-001B-MSD	MSD	5	106608.4	141065.1	75.57	PASS	70-130
N019730-002B	SAMP	5	104186.9	141065.1	73.86	PASS	70-130
N019741-001B	SAMP	25	103598.7	141065.1	73.44	PASS	70-130
N019741-002B	SAMP	25	100700	141065.1	71.39	PASS	70-130
CCV2	CCV	1	143464.6	141065.1	101.7	PASS	70-130
CCB2	CCB	1	129935.7	141065.1	92.11	PASS	70-130
CCV3	CCV	1	148036	141065.1	104.94	PASS	70-130
CCB3	CCB	1	141725.6	141065.1	100.47	PASS	70-130
LLCCV1	CCV2	1	140641.6	141065.1	99.7	PASS	70-130
ICSA2	ICSA	1	145666.6	141065.1	103.26	PASS	70-130
ICSAB2	ICSAB	1	151835.6	141065.1	107.64	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N019639
Test Method: EPA 6020
Analysis Date: 5/16/2016

Matrix: Groundwater
Batch No.: 58428

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N019730-001B DT 5X	Chromium	ug/L	0.133121	NA	0.229102	41.89%	10
N019730-001B DT 25X	Manganese	ug/L	323.6276	PASS	301.85	7.21%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N019730-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108596**
Client ID:	**ZZZZZZ**	Batch ID: **58428**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2016**	SeqNo: **2333753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	393.065	2.5	100.0	301.8	91.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N019730
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N019730-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	108595
Client ID:	ZZZZZZ	Batch ID:	58428	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2016	SeqNo:	2333665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.240	1.0	10.00	0.2291	90.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Detection Limit
Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

ACCEPTANCE CRITERIA: MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	MDL*10	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0313	0.3133	0.3000	0.187	0.50	0.515	103
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0248	0.2485	0.3000	0.049	0.10	0.103	103
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699	0.6986	0.3000	0.403	1.00	1.245	125
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0430	0.4304	0.3000	0.185	0.50	0.524	105
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0473	0.4734	0.3000	0.174	0.50	0.501	100
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0192	0.1925	0.3000	0.321	1.00	0.973	97
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263	0.2630	0.3000	0.163	0.50	0.475	95
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2626	2.6262	0.3000	0.328	1.00	1.062	106
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7517	7.5170	0.3000	0.605	10.00	11.338	113
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367	0.3670	0.3000	0.343	1.00	1.018	102
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0554	0.5543	0.3000	0.193	0.50	0.605	121
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0385	0.3853	0.3000	0.247	0.50	0.660	132
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0395	0.3954	0.3000	0.341	1.00	1.002	100
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276	0.2760	0.3000	0.170	0.50	0.502	100
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590	0.5899	0.3000	0.247	1.00	1.029	103
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296	0.2961	0.3000	0.186	0.50	0.549	110
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0327	0.3272	0.3000	0.181	0.50	0.533	107
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213	0.2133	0.3000	0.221	1.00	0.873	87
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2678	2.6780	0.3000	3.286	10.00	10.085	101

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.801A

ASSET Laboratories Work Order: N020008

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N020008

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-37
Sample Receiving Items	38-42
List of Analysts	43
Raw Data	
EPA 120.1	44-47
SM 4500 H+B	48-51
SM 2540C	52-61
EPA 218.6	62-123
SM 2320B	124-133
EPA 300	134-160
SM 3500-Cr B	161-173
SM 4500-NO3F	174-188
EPA 6010B_Dissolved	189-226
EPA 6020_Dissolved	227-262

June 23, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N020008

RE: PG&E Topock - PMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 07, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *23-Jun-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N020008

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N020008-001B-MS1 and N020008-001B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

Date: *23-Jun-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N020008
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N020008-001A	PE-01-0616	Groundwater	6/7/2016 8:35:00 AM	6/7/2016	6/23/2016
N020008-001B	PE-01-0616	Groundwater	6/7/2016 8:35:00 AM	6/7/2016	6/23/2016
N020008-001C	PE-01-0616	Groundwater	6/7/2016 8:35:00 AM	6/7/2016	6/23/2016
N020008-001D	PE-01-0616	Groundwater	6/7/2016 8:35:00 AM	6/7/2016	6/23/2016
N020008-002A	TW-03D-0616	Groundwater	6/7/2016 8:45:00 AM	6/7/2016	6/23/2016
N020008-002B	TW-03D-0616	Groundwater	6/7/2016 8:45:00 AM	6/7/2016	6/23/2016
N020008-002C	TW-03D-0616	Groundwater	6/7/2016 8:45:00 AM	6/7/2016	6/23/2016
N020008-002D	TW-03D-0616	Groundwater	6/7/2016 8:45:00 AM	6/7/2016	6/23/2016

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CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160608E**	QC Batch: **R108876**			PrepDate			Analyst: **LR**
Specific Conductance	3700	0.10	0.10		umhos/cm	1	6/8/2016 01:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160608E**	QC Batch: **R108876**			PrepDate			Analyst: **LR**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	6/8/2016 01:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N020008-002CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **108876**
Client ID: **ZZZZZZ** Batch ID: **R108876** TestNo: **EPA 120.1** Analysis Date: **6/8/2016** SeqNo: **2348013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7320.000	0.10						7350	0.409	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160608B**	QC Batch: **R108870**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	6/8/2016 12:22 PM
Temp. at time of pH Analysis	26	0.10	0.10	H	°C	1	6/8/2016 12:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160608B**	QC Batch: **R108870**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	6/8/2016 12:22 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/8/2016 12:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N020008-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **108870**
Client ID: **ZZZZZZ** Batch ID: **R108870** TestNo: **SM4500-H+B** Analysis Date: **6/8/2016** SeqNo: **2347923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.570	0.10						7.520	0.663	10	H
Temp. at time of pH Analysis	25.300	0.10						25.50	0.787	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160608F**	QC Batch: **58671**				PrepDate	**6/8/2016**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2200	25	25		mg/L	1	6/8/2016 01:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160608F**	QC Batch: **58671**				PrepDate	**6/8/2016**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	6/8/2016 01:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-58671**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2016**	RunNo: **108888**
Client ID: **LCSW**	Batch ID: **58671**	TestNo: **SM2540C**		Analysis Date: **6/8/2016**	SeqNo: **2348318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	968.000	10	1000	0	96.8	80	120				

Sample ID **MBLK-58671**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2016**	RunNo: **108888**
Client ID: **PBW**	Batch ID: **58671**	TestNo: **SM2540C**		Analysis Date: **6/8/2016**	SeqNo: **2348319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N020006-002ADUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2016**	RunNo: **108888**
Client ID: **ZZZZZZ**	Batch ID: **58671**	TestNo: **SM2540C**		Analysis Date: **6/8/2016**	SeqNo: **2348323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4455.000	50						4555	2.22	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160608A**	QC Batch: **R108868**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	0.83	0.066	0.20		µg/L	1	6/8/2016 02:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160609B**	QC Batch: **58656**			PrepDate	**6/8/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	6/9/2016 11:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_160616C**	QC Batch: **R108989**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	630	2.8	20		µg/L	2	6/16/2016
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **ICP7_160609B**	QC Batch: **58656**			PrepDate	**6/8/2016**		Analyst: **CEI**
Chromium	610	0.096	5.0		µg/L	5	6/9/2016 12:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R108868**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **PBW**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347885**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R108868**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **LCSW**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347886**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.159	0.20	5.000	0	103	90	110				

Sample ID **N020007-001BDUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347888**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	617.960	20						615.3	0.436	20	

Sample ID **N020007-001BMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347889**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1140.210	20	500.0	615.3	105	90	110				

Sample ID **N020007-001BMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347890**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1134.360	20	500.0	615.3	104	90	110	1140	0.514	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N020008-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108868
Client ID:	ZZZZZZ	Batch ID:	R108868	TestNo:	EPA 218.6			Analysis Date:	6/8/2016	SeqNo:	2347894

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.840	0.20	1.000	0.8271	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	LCS-R108989	SampType:	LCS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	LCSW	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353617

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	101.524	10	100.0	0	102	85	115				

Sample ID	MB-R108989	SampType:	MBLK	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	PBW	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353618

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID	N020006-002DDUP	SampType:	DUP	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	ZZZZZZ	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353621

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	626.312	20						623.1	0.518	20	

Sample ID	N020008-002AMS	SampType:	MS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	ZZZZZZ	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353623

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	814.594	20	200.0	625.9	94.4	85	115				

Sample ID	N020008-002AMSD	SampType:	MSD	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	ZZZZZZ	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	819.882	20	200.0	625.9	97.0	85	115	814.6	0.647	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-58656	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2016	RunNo:	108878
Client ID:	PBW	Batch ID:	58656	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2016	SeqNo:	2348711

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.039	1.0									

Sample ID	LCS-58656	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2016	RunNo:	108878
Client ID:	LCSW	Batch ID:	58656	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2016	SeqNo:	2348712

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.050	1.0	10.00	0	100	85	115				

Sample ID	N020009-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2016	RunNo:	108878
Client ID:	ZZZZZZ	Batch ID:	58656	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2016	SeqNo:	2348716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.443	1.0	10.00	0	94.4	75	125				

Sample ID	N020009-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2016	RunNo:	108878
Client ID:	ZZZZZZ	Batch ID:	58656	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2016	SeqNo:	2348717

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.420	1.0	10.00	0	94.2	75	125	9.443	0.241	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160608D**	QC Batch: **R108873**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	6/8/2016 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160608D**	QC Batch: **R108873**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	6/8/2016 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R108873**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **LCSW**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347955**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R108873**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **PBW**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347956**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N020006-001ADUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **ZZZZZZ**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347958**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	224.900	5.0						228.9	1.77	30	

Sample ID **N020006-002AMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **ZZZZZZ**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347960**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	263.052	5.0	100.0	156.6	106	75	125				

Sample ID **N020006-002AMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **ZZZZZZ**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347961**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	265.060	5.0	100.0	156.6	108	75	125	263.1	0.760	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160608A** QC Batch: **R108880**			PrepDate				Analyst: **QBM**
Chloride	910	3.9	100		mg/L	200	6/8/2016 03:35 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160608A** QC Batch: **R108880**			PrepDate				Analyst: **QBM**
Sulfate	340	3.3	25		mg/L	50	6/8/2016 03:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160608A**	QC Batch: **R108880**			PrepDate			Analyst: **QBM**
Chloride	2100	9.7	250		mg/L	500	6/8/2016 04:37 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160608A**	QC Batch: **R108880**			PrepDate			Analyst: **QBM**
Sulfate	490	6.6	50		mg/L	100	6/8/2016 03:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R108880_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	PBW	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348101

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R108880_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	LCSW	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348102

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.535	0.50	2.500	0	101	90	110				

Sample ID	N020006-001ADUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	871.200	100						844.8	3.08	20	

Sample ID	N020006-002AMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348108

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3378.000	250	1250	2096	103	80	120				

Sample ID	N020006-002AMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3452.500	250	1250	2096	109	80	120	3378	2.18	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R108880_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	PBW	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348120

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R108880_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	LCSW	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348121

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.951	0.50	5.000	0	99.0	90	110				

Sample ID	N020006-001ADUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	339.700	25						331.6	2.41	20	

Sample ID	N020006-002AMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348125

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	982.100	50	500.0	495.1	97.4	80	120				

Sample ID	N020006-002AMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	949.900	50	500.0	495.1	91.0	80	120	982.1	3.33	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160620A**	QC Batch: **R109043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	6/20/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160620A**	QC Batch: **R109043**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	6/20/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R109043	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	PBW	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355604

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R109043	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	LCSW	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.7	85	115				

Sample ID	N020006-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	ZZZZZZ	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355607

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.024	0.050						0.02590	0	20	

Sample ID	N020006-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	ZZZZZZ	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355608

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.573	0.050	0.5000	0.02590	110	75	125				

Sample ID	N020006-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	ZZZZZZ	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355609

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.567	0.050	0.5000	0.02590	108	75	125	0.5734	1.12	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160620C**	QC Batch: **58740**			PrepDate	**6/15/2016**		Analyst: **CEI**
Calcium	120000	28	500		ug/L	1	6/20/2016 01:55 PM
Iron	ND	1.8	20		ug/L	1	6/20/2016 01:55 PM
Magnesium	26000	4.4	100		ug/L	1	6/20/2016 01:55 PM
Sodium	680000	290	12000		ug/L	25	6/20/2016 04:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_160620C**	QC Batch: **58740**			PrepDate	**6/15/2016**	Analyst: **CEI**	
Calcium	200000	28	500		ug/L	1	6/20/2016 02:00 PM
Iron	ND	1.8	20		ug/L	1	6/20/2016 02:00 PM
Magnesium	25000	4.4	100		ug/L	1	6/20/2016 02:00 PM
Sodium	1400000	580	25000		ug/L	50	6/20/2016 04:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-58740**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/15/2016**	RunNo: **109035**
Client ID: **PBW**	Batch ID: **58740**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/20/2016**	SeqNo: **2355256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	32.824	500									
Iron	8.631	20									
Magnesium	9.413	100									

Sample ID **LCS1-58740**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/15/2016**	RunNo: **109035**
Client ID: **LCSW**	Batch ID: **58740**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/20/2016**	SeqNo: **2355257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9847.448	500	10000	0	98.5	85	115				
Iron	97.542	20	100.0	0	97.5	85	115				
Magnesium	10260.843	100	10000	0	103	85	115				

Sample ID **N020008-001B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/15/2016**	RunNo: **109035**
Client ID: **ZZZZZZ**	Batch ID: **58740**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/20/2016**	SeqNo: **2355262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124833.486	500	10000	119900	49.1	75	125				S
Iron	111.360	20	100.0	0	111	75	125				
Magnesium	34582.825	100	10000	26120	84.6	75	125				

Sample ID **N020008-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/15/2016**	RunNo: **109035**
Client ID: **ZZZZZZ**	Batch ID: **58740**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/20/2016**	SeqNo: **2355263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124988.986	500	10000	119900	50.6	75	125	124800	0.124	20	S
Iron	112.159	20	100.0	0	112	75	125	111.4	0.715	20	
Magnesium	34604.918	100	10000	26120	84.8	75	125	34580	0.0639	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-58740	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/15/2016	RunNo:	109039
Client ID:	PBW	Batch ID:	58740	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/20/2016	SeqNo:	2355492

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-58740	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/15/2016	RunNo:	109039
Client ID:	LCSW	Batch ID:	58740	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/20/2016	SeqNo:	2355493

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19681.286	500	20000	0	98.4	85	115				

Sample ID	N020008-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/15/2016	RunNo:	109039
Client ID:	ZZZZZZ	Batch ID:	58740	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/20/2016	SeqNo:	2355506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1456030.586	25000	20000	1433000	115	75	125				

Sample ID	N020008-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/15/2016	RunNo:	109039
Client ID:	ZZZZZZ	Batch ID:	58740	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/20/2016	SeqNo:	2355507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1455036.831	25000	20000	1433000	110	75	125	1456000	0.0683	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160609B**	QC Batch: **58656**			PrepDate	**6/8/2016**		Analyst: **CEI**
Manganese	72	0.056	0.50		µg/L	1	6/9/2016 11:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160609B**	QC Batch: **58656**			PrepDate	**6/8/2016**		Analyst: **CEI**
Manganese	12	0.056	0.50		µg/L	1	6/9/2016 11:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-58656**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2016**	RunNo: **108878**
Client ID: **PBW**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-58656**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2016**	RunNo: **108878**
Client ID: **LCSW**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.071	0.50	100.0	0	98.1	85	115				

Sample ID **N020009-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2016**	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	133.701	0.50	100.0	38.75	95.0	75	125				

Sample ID **N020009-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2016**	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	134.142	0.50	100.0	38.75	95.4	75	125	133.7	0.329	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		1. Chilled		
	Email: dan.bush@arcadis.com; daniel.moore@arcadis.com	Address:	Geotracker		RWQCB	✓	2. Headspace		
Address: Roseville, CA 95661	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	Labspec		CalTrans		3. Container Intact		
Phone: 916-786-3302 Fax:	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Others	✓	LEVEL III		4. Seal Present		
Submitted By: Gary Clift		P.O.#	Specify: RWQCB		LEVEL IV		5. IR number: 2		
Title: SR. Technician		Global ID:			Regulatory		6. Method of Cooling: ICE		
Signature: Date: 6/7/16	Sampled By: GARY CLIFT				Specify State: CA		Sample Temp: 2.0°C		

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

I hereby authorize ASSET Labs to perform the tests indicated below

Project Name: PG&E Topock - PMP
Project Number: RC000753.801A
Signature: Date: 6/7/16

Matrix: Ground x | Potable | NPDES | Surface; Sediment x | Soil | Other Solid

Courier:
Tracking No.

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4, OH	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6020A) FF: HNO3 500 mL poly Cr	Dissolved metals (SW6010B/SW6020Ads) FF: HNO3 Ca, Mg, Mn, Fe, Na	Dissolved metals (SW6010B/SW6020Ads) FF: HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B): HNO3 Fe	Anions (E300.0): Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate; H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						250 mL poly	250 mL poly	1 L poly	1 L poly	1 L poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly					
1	N020008 - 01	PE-01-0616	6/7/2016	935		X		X	X			X	X	X	X	X		X	E	4	P	BN	
2	- 02	TW-03D-0616	6/7/2016	945			X	X	X			X	X	X	X	X		X	E	4	P	BN	
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reliquished by (Signature and Printed Name): Date/Time: 6/7/16 1520
Reliquished by (Signature and Printed Name): Date/Time: 6/7/16 PM
Reliquished by (Signature and Printed Name): Date/Time:

Reliquished by (Signature and Printed Name): Date/Time: 6/7/16 1520
Reliquished by (Signature and Printed Name): Date/Time: 6/7/16 1730
Reliquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
Regular TAT is 5-7 business days surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
Custom EDD formats will be an additional 5% of the total project price
Add 10% surcharge for Level III Data Packages 15% for Level IV Data Packages Surcharge applies on total project price

5 Trip Blanks and Equipment Blanks are billable sample
6 Asset Laboratories is not responsible for samples collected using incorrect methodology
7 Terms are net 30 days
8 All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9 For subcontract analyses TAT and Surcharges will vary

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	6/7/2016	Workorder:	N020008
Rep sample Temp (Deg C):	2.3	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for pH was passed holding time upon receipt.

Checklist Completed By: HG For: 6/8/16

Reviewed By: 06/08/16

ASSET Laboratories

WORK ORDER Summary

08-Jun-16

WorkOrder: N020008

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 6/7/2016

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N020008-001A	PE-01-0616	6/7/2016 8:35:00 AM	6/21/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	JJS
N020008-001B			6/21/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/21/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N020008-001C			6/21/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LR
			6/21/2016		SM4500-H+B	pH	☐	☐	☐	LR
			6/21/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LR
			6/21/2016			Total Dissolved Solids Prep	☐	☐	☐	LR
			6/21/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LR
			6/21/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LR
			6/21/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LR
			6/21/2016		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LR
N020008-001D			6/21/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N020008-002A	TW-03D-0616	6/7/2016 8:45:00 AM	6/21/2016		SM 3500-Cr B	HEXAVALENT CHROMIUM	☐	☐	☐	WW
N020008-002B			6/21/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/21/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N020008-002C			6/21/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LR

ASSET Laboratories

WORK ORDER Summary

08-Jun-16

WorkOrder: N020008

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 6/7/2016

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N020008-002C	TW-03D-0616	6/7/2016 8:45:00 AM	6/21/2016	Groundwater	SM4500-H+B	pH	☐	☐	☐	LR
			6/21/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LR
			6/21/2016			Total Dissolved Solids Prep	☐	☐	☐	LR
			6/21/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LR
			6/21/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LR
			6/21/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LR
			6/21/2016		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LR
N020008-002D			6/21/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N020008-003A	FOLDER		6/21/2016		EDD	RWQCB	☐	☐	☐	LAB
			6/21/2016		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N020008**

NAME	TEST METHOD
Jannette Soria	EPA 218.6
Claire Ignacio	EPA 6020_Dissolved, EPA 6010B_Dissolved
Ryan Balilu	SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 4500 H+B, SM 2540C, SM 2320B
Quennie Manimtim	SM 3500-Cr B , EPA 300

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108876 **Analyst:** LSR

ASSET #: N020008 **Date Analyzed:** 6/8/2016

Method: EAPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 6/9/2016

2nd Level Reviewer [signature] Date: 6/21/2016

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 6/8/16 1355

Analyst: ISE

Standard	Std ID	Reading	Comments
1413 µS/cm	CINV - 160111A	1415 µS/cm @ 28.2°C	% Rec: (90-110%)
1412	151012A	1415 @ 28.3°C	
9992	160111B	9920 @ 28.4°C	
100005	160322B	98100 @ 28.5°C	

	Sample ID	Matrix	Reading	Comments
1	NO2000 6 - 001A	Naka	3620 µS/cm @ 27.9°C	
2	2A		7450 @ 27.9°C	
3	NO2000 7 - 001A		7420 @ 27.5°C	
4	2A		7150 @ 27.9°C	
5	NO2000 8 - 001C		3700 @ 27.2°C	
6	2C		7350 @ 27.8°C	
7	2C DUP		7230 @ 27.2°C	
8				
9	1413 µS/cm	CINV - 160111E	1424 µS/cm @ 27.4	
10	100005	150909A	10470 @ 27.5°C	
Dup	99993	151120A	100500 @ 27.7°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Silvia Ramit 6/9/2016

Date:

Analyst:

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500 H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108870 **Instrument ID:** pH meter

ASSET #: N020008 **Analyst:** LSR

Date Analyzed: 6/8/2016

Method: EPA 150.1

pH Meter Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 6/9/2016

2nd Level Reviewer [signature] Date: 6/22/2016

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 6/3/16 910

Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CINV-160322A	4.02 @ 24.9°C	SLOPE: 99.1%
Buffer 7	160309A	7.02 @ 25.0°C	
Buffer 10	160111D	10.02 @ 24.5°C	

	Sample ID	Matrix	pH	Comments
1	ND19959-001B	Water	7.44 @ 17.2°C	
2	2B		7.15 @ 17.3°C	
3	3B		7.21 @ 17.1°C	
4	4B		7.25 @ 17.7°C	
5	5B		7.32 @ 17.0°C	
6	6B		7.14 @ 17.3°C	
7	7B		7.19 @ 17.7°C	
8	8B		7.14 @ 17.9°C	
9	9B		7.34 @ 18.6°C	
10	10B		7.26 @ 18.5°C	
Dup	1B DUP		7.45 @ 17.4°C	Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CINV-160111C	7.05 @ 24.5°C	Accept: +/-0.1 pH units from expected value

Date: 6/8/16 1222

Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CINV-160322A	4.02 @ 27.7°C	SLOPE: 98.4%
Buffer 7	160309A	7.01 @ 27.6°C	
Buffer 10	160111D	10.00 @ 27.6°C	

	Sample ID	Matrix	pH	Comments
1	ND20008-001C	H2O	7.52 @ 25°C	
2	1C DUP		7.57 @ 25.3°C	
3	2C		7.30 @ 25.2°C	
4				
5				
6				
7				
8				
9				VKR 6/8/16
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CINV-160111C	7.05 @ 27.5°C	Accept: +/-0.1 pH units from expected value

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58671 **Analyst:** LSR

ASSET #: N020008 **Date Analyzed:** 6/8/2016

Method: EAPA 160.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 6/9/2016

2nd Level Reviewer: jas Date: 6/16/2016

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N020008-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(76.7711–76.6836)*1000000}{40}$$

=2187.5 mg/L

Reporting result in two significant figures,

TDS = 2200 mg/L

Julia Ramit 6/9/2016

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 6/8/2016 1:44:40 P
Prep End Date:

Initials/ Date: Lilia Ramit 6/9/2016

Prep Batch 58671 Prep Code: 160.1_W_PRE Technician: Lilia Ramit

Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58671	Water	INITIAL	100	☐	0	0	100	1.000		
MB-58671	Water		100	☐	0	0	100	1.000		
N019977-004B	Water	4980	100 /30	☐	0	0	100	1.000		
N020006-001A	Water	3630	100 /40	☐	0	0	100	1.000		
N020006-002A	Water	7450	100 /20	☐	0	0	100	1.000		
N020006-002A-DU	Water	1	100 /20	☐	0	0	100	1.000		
N020007-001A	Water	7430	100 /20	☐	0	0	100	1.000		
N020007-002A	Water	7150	100 /20	☐	0	0	100	1.000		
N020008-001C	Groundwater	3700	100 /40	☐	0	0	100	1.000		
N020008-002C	Groundwater	7350	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

#8394
#8395

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/8/2016 1:44:40 P**
Prep End Date: **6/9/2016 11:25:00 A**
Initials/ Date: Lilia Ramit 6/9/2016

Prep Batch **58671** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58671	Water		100	☐	0	0	100	1.000		
MB-58671	Water		100	☐	0	0	100	1.000		
N019977-004B	Water		30	☐	0	0	100	3.333		
N020006-001A	Water		40	☐	0	0	100	2.500		
N020006-002A	Water		20	☐	0	0	100	5.000		
N020006-002A-DU	Water		20	☐	0	0	100	5.000		
N020007-001A	Water		20	☐	0	0	100	5.000		
N020007-002A	Water		20	☐	0	0	100	5.000		
N020008-001C	Groundwater		40	☐	0	0	100	2.500		
N020008-002C	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8394	Glass Fiber Filter, 47mm
8395	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160601A	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/8/16 1344 LR	MB 58671	100	77.1377 77.1374	77.1373 77.1375	
LR	LCS 58671	100	74.6886 74.6885	74.7850 74.7853	
LR	NO19977-004B	30	76.7583 76.7581	76.8973 76.8973	
LR	NO20006-001A	40	76.5789 76.5793	76.6663 76.6660	
BC	2A	20	62.3824 62.3825	62.4783 62.4736	
DMA	2A DUP	20	54.7306 54.7306	54.8197 54.8197	
RR	NO20007-001A	20	63.9015 63.9016	63.9906 63.9910	
34	2A	20	63.3554 63.3556	63.4379 63.4380	
41	NO20008-001C	40	76.6834 76.6836	76.7707 76.7711	
21	2C	20	55.0121 55.0123	55.1002 55.1005	

Julia Ramit 6/9/2016

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
6/9/2016									
MBLK-58671	100	77.1374	77.1375	1	1	1			MBLK
LCS-58671	100	74.6885	74.7853	968	1	968			LCS
N019977-004B	30	76.7581	76.8973	1392	3.33333333	4640	4980	0.932	SAMP
N020006-001A	40	76.5793	76.666	867	2.5	2167.5	3630	0.597	SAMP
N020006-002A	20	62.3825	62.4736	911	5	4555	7450	0.611	SAMP
N020006-002ADUP	20	54.7306	54.8197	891	5	4455	7450	0.598	DUP
N020007-001A	20	63.9016	63.991	894	5	4470	7430	0.602	SAMP
N020007-002A	20	63.3556	63.438	824	5	4120	7150	0.576	SAMP
N020008-001C	40	76.6836	76.7711	875	2.5	2187.5	3700	0.591	SAMP
N020008-002C	20	55.0123	55.1005	882	5	4410	7350	0.600	SAMP

Julia Ramit 6/9/2016

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108868
ASSET #: N020008

Instrument ID: IC-07
Analyst: JAS
Date Analyzed: 6/8/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X		~~X~~			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	~~X~~					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 6/9/2016

2nd Level Reviewer 6/22/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = μg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N020008-001A** concentration in μg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.8271 * 1$$

$$= 0.8271$$

Reporting result in two significant figures,

Cr^{+6}, μg/L = 0.83

ANALYSIS RUN LOG

INJECTION LOG: 160526A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:41 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:52 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 10:01 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/26/16 10:11 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:20 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:30 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:39 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:49 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:58 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 11:08 AM	Reported
11	ICV	ICV	1	Hexavalent Chromium	05/26/16 11:19 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/26/16 11:31 AM	Reported
13	ICB	ICB	1	Hexavalent Chromium	05/26/16 11:40 AM	Reported
14	MB-R108684	MBLK	1	Hexavalent Chromium	05/26/16 11:50 AM	Reported
15	LCS-R108684	LCS	1	Hexavalent Chromium	05/26/16 11:59 AM	Reported
16	N019899-001A	SAMP	1	Hexavalent Chromium	05/26/16 12:09 PM	Reported
17	N019899-001ADUP	DUP	1	Hexavalent Chromium	05/26/16 12:18 PM	Reported
18	N019899-001AMS	MS	1	Hexavalent Chromium	05/26/16 12:28 PM	Reported
19	N019899-001AMSD	MSD	1	Hexavalent Chromium	05/26/16 12:37 PM	Reported
20	N019900-001A	SAMP	1	Hexavalent Chromium	05/26/16 12:47 PM	Not Reported
21	N019900-001AMS	MS	1	Hexavalent Chromium	05/26/16 12:56 PM	Not Reported
22	N019856-003A	SAMP	1	Hexavalent Chromium	05/26/16 1:06 PM	Reported
23	N019856-004A	SAMP	1	Hexavalent Chromium	05/26/16 1:15 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	05/26/16 1:24 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	05/26/16 1:34 PM	Reported
26	N019869-001A	SAMP	1	Hexavalent Chromium	05/26/16 1:43 PM	Reported
27	N019869-002A	SAMP	1	Hexavalent Chromium	05/26/16 1:53 PM	Reported
28	N019869-003A	SAMP	1	Hexavalent Chromium	05/26/16 2:02 PM	Reported
29	N019869-004A	SAMP	1	Hexavalent Chromium	05/26/16 2:12 PM	Reported
30	N019869-005A	SAMP	1	Hexavalent Chromium	05/26/16 2:21 PM	Reported
31	N019869-006A	SAMP	1	Hexavalent Chromium	05/26/16 2:31 PM	Reported
32	N019869-007A	SAMP	1	Hexavalent Chromium	05/26/16 2:40 PM	Reported
33	N019869-008A	SAMP	1	Hexavalent Chromium	05/26/16 2:50 PM	Reported
34	N019869-009A	SAMP	1	Hexavalent Chromium	05/26/16 2:59 PM	Reported
35	N019869-010A	SAMP	1	Hexavalent Chromium	05/26/16 3:09 PM	Reported
36	CCV-2	CCV	1	Hexavalent Chromium	05/26/16 3:18 PM	Reported
37	CCB-2	CCB	1	Hexavalent Chromium	05/26/16 3:27 PM	Reported
38	N019869-008A	SAMP	1	Hexavalent Chromium	05/26/16 3:37 PM	Not Reported
39	N019900-001A	SAMP	20	Hexavalent Chromium	05/26/16 3:46 PM	Reported
40	N019900-001AMS	MS	20	Hexavalent Chromium	05/26/16 3:56 PM	Reported
41	CCV-3	CCV1	1	Hexavalent Chromium	05/26/16 4:10 PM	Reported
42	CCB-3	CCB	1	Hexavalent Chromium	05/26/16 4:22 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160526A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**26/May/16 16:52:32**
No. of Injections:	**45**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/26/2016 09:41	Finished	
2	BLANK	2	1000	Unknown		05/26/2016 09:52	Finished	
3	BLANK	3	1000	Unknown		05/26/2016 10:01	Finished	
4	iBLANK	4	1000	Unknown		05/26/2016 10:11	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Calibration Standard	01	05/26/2016 10:20	Finished	0.2 ppb, IWST160401A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	05/26/2016 10:30	Finished	1.0 ppb, IWST160401A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	05/26/2016 10:39	Finished	5.0 ppb, IWST160401A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	05/26/2016 10:49	Finished	10 ppb, IWST160401A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	05/26/2016 10:58	Finished	15 ppb, IWST160401A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	05/26/2016 11:08	Finished	20 ppb, IWST160401A
11	ICV,ICV,1,	11	1000	Unknown		05/26/2016 11:19	Finished	ICV @5ppb, IWST-160401B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		05/26/2016 11:31	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		05/26/2016 11:40	Finished	ICB R160523B
14	MB-H2O,MBLK,1	14	1000	Unknown		05/26/2016 11:50	Finished	MB R160502C
15	LCS-H2O,LCS,1	15	1000	Unknown		05/26/2016 11:59	Finished	LCS, IWST-160401B
16	N019899-001A,SAMP	16	1000	Unknown		05/26/2016 12:09	Finished	SAMP, 10 mL
17	N019899-001ADUP,D	17	1000	Unknown		05/26/2016 12:18	Finished	DUP, 10 mL
18	N019899-001AMS,MS	18	1000	Unknown		05/26/2016 12:28	Finished	MS (5ppb), IWST-160401B, 10
19	N019899-001AMSD,M	19	1000	Unknown		05/26/2016 12:37	Finished	MSD (5ppb), IWST-160401B, 1
20	N019900-001A,SAMP	20	1000	Unknown		05/26/2016 12:47	Finished	SAMP, 10 mL
21	N019900-001AMS,MS	21	1000	Unknown		05/26/2016 12:56	Finished	MS (1ppb), IWST-160401B, 10
22	N019856-003A,SAMP	22	1000	Unknown		05/26/2016 13:06	Finished	LOD 0.15 ppb, 10 mL
23	N019856-004A,SAMP	23	1000	Unknown		05/26/2016 13:15	Finished	PQL 0.20 mL, 10 mL
24	CCV-1,CCV1,1,	24	1000	Unknown		05/26/2016 13:24	Finished	CCV @10ppb, IWST-160401A
25	CCB-1,CCB,1,	25	1000	Unknown		05/26/2016 13:34	Finished	CCB
26	N019869-001A,SAMP	26	1000	Unknown		05/26/2016 13:43	Finished	SAMP, 10 mL
27	N019869-002A,SAMP	27	1000	Unknown		05/26/2016 13:53	Finished	SAMP, 10 mL
28	N019869-003A,SAMP	28	1000	Unknown		05/26/2016 14:02	Finished	SAMP, 10 mL
29	N019869-004A,SAMP	29	1000	Unknown		05/26/2016 14:12	Finished	SAMP, 10 mL
30	N019869-005A,SAMP	30	1000	Unknown		05/26/2016 14:21	Finished	SAMP, 10 mL
31	N019869-006A,SAMP	31	1000	Unknown		05/26/2016 14:31	Finished	SAMP, 10 mL
32	N019869-007A,SAMP	32	1000	Unknown		05/26/2016 14:40	Finished	SAMP, 10 mL
33	N019869-008A,SAMP	33	1000	Unknown		05/26/2016 14:50	Finished	SAMP, 10 mL
34	N019869-009A,SAMP	34	1000	Unknown		05/26/2016 14:59	Finished	SAMP, 10 mL
35	N019869-010A,SAMP	35	1000	Unknown		05/26/2016 15:09	Finished	SAMP, 10 mL
36	CCV-2,CCV,1,	36	1000	Unknown		05/26/2016 15:18	Finished	CCV @5ppb, IWST-160401A
37	CCB-2,CCB,1,	37	1000	Unknown		05/26/2016 15:27	Finished	CCB R160426G
38	N019869-008A,SAMP	38	1000	Unknown		05/26/2016 15:37	Finished	SAMP, 10 mL
39	N019900-001A,SAMP	39	1000	Unknown		05/26/2016 15:46	Finished	SAMP, 0.5>10 mL
40	N019900-001AMS,MS	40	1000	Unknown		05/26/2016 15:56	Finished	MS (5ppb), IWST-160401B, 0.5
41	CCV-3,CCV1,1,	41	1000	Unknown		05/26/2016 16:10	Finished	CCV @10ppb, IWST-160401A
42	CCB-3,CCB,1,	42	1000	Unknown		05/26/2016 16:22	Finished	CCB
43	SHUTDOWN	43	1000	Unknown		05/26/2016 16:31	Finished	
44	Eluent: R160517A	44	1000	Unknown		n.a.	Finished	Eluent
45	PCR: R160523A	45	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160608A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:41 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:52 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 10:01 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/26/16 10:11 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:20 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:30 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:39 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:49 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:58 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 11:08 AM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/08/16 11:56 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	06/08/16 12:07 PM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	06/08/16 12:17 PM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/08/16 12:26 PM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	06/08/16 12:36 PM	Reported
16	MB-R108868	MBLK	1	Hexavalent Chromium	06/08/16 12:45 PM	Reported
17	LCS-R108868	LCS	1	Hexavalent Chromium	06/08/16 12:55 PM	Reported
18	N020007-001B	SAMP	100	Hexavalent Chromium	06/08/16 1:04 PM	Reported
19	N020007-001BDUP	DUP	100	Hexavalent Chromium	06/08/16 1:14 PM	Reported
20	N020007-001BMS	MS	100	Hexavalent Chromium	06/08/16 1:23 PM	Reported
21	N020007-001BMSD	MSD	100	Hexavalent Chromium	06/08/16 1:33 PM	Reported
22	N020007-002B	SAMP	1	Hexavalent Chromium	06/08/16 1:42 PM	Reported
23	N020007-002BMS	MS	1	Hexavalent Chromium	06/08/16 1:52 PM	Reported
24	N020008-001A	SAMP	1	Hexavalent Chromium	06/08/16 2:01 PM	Reported
25	N020008-001AMS	MS	1	Hexavalent Chromium	06/08/16 2:10 PM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	06/08/16 2:20 PM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	06/08/16 2:29 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160608A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**08/Jun/16 16:53:42**
No. of Injections:	**30**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/26/2016 09:41	Finished	
2	BLANK	2	1000	Unknown		05/26/2016 09:52	Finished	
3	BLANK	3	1000	Unknown		05/26/2016 10:01	Finished	
4	iBLANK	4	1000	Unknown		05/26/2016 10:11	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Calibration Standard	01	05/26/2016 10:20	Finished	0.2 ppb, IWST160401A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	05/26/2016 10:30	Finished	1.0 ppb, IWST160401A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	05/26/2016 10:39	Finished	5.0 ppb, IWST160401A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	05/26/2016 10:49	Finished	10 ppb, IWST160401A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	05/26/2016 10:58	Finished	15 ppb, IWST160401A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	05/26/2016 11:08	Finished	20 ppb, IWST160401A
11	BLANK	1	1000	Unknown		06/08/2016 11:56	Finished	
12	BLANK	2	1000	Unknown		06/08/2016 12:07	Finished	
13	CCV-1,CCV,1,	3	1000	Unknown		06/08/2016 12:17	Finished	CCV @5ppb, IWST-160401A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/08/2016 12:26	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		06/08/2016 12:36	Finished	CCB R160608C
16	MB-H2O,MBLK,1	6	1000	Unknown		06/08/2016 12:45	Finished	MB R160526A
17	LCS-H2O,LCS,1	7	1000	Unknown		06/08/2016 12:55	Finished	LCS, IWST-160401B
18	N020007-001B,SAMP	8	1000	Unknown		06/08/2016 13:04	Finished	SAMP, 0.1>10 mL
19	N020007-001BDUP,D	9	1000	Unknown		06/08/2016 13:14	Finished	DUP, 0.1>10 mL
20	N020007-001BMS,MS	10	1000	Unknown		06/08/2016 13:23	Finished	MS(5ppb), IWST-160401B, 0.1
21	N020007-001BMSD,M	11	1000	Unknown		06/08/2016 13:33	Finished	MSD(5ppb), IWST-160401B, 0.
22	N020007-002B,SAMP	12	1000	Unknown		06/08/2016 13:42	Finished	SAMP, 10 mL
23	N020007-002BMS,MS	13	1000	Unknown		06/08/2016 13:52	Finished	MS(1ppb), IWST-160401B, 10r
24	N020008-001A,SAMP	14	1000	Unknown		06/08/2016 14:01	Finished	SAMP, 10 mL
25	N020008-001AMS,MS	15	1000	Unknown		06/08/2016 14:10	Finished	MS(1ppb), IWST-160401B, 10r
26	CCV-2,CCV1,1,	16	1000	Unknown		06/08/2016 14:20	Finished	CCV @10ppb, IWST-160401A
27	CCB-2,CCB,1,	17	1000	Unknown		06/08/2016 14:29	Finished	CCB
28	SHUTDOWN	18	1000	Unknown		06/08/2016 14:49	Finished	
29	Eluent: R160603B	19	1000	Unknown		n.a.	Finished	Eluent
30	PCR: R160608B	20	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

6/9/2016

Sample Preparation

Date Prepared: 6/8/16
Time Prepared: 11:10 AM
Prepared By: JM

slope: 98.6 %
pH 7: 7.02 @ 27.7
4: 4.01 @ 27.8
10: 10.00 @ 27.8
LCS: 7.05 @ 27.5

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINV-160125 H
NH4OH + NH4SO4 eluent: R160603B
NH4OH + NH4SO4 buffer: R160522A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NG20006-1D	9.35	-	-	-	-	
2)	-2D	9.30	-	-	-	-	lab filtered, lab preserved
3)	NG20007-1D	9.31	-	-	-	-	
4)	-2B	9.36	-	-	-	-	
5)	NG20008-1A	9.23	9.36	~250mL	~250 mL	+ 2 drops 6N NaOH	R160522A
6)	-2A	9.25	9.38	↓	↓	+ 2 drops 6N NaOH	↓
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared:
Time Prepared:
Prepared By:

Reagent ID:
Sulfuric Acid:
Diphenylcarbazide:
NH4OH + NH4SO4 eluent:
NH4OH + NH4SO4 buffer:

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)							
2)							
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 10

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 5/26/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0446	0.2470	1.2314	2.4536	3.7141	4.9068	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ICV**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **5/26/2016**	SeqNo: **2347879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.116	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **5/26/2016**	SeqNo: **2347880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.208	0.20	0.2000	0	104	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **CCV**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.054	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.214	0.20	0.2000	0	107	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.925	0.20	10.00	0	99.3	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ICB**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **5/26/2016**	SeqNo: **2347881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **CCB**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **CCB**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/8/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.065	
CCV-2	5.056	
Average	5.061	
Actual RT Window	4.981 - 5.141	
Applied RT Window	4.861 - 5.261	
MB-R108868	N.A.	N.A.
LCS-R108868	5.056	PASS
N020007-001B	5.056	PASS
N020007-001BDUP	5.056	PASS
N020007-001BMS	5.065	PASS
N020007-001BMSD	5.056	PASS
N020007-002B	4.931	PASS
N020007-002BMS	4.948	PASS
N020008-001A	5.006	PASS
N020008-001AMS	5.015	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160526A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:41 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:52 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 10:01 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/26/16 10:11 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:20 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:30 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:39 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:49 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:58 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 11:08 AM	Reported
11	ICV	ICV	1	Hexavalent Chromium	05/26/16 11:19 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/26/16 11:31 AM	Reported
13	ICB	ICB	1	Hexavalent Chromium	05/26/16 11:40 AM	Reported
14	MB-R108684	MBLK	1	Hexavalent Chromium	05/26/16 11:50 AM	Reported
15	LCS-R108684	LCS	1	Hexavalent Chromium	05/26/16 11:59 AM	Reported
16	N019899-001A	SAMP	1	Hexavalent Chromium	05/26/16 12:09 PM	Reported
17	N019899-001ADUP	DUP	1	Hexavalent Chromium	05/26/16 12:18 PM	Reported
18	N019899-001AMS	MS	1	Hexavalent Chromium	05/26/16 12:28 PM	Reported
19	N019899-001AMSD	MSD	1	Hexavalent Chromium	05/26/16 12:37 PM	Reported
20	N019900-001A	SAMP	1	Hexavalent Chromium	05/26/16 12:47 PM	Not Reported
21	N019900-001AMS	MS	1	Hexavalent Chromium	05/26/16 12:56 PM	Not Reported
22	N019856-003A	SAMP	1	Hexavalent Chromium	05/26/16 1:06 PM	Reported
23	N019856-004A	SAMP	1	Hexavalent Chromium	05/26/16 1:15 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	05/26/16 1:24 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	05/26/16 1:34 PM	Reported
26	N019869-001A	SAMP	1	Hexavalent Chromium	05/26/16 1:43 PM	Reported
27	N019869-002A	SAMP	1	Hexavalent Chromium	05/26/16 1:53 PM	Reported
28	N019869-003A	SAMP	1	Hexavalent Chromium	05/26/16 2:02 PM	Reported
29	N019869-004A	SAMP	1	Hexavalent Chromium	05/26/16 2:12 PM	Reported
30	N019869-005A	SAMP	1	Hexavalent Chromium	05/26/16 2:21 PM	Reported
31	N019869-006A	SAMP	1	Hexavalent Chromium	05/26/16 2:31 PM	Reported
32	N019869-007A	SAMP	1	Hexavalent Chromium	05/26/16 2:40 PM	Reported
33	N019869-008A	SAMP	1	Hexavalent Chromium	05/26/16 2:50 PM	Reported
34	N019869-009A	SAMP	1	Hexavalent Chromium	05/26/16 2:59 PM	Reported
35	N019869-010A	SAMP	1	Hexavalent Chromium	05/26/16 3:09 PM	Reported
36	CCV-2	CCV	1	Hexavalent Chromium	05/26/16 3:18 PM	Reported
37	CCB-2	CCB	1	Hexavalent Chromium	05/26/16 3:27 PM	Reported
38	N019869-008A	SAMP	1	Hexavalent Chromium	05/26/16 3:37 PM	Not Reported
39	N019900-001A	SAMP	20	Hexavalent Chromium	05/26/16 3:46 PM	Reported
40	N019900-001AMS	MS	20	Hexavalent Chromium	05/26/16 3:56 PM	Reported
41	CCV-3	CCV1	1	Hexavalent Chromium	05/26/16 4:10 PM	Reported
42	CCB-3	CCB	1	Hexavalent Chromium	05/26/16 4:22 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160526A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**26/May/16 16:52:32**
No. of Injections:	**45**	*Updated By:*	**ics 5000**

Injection Details

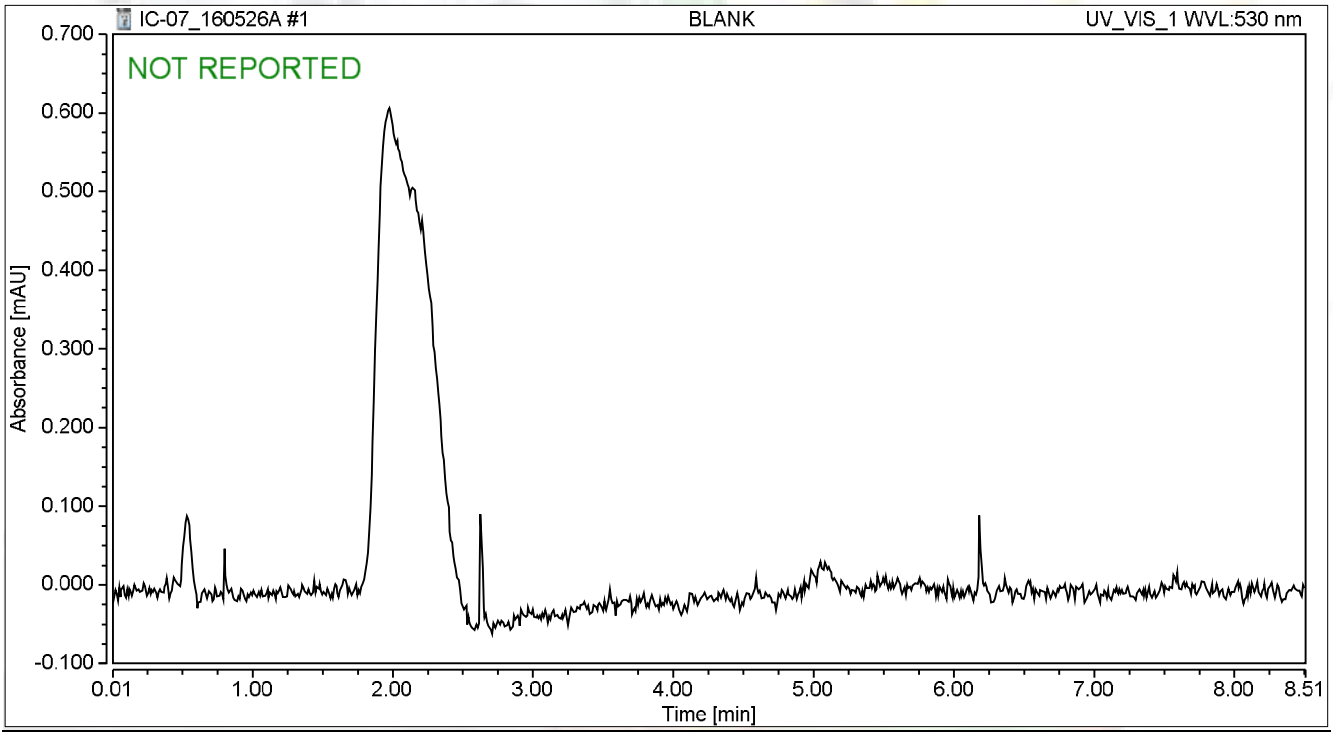
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/26/2016 09:41	Finished	
2	BLANK	2	1000	Unknown		05/26/2016 09:52	Finished	
3	BLANK	3	1000	Unknown		05/26/2016 10:01	Finished	
4	iBLANK	4	1000	Unknown		05/26/2016 10:11	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Calibration Standard	01	05/26/2016 10:20	Finished	0.2 ppb, IWST160401A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	05/26/2016 10:30	Finished	1.0 ppb, IWST160401A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	05/26/2016 10:39	Finished	5.0 ppb, IWST160401A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	05/26/2016 10:49	Finished	10 ppb, IWST160401A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	05/26/2016 10:58	Finished	15 ppb, IWST160401A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	05/26/2016 11:08	Finished	20 ppb, IWST160401A
11	ICV,ICV,1,	11	1000	Unknown		05/26/2016 11:19	Finished	ICV @5ppb, IWST-160401B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		05/26/2016 11:31	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		05/26/2016 11:40	Finished	ICB R160523B
14	MB-H2O,MBLK,1	14	1000	Unknown		05/26/2016 11:50	Finished	MB R160502C
15	LCS-H2O,LCS,1	15	1000	Unknown		05/26/2016 11:59	Finished	LCS, IWST-160401B
16	N019899-001A,SAMP	16	1000	Unknown		05/26/2016 12:09	Finished	SAMP, 10 mL
17	N019899-001ADUP,D	17	1000	Unknown		05/26/2016 12:18	Finished	DUP, 10 mL
18	N019899-001AMS,MS	18	1000	Unknown		05/26/2016 12:28	Finished	MS (5ppb), IWST-160401B, 10
19	N019899-001AMSD,M	19	1000	Unknown		05/26/2016 12:37	Finished	MSD (5ppb), IWST-160401B, 1
20	N019900-001A,SAMP	20	1000	Unknown		05/26/2016 12:47	Finished	SAMP, 10 mL
21	N019900-001AMS,MS	21	1000	Unknown		05/26/2016 12:56	Finished	MS (1ppb), IWST-160401B, 10
22	N019856-003A,SAMP	22	1000	Unknown		05/26/2016 13:06	Finished	LOD 0.15 ppb, 10 mL
23	N019856-004A,SAMP	23	1000	Unknown		05/26/2016 13:15	Finished	PQL 0.20 mL, 10 mL
24	CCV-1,CCV1,1,	24	1000	Unknown		05/26/2016 13:24	Finished	CCV @10ppb, IWST-160401A
25	CCB-1,CCB,1,	25	1000	Unknown		05/26/2016 13:34	Finished	CCB
26	N019869-001A,SAMP	26	1000	Unknown		05/26/2016 13:43	Finished	SAMP, 10 mL
27	N019869-002A,SAMP	27	1000	Unknown		05/26/2016 13:53	Finished	SAMP, 10 mL
28	N019869-003A,SAMP	28	1000	Unknown		05/26/2016 14:02	Finished	SAMP, 10 mL
29	N019869-004A,SAMP	29	1000	Unknown		05/26/2016 14:12	Finished	SAMP, 10 mL
30	N019869-005A,SAMP	30	1000	Unknown		05/26/2016 14:21	Finished	SAMP, 10 mL
31	N019869-006A,SAMP	31	1000	Unknown		05/26/2016 14:31	Finished	SAMP, 10 mL
32	N019869-007A,SAMP	32	1000	Unknown		05/26/2016 14:40	Finished	SAMP, 10 mL
33	N019869-008A,SAMP	33	1000	Unknown		05/26/2016 14:50	Finished	SAMP, 10 mL
34	N019869-009A,SAMP	34	1000	Unknown		05/26/2016 14:59	Finished	SAMP, 10 mL
35	N019869-010A,SAMP	35	1000	Unknown		05/26/2016 15:09	Finished	SAMP, 10 mL
36	CCV-2,CCV,1,	36	1000	Unknown		05/26/2016 15:18	Finished	CCV @5ppb, IWST-160401A
37	CCB-2,CCB,1,	37	1000	Unknown		05/26/2016 15:27	Finished	CCB R160426G
38	N019869-008A,SAMP	38	1000	Unknown		05/26/2016 15:37	Finished	SAMP, 10 mL
39	N019900-001A,SAMP	39	1000	Unknown		05/26/2016 15:46	Finished	SAMP, 0.5>10 mL
40	N019900-001AMS,MS	40	1000	Unknown		05/26/2016 15:56	Finished	MS (5ppb), IWST-160401B, 0.5
41	CCV-3,CCV1,1,	41	1000	Unknown		05/26/2016 16:10	Finished	CCV @10ppb, IWST-160401A
42	CCB-3,CCB,1,	42	1000	Unknown		05/26/2016 16:22	Finished	CCB
43	SHUTDOWN	43	1000	Unknown		05/26/2016 16:31	Finished	
44	Eluent: R160517A	44	1000	Unknown		n.a.	Finished	Eluent
45	PCR: R160523A	45	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 09:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

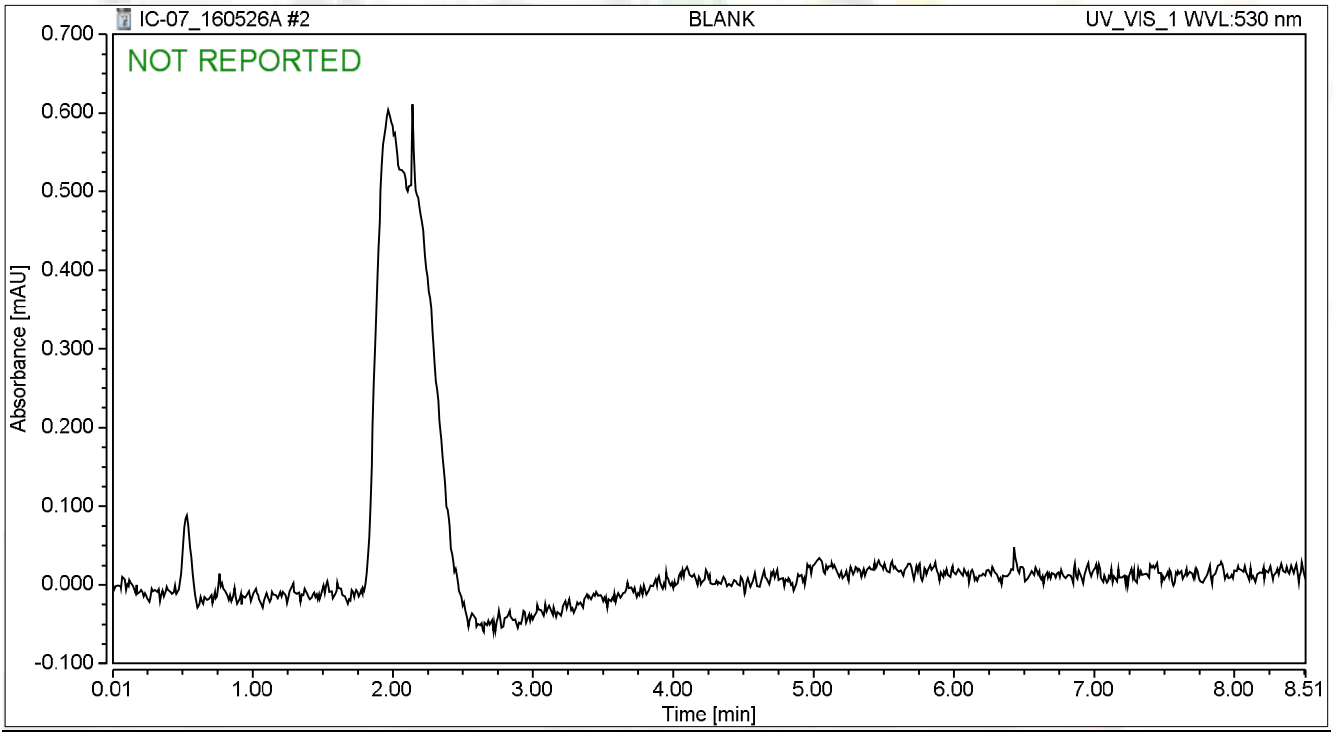
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

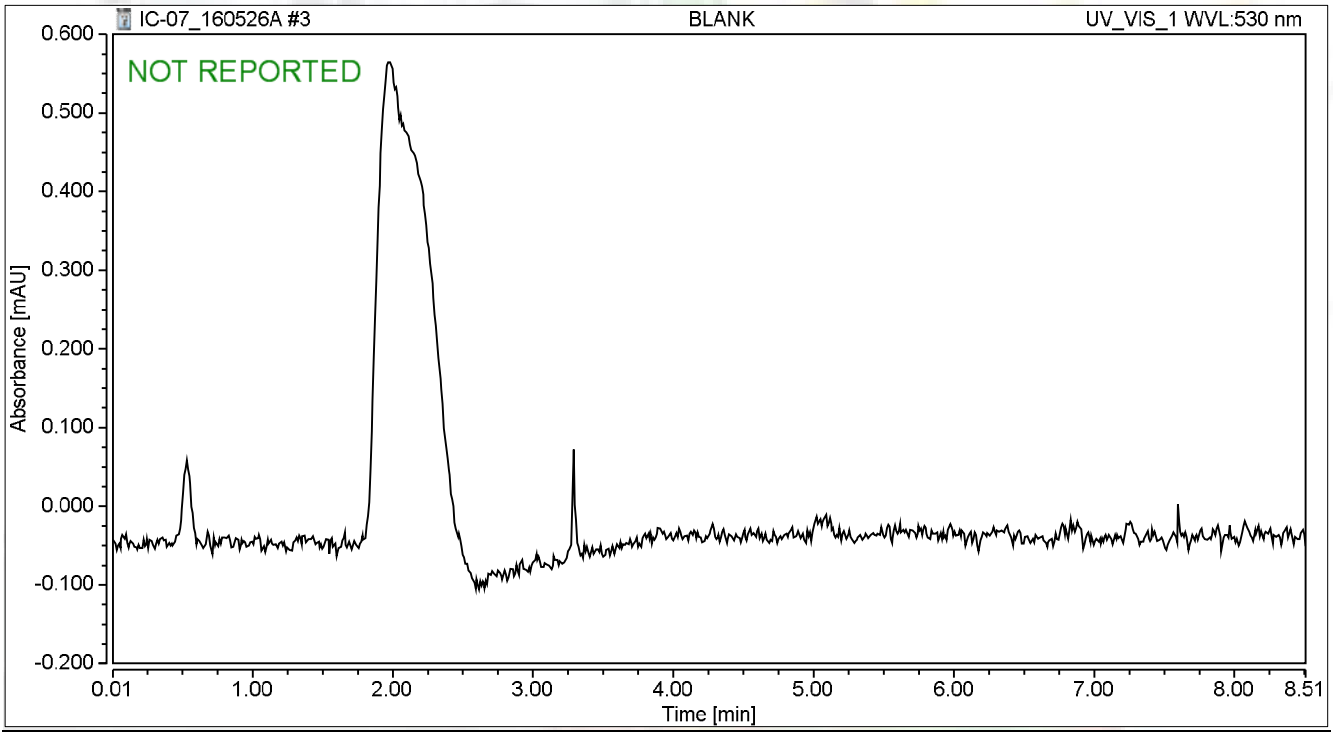
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

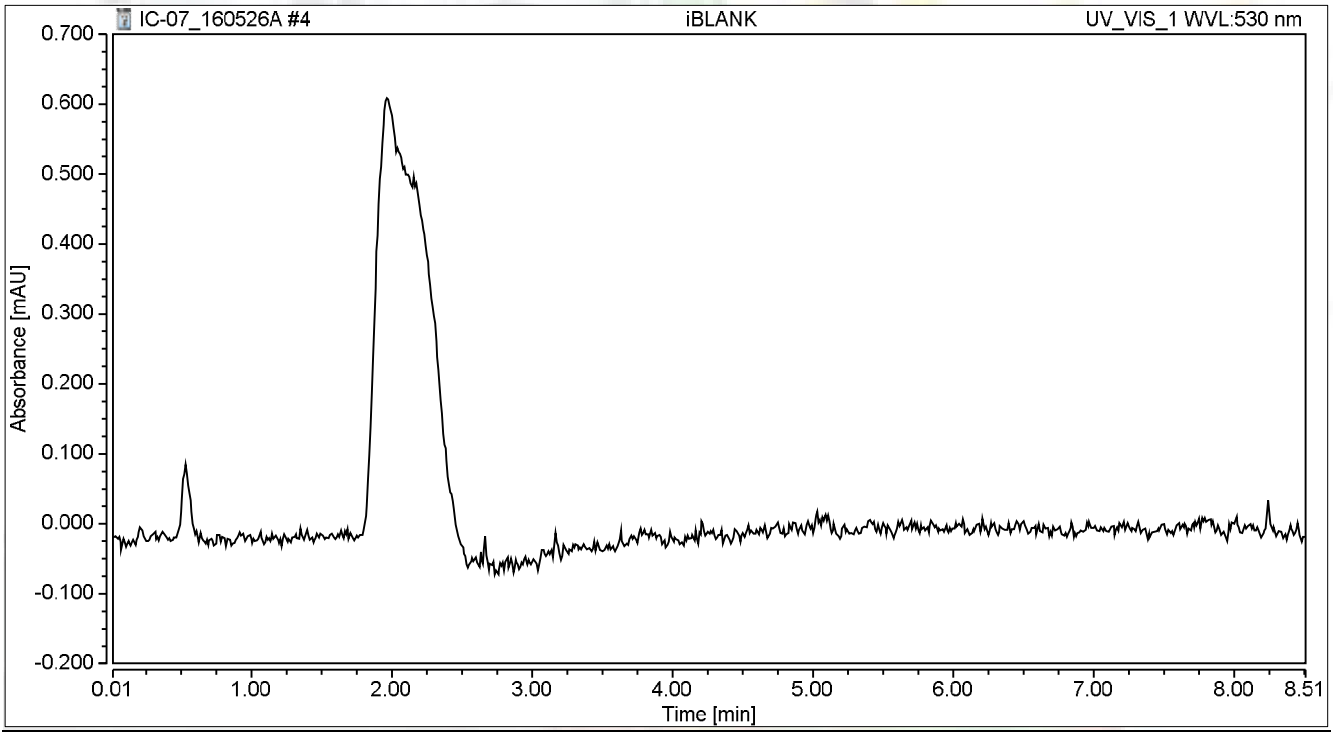
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

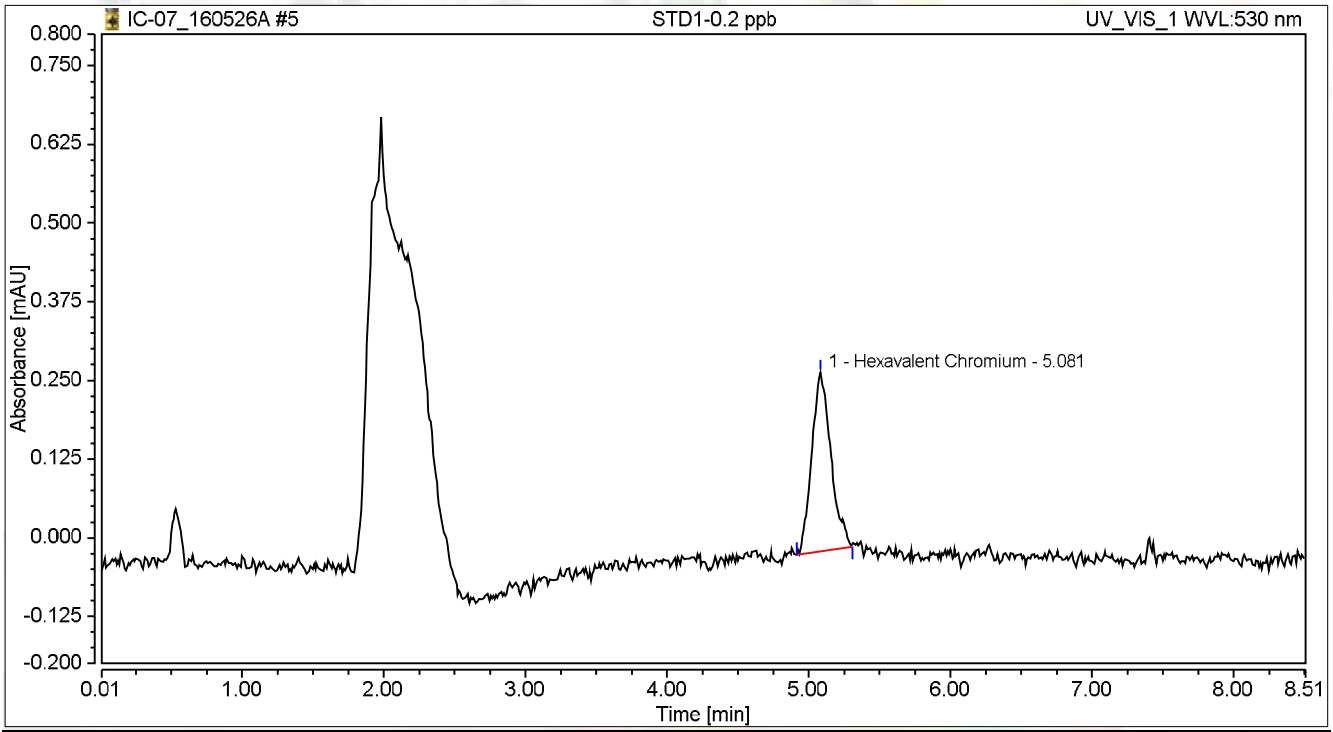
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

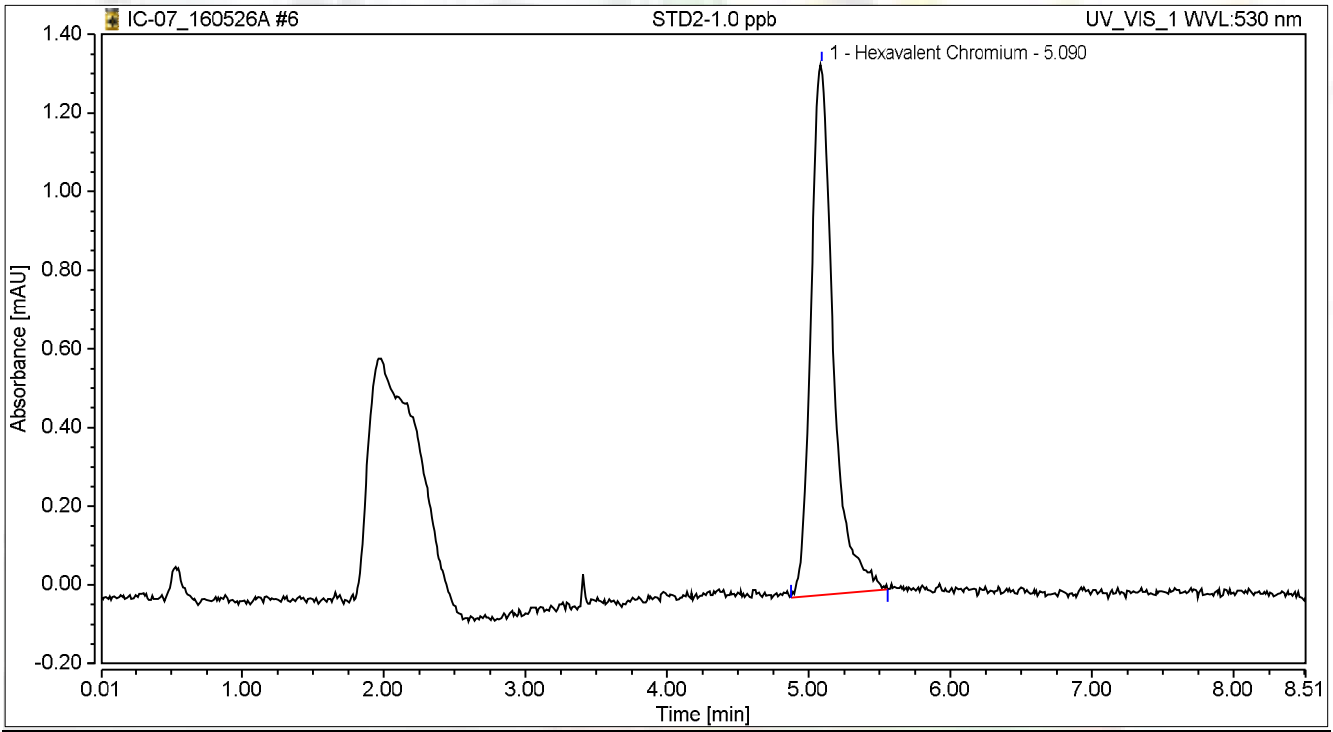
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.045	0.284	100.00	100.00	0.1812
Total:			**0.045**	**0.284**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

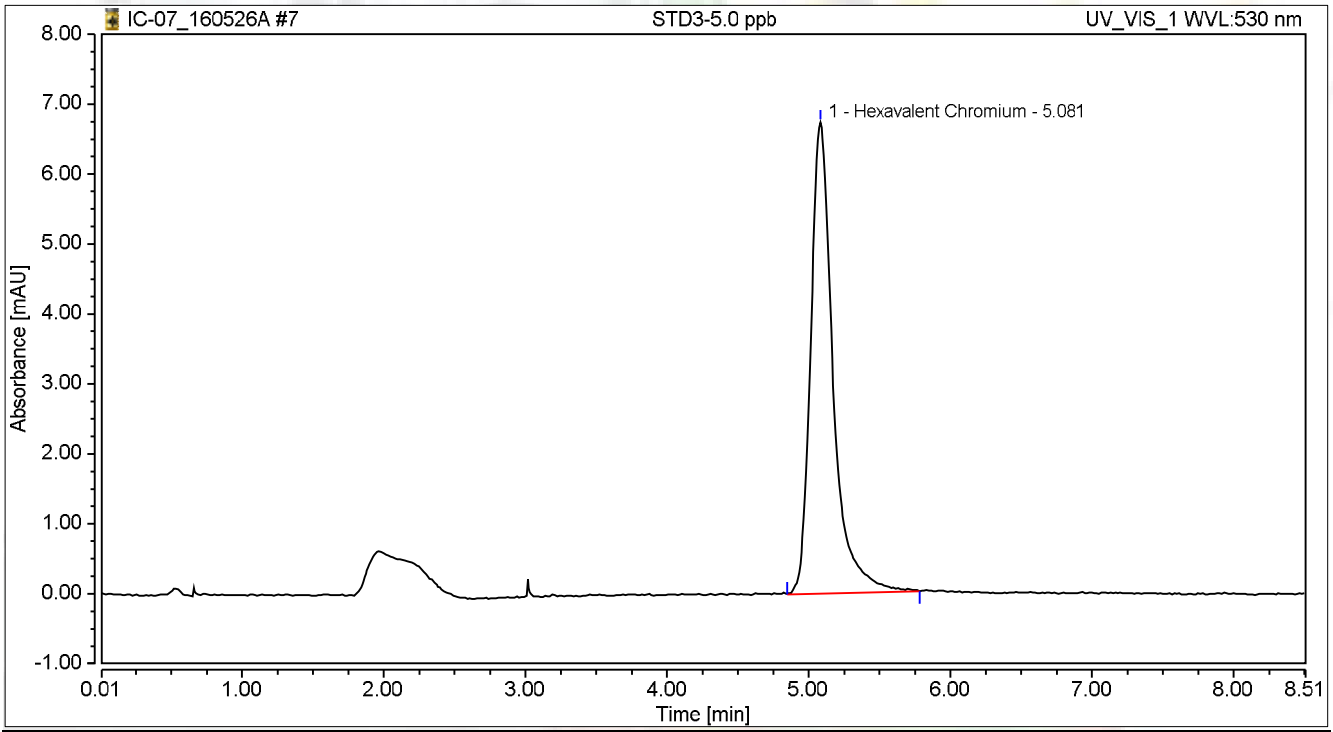
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.247	1.350	100.00	100.00	1.0037
Total:			**0.247**	**1.350**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

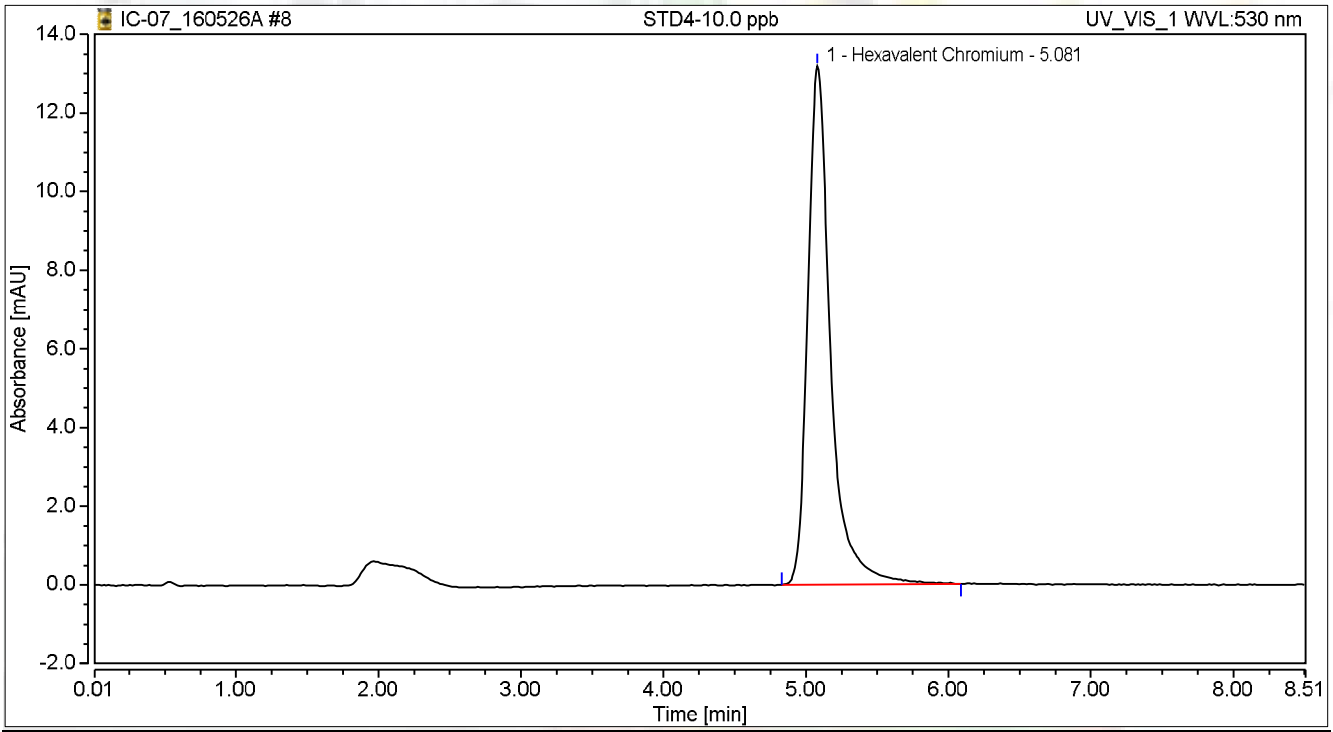
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	1.231	6.731	100.00	100.00	5.0048
Total:			**1.231**	**6.731**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

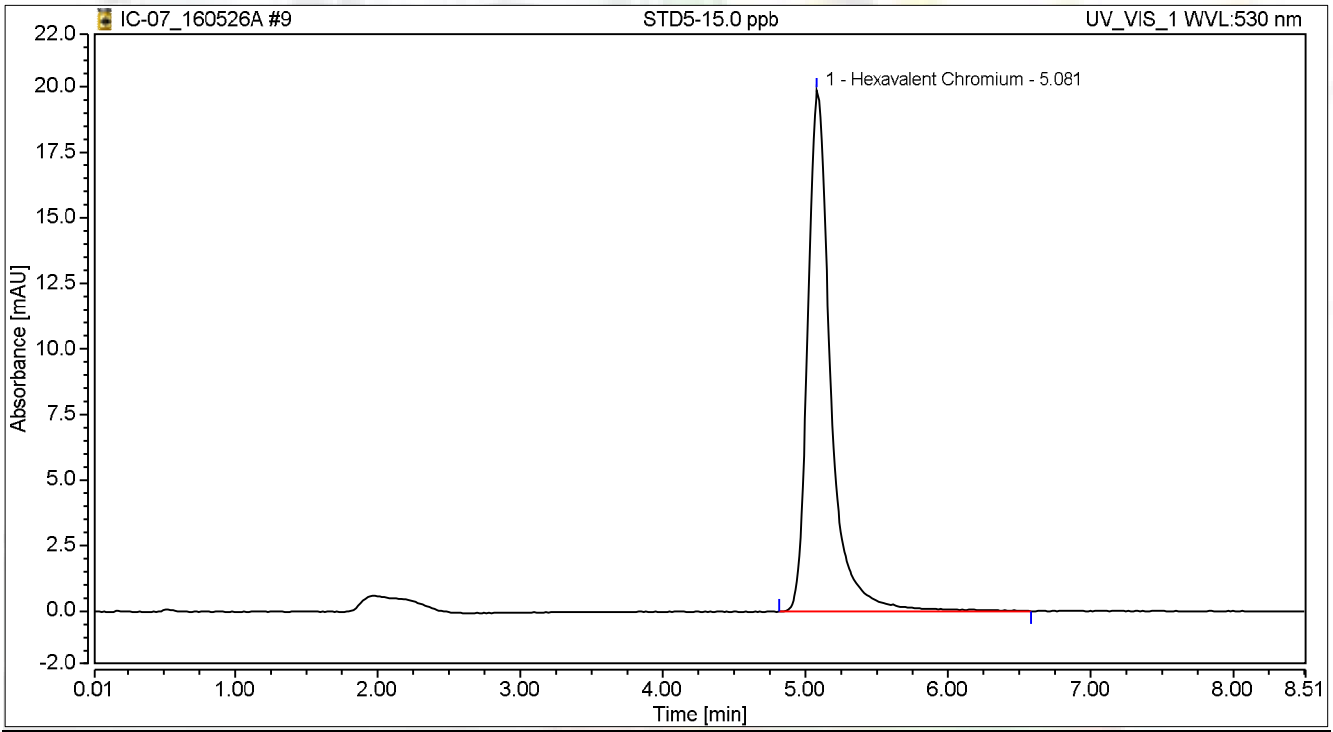
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	2.454	13.186	100.00	100.00	9.9718
Total:			**2.454**	**13.186**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

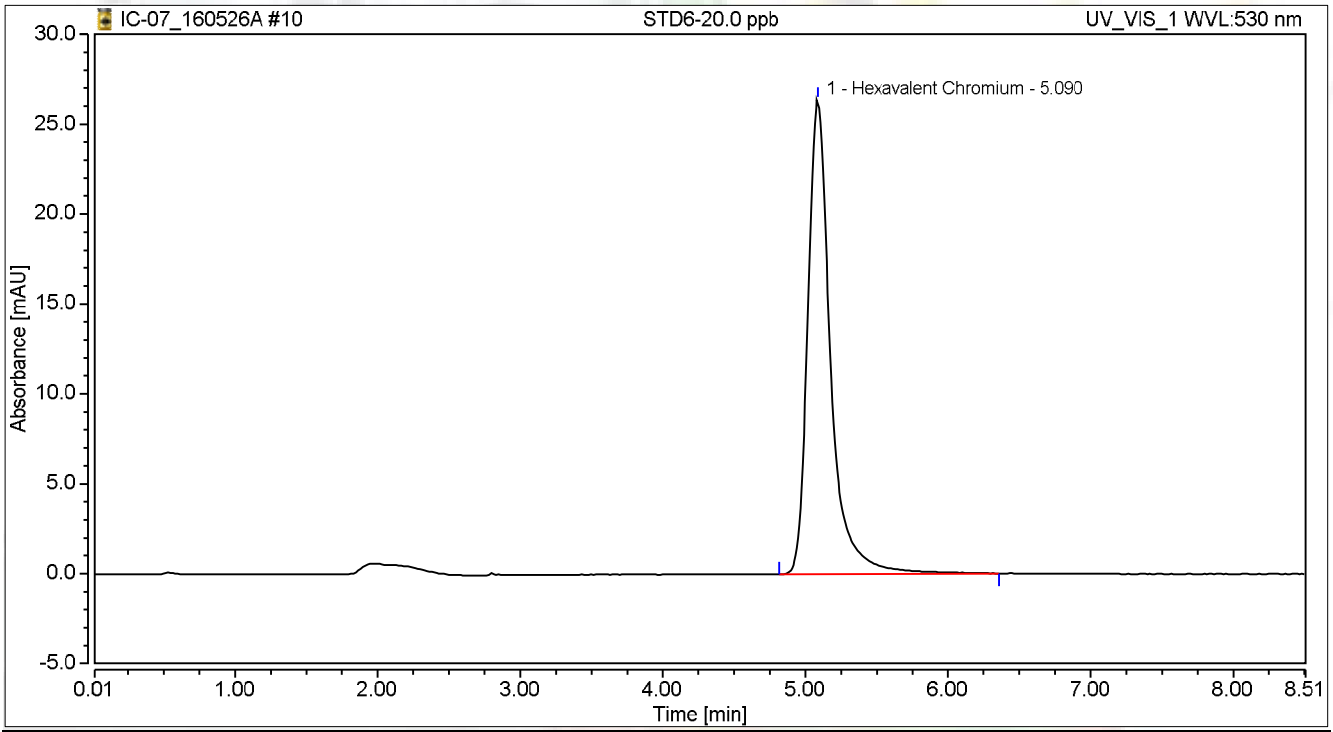
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	3.714	19.860	100.00	100.00	15.0946
Total:			**3.714**	**19.860**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



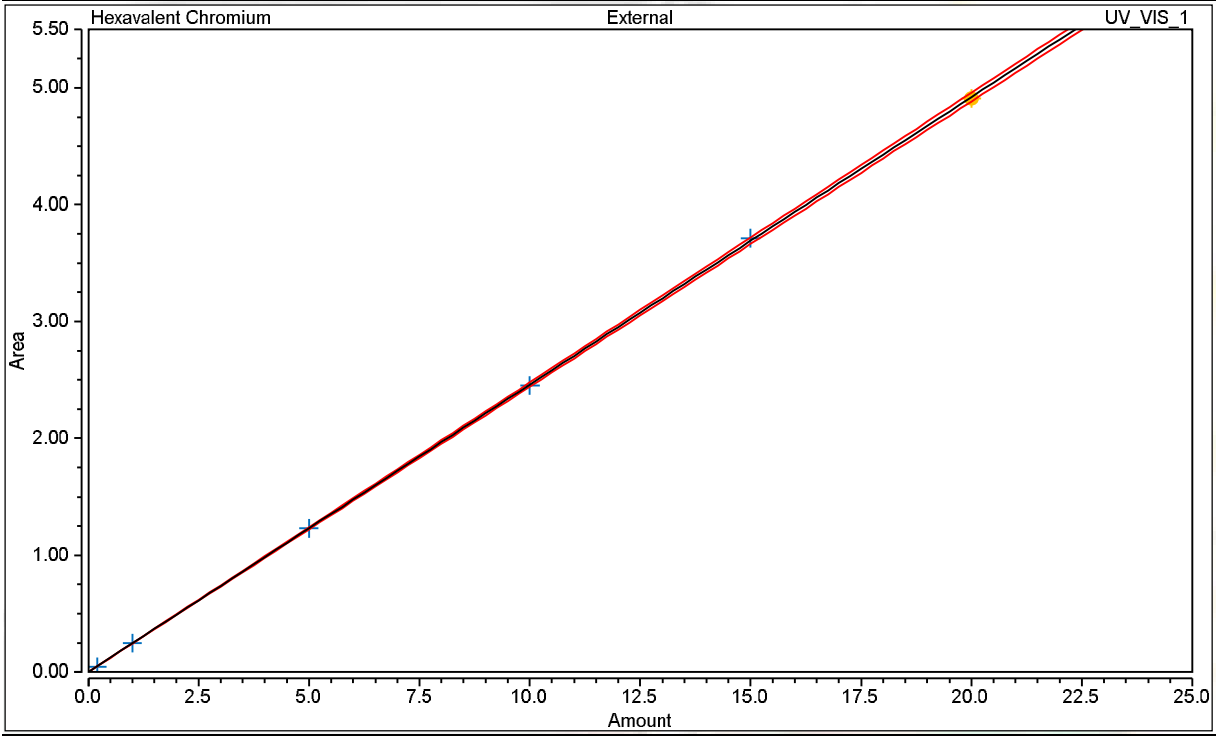
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	4.907	26.368	100.00	100.00	19.9419
Total:			**4.907**	**26.368**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2461
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

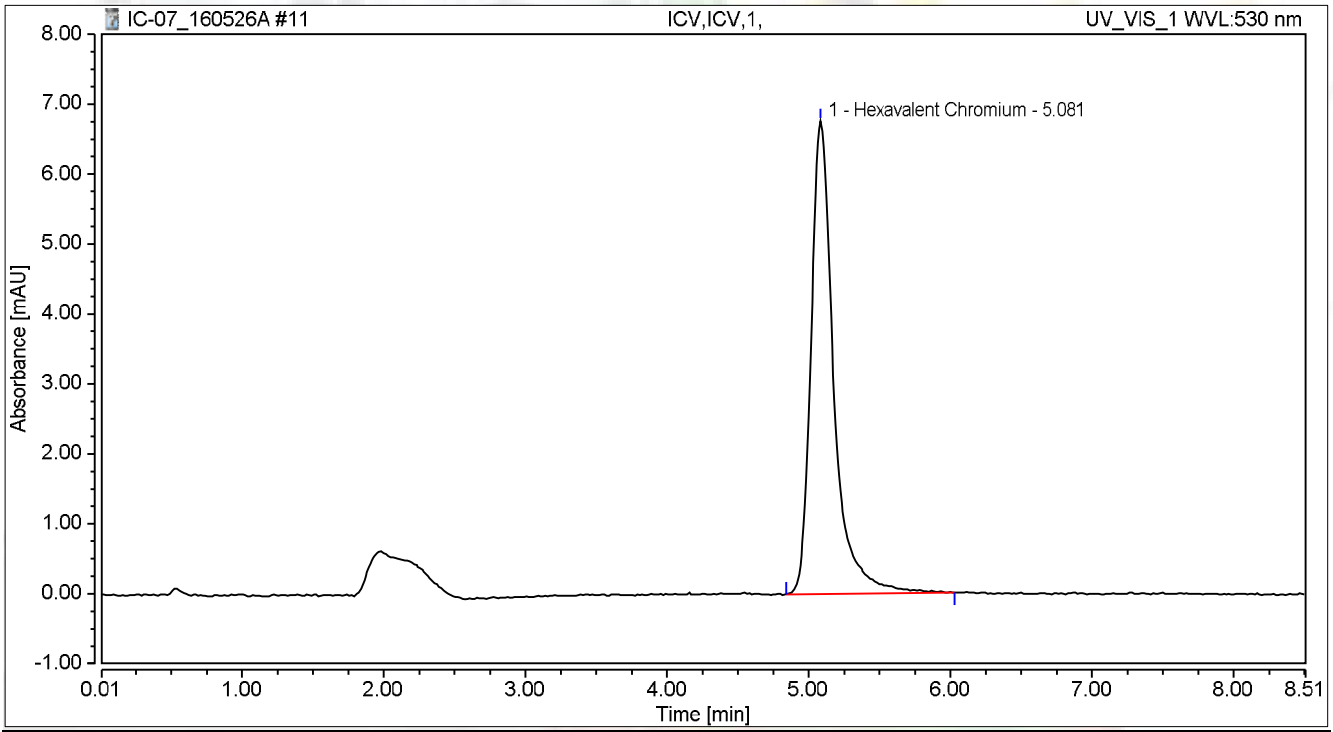
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
5	STD1-0.2 ppb	01	0.2000	0.0446	0.045	0.284
6	STD2-1.0 ppb	02	1.0000	0.2470	0.247	1.350
7	STD3-5.0 ppb	03	5.0000	1.2314	1.231	6.731
8	STD4-10.0 ppb	04	10.0000	2.4536	2.454	13.186
9	STD5-15.0 ppb	05	15.0000	3.7141	3.714	19.860
10	STD6-20.0 ppb	06	20.0000	4.9068	4.907	26.368

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

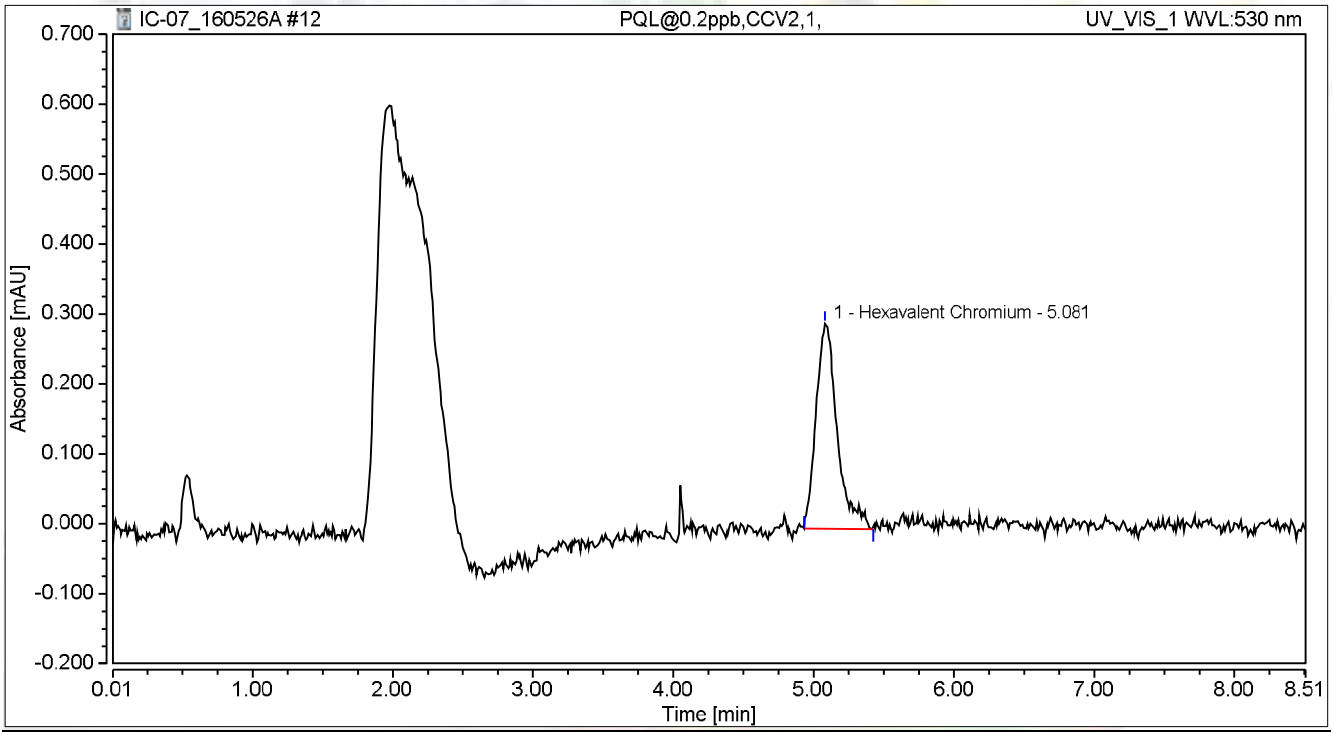
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	1.259	6.756	100.00	100.00	5.1157
Total:			**1.259**	**6.756**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 11:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

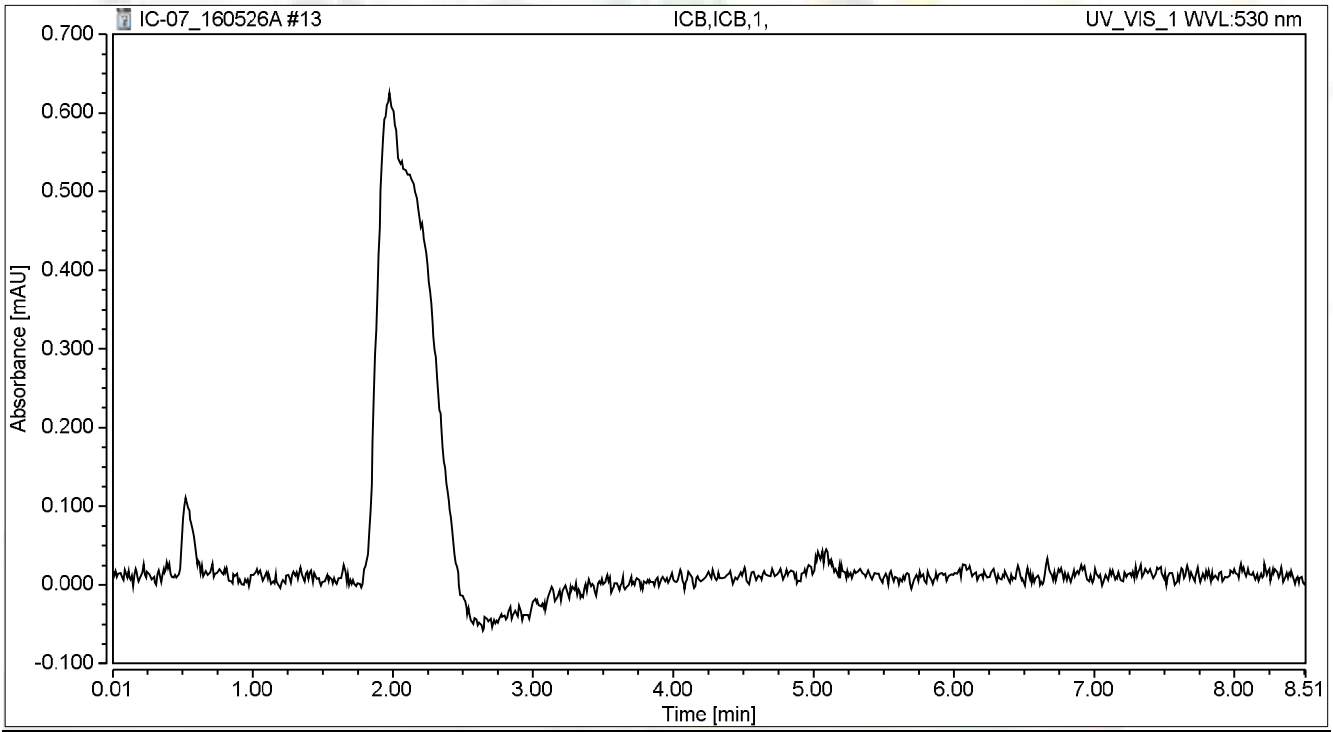
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.051	0.294	100.00	100.00	0.2084
Total:			**0.051**	**0.294**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160608A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:41 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:52 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 10:01 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/26/16 10:11 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:20 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:30 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:39 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:49 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:58 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 11:08 AM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/08/16 11:56 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	06/08/16 12:07 PM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	06/08/16 12:17 PM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/08/16 12:26 PM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	06/08/16 12:36 PM	Reported
16	MB-R108868	MBLK	1	Hexavalent Chromium	06/08/16 12:45 PM	Reported
17	LCS-R108868	LCS	1	Hexavalent Chromium	06/08/16 12:55 PM	Reported
18	N020007-001B	SAMP	100	Hexavalent Chromium	06/08/16 1:04 PM	Reported
19	N020007-001BDUP	DUP	100	Hexavalent Chromium	06/08/16 1:14 PM	Reported
20	N020007-001BMS	MS	100	Hexavalent Chromium	06/08/16 1:23 PM	Reported
21	N020007-001BMSD	MSD	100	Hexavalent Chromium	06/08/16 1:33 PM	Reported
22	N020007-002B	SAMP	1	Hexavalent Chromium	06/08/16 1:42 PM	Reported
23	N020007-002BMS	MS	1	Hexavalent Chromium	06/08/16 1:52 PM	Reported
24	N020008-001A	SAMP	1	Hexavalent Chromium	06/08/16 2:01 PM	Reported
25	N020008-001AMS	MS	1	Hexavalent Chromium	06/08/16 2:10 PM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	06/08/16 2:20 PM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	06/08/16 2:29 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160608A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**08/Jun/16 16:53:42**
No. of Injections:	**30**	*Updated By:*	**ics 5000**

Injection Details

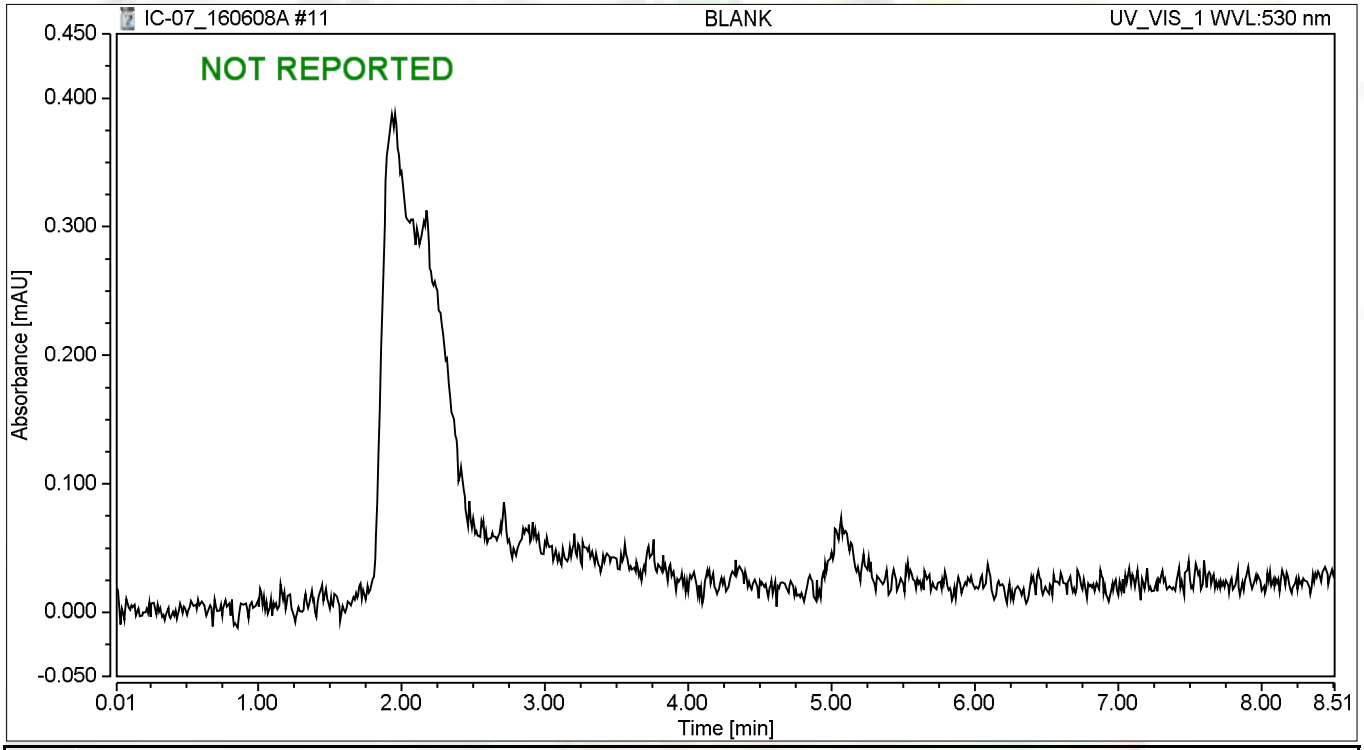
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/26/2016 09:41	Finished	
2	BLANK	2	1000	Unknown		05/26/2016 09:52	Finished	
3	BLANK	3	1000	Unknown		05/26/2016 10:01	Finished	
4	iBLANK	4	1000	Unknown		05/26/2016 10:11	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Calibration Standard	01	05/26/2016 10:20	Finished	0.2 ppb, IWST160401A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	05/26/2016 10:30	Finished	1.0 ppb, IWST160401A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	05/26/2016 10:39	Finished	5.0 ppb, IWST160401A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	05/26/2016 10:49	Finished	10 ppb, IWST160401A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	05/26/2016 10:58	Finished	15 ppb, IWST160401A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	05/26/2016 11:08	Finished	20 ppb, IWST160401A
11	BLANK	1	1000	Unknown		06/08/2016 11:56	Finished	
12	BLANK	2	1000	Unknown		06/08/2016 12:07	Finished	
13	CCV-1,CCV,1,	3	1000	Unknown		06/08/2016 12:17	Finished	CCV @5ppb, IWST-160401A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/08/2016 12:26	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		06/08/2016 12:36	Finished	CCB R160608C
16	MB-H2O,MBLK,1	6	1000	Unknown		06/08/2016 12:45	Finished	MB R160526A
17	LCS-H2O,LCS,1	7	1000	Unknown		06/08/2016 12:55	Finished	LCS, IWST-160401B
18	N020007-001B,SAMP	8	1000	Unknown		06/08/2016 13:04	Finished	SAMP, 0.1>10 mL
19	N020007-001BDUP,D	9	1000	Unknown		06/08/2016 13:14	Finished	DUP, 0.1>10 mL
20	N020007-001BMS,MS	10	1000	Unknown		06/08/2016 13:23	Finished	MS(5ppb), IWST-160401B, 0.1
21	N020007-001BMSD,M	11	1000	Unknown		06/08/2016 13:33	Finished	MSD(5ppb), IWST-160401B, 0.
22	N020007-002B,SAMP	12	1000	Unknown		06/08/2016 13:42	Finished	SAMP, 10 mL
23	N020007-002BMS,MS	13	1000	Unknown		06/08/2016 13:52	Finished	MS(1ppb), IWST-160401B, 10r
24	N020008-001A,SAMP	14	1000	Unknown		06/08/2016 14:01	Finished	SAMP, 10 mL
25	N020008-001AMS,MS	15	1000	Unknown		06/08/2016 14:10	Finished	MS(1ppb), IWST-160401B, 10r
26	CCV-2,CCV1,1,	16	1000	Unknown		06/08/2016 14:20	Finished	CCV @10ppb, IWST-160401A
27	CCB-2,CCB,1,	17	1000	Unknown		06/08/2016 14:29	Finished	CCB
28	SHUTDOWN	18	1000	Unknown		06/08/2016 14:49	Finished	
29	Eluent: R160603B	19	1000	Unknown		n.a.	Finished	Eluent
30	PCR: R160608B	20	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 11:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

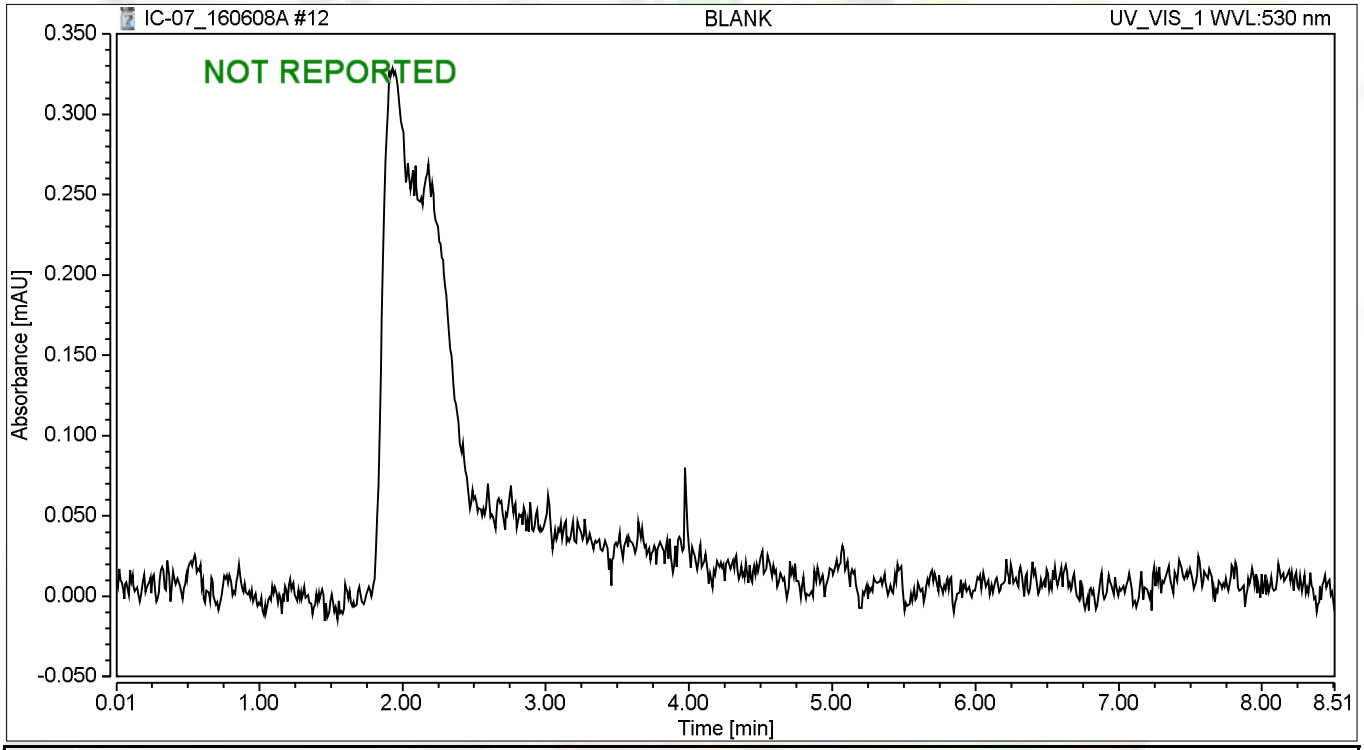
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

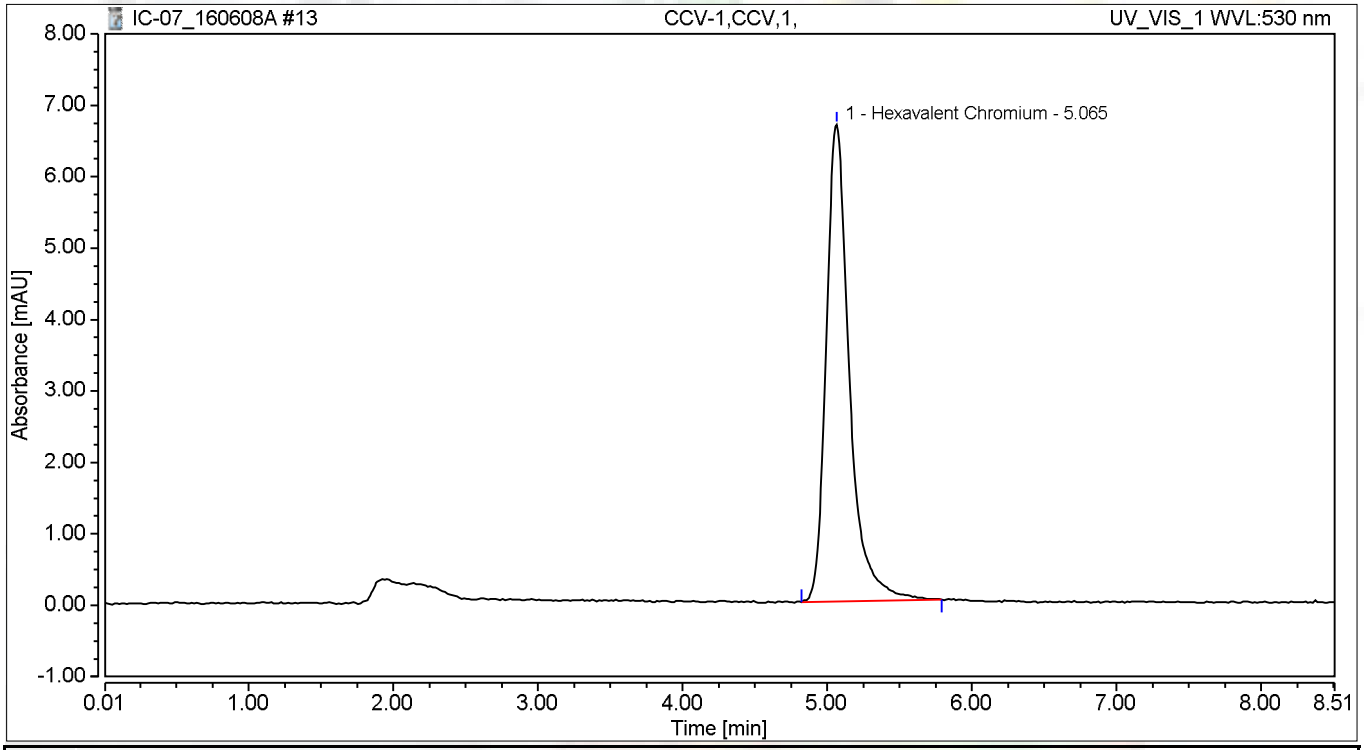
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

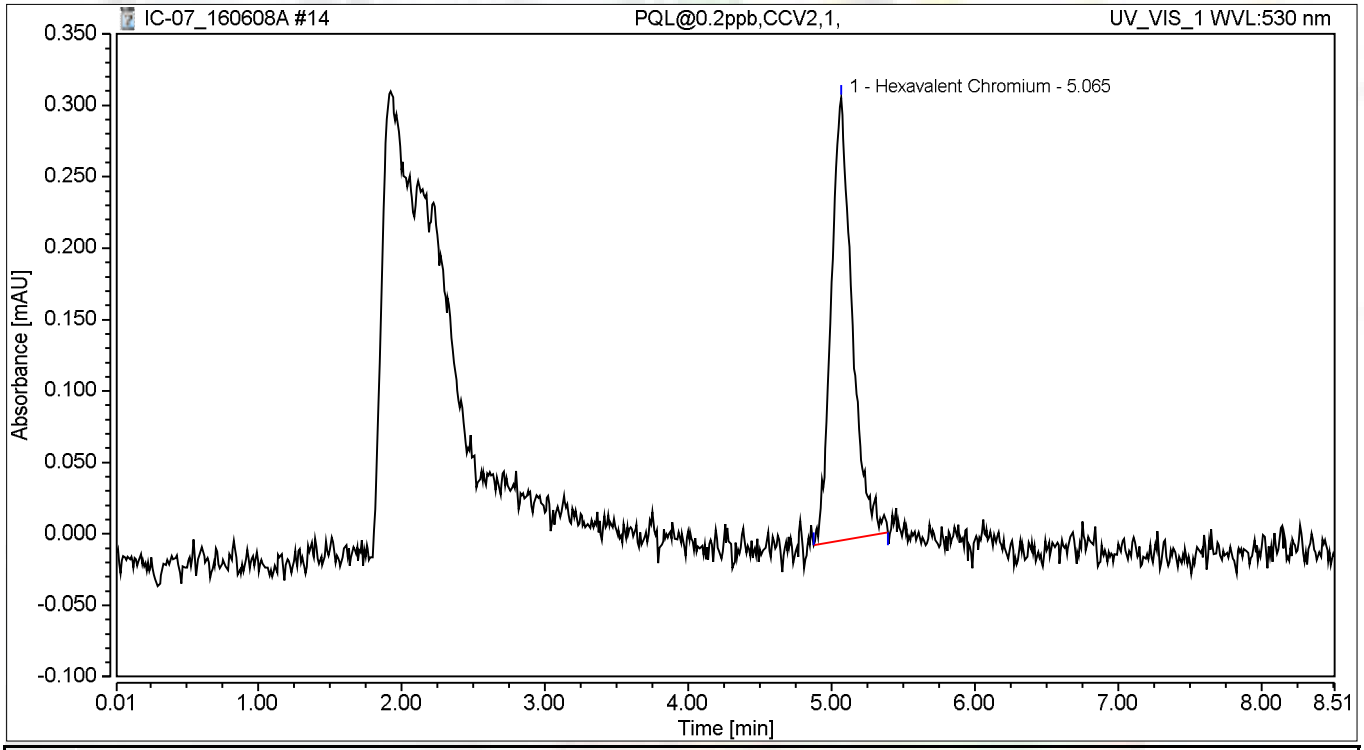
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.244	6.672	100.00	100.00	5.0539
Total:			**1.244**	**6.672**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

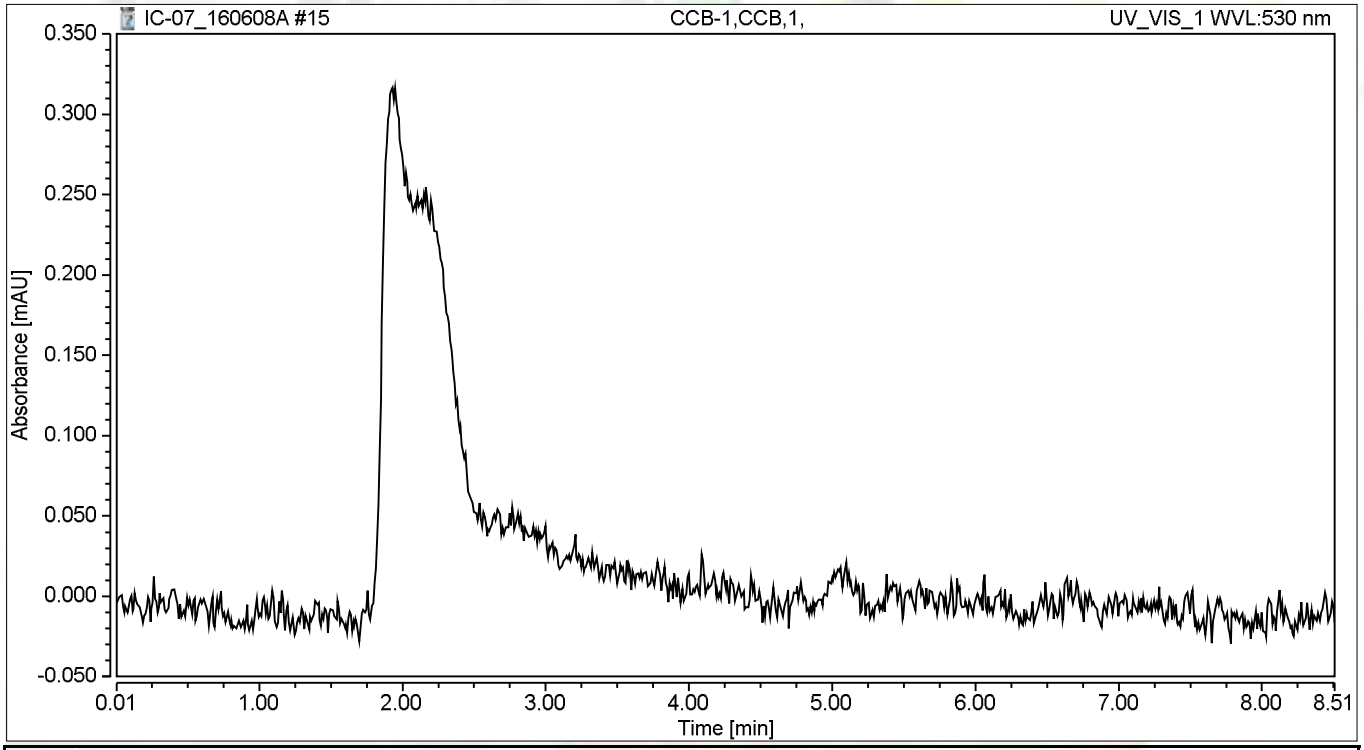
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.053	0.310	100.00	100.00	0.2137
Total:			**0.053**	**0.310**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

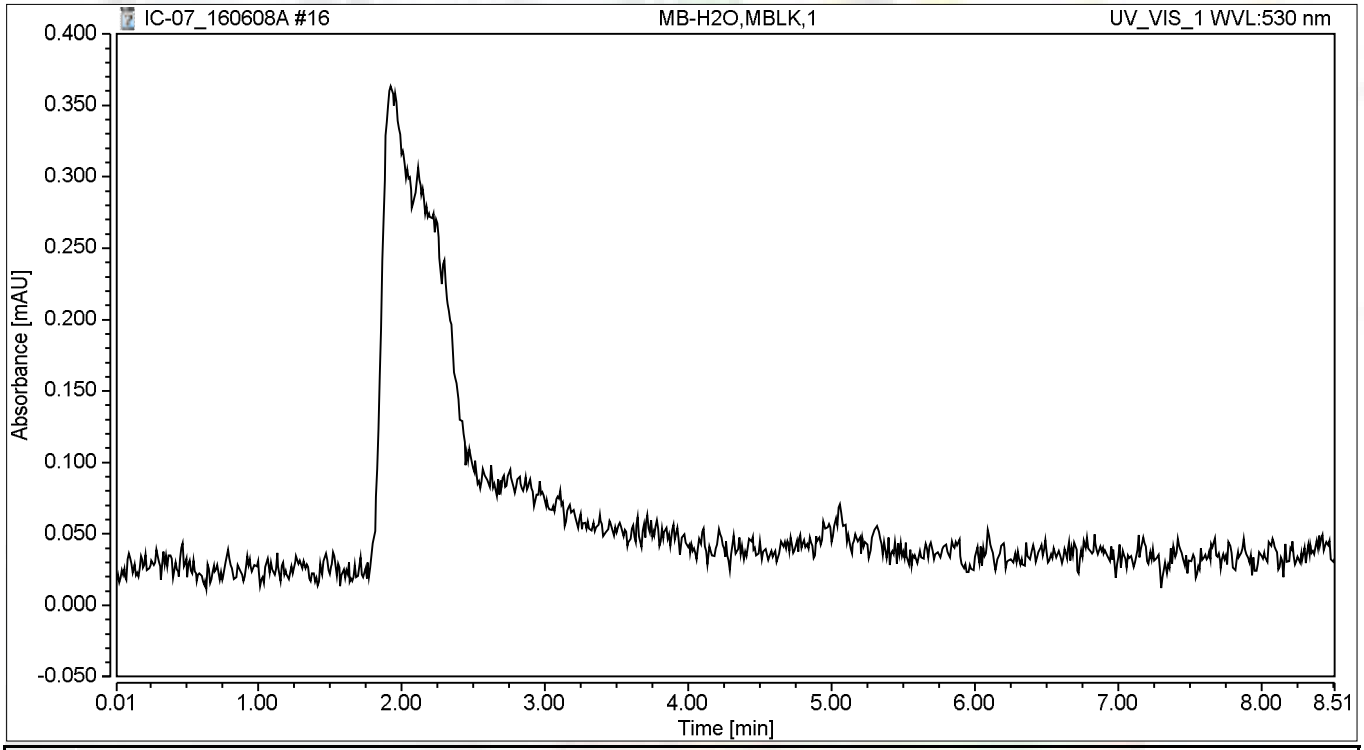
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

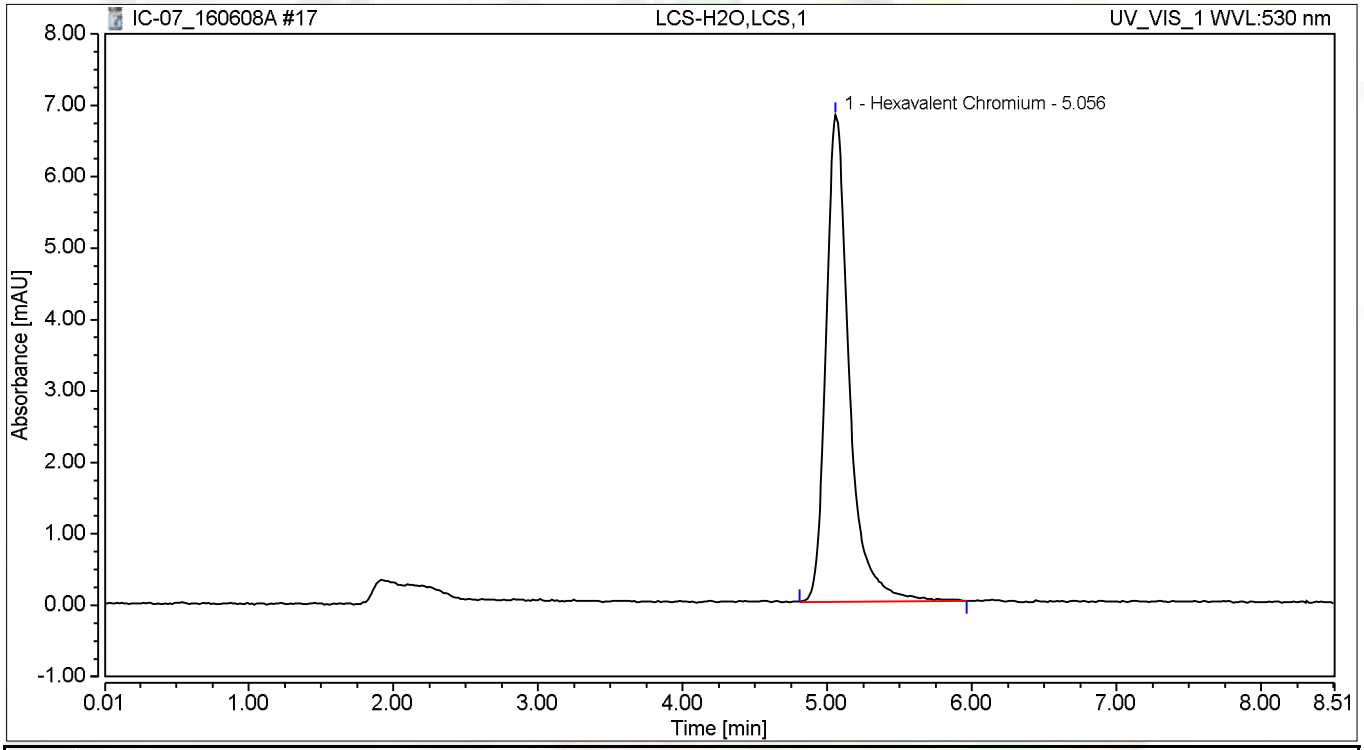
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

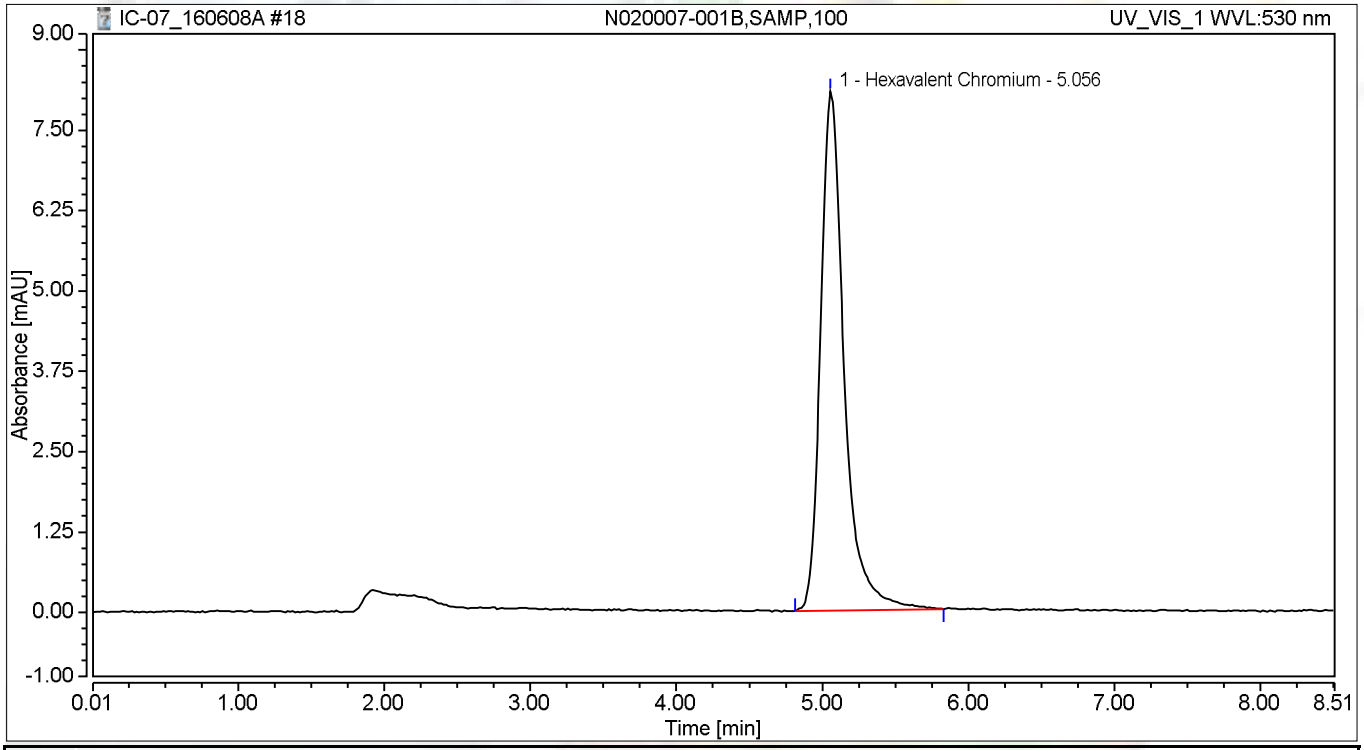
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.269	6.816	100.00	100.00	5.1588
Total:			**1.269**	**6.816**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-001B,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

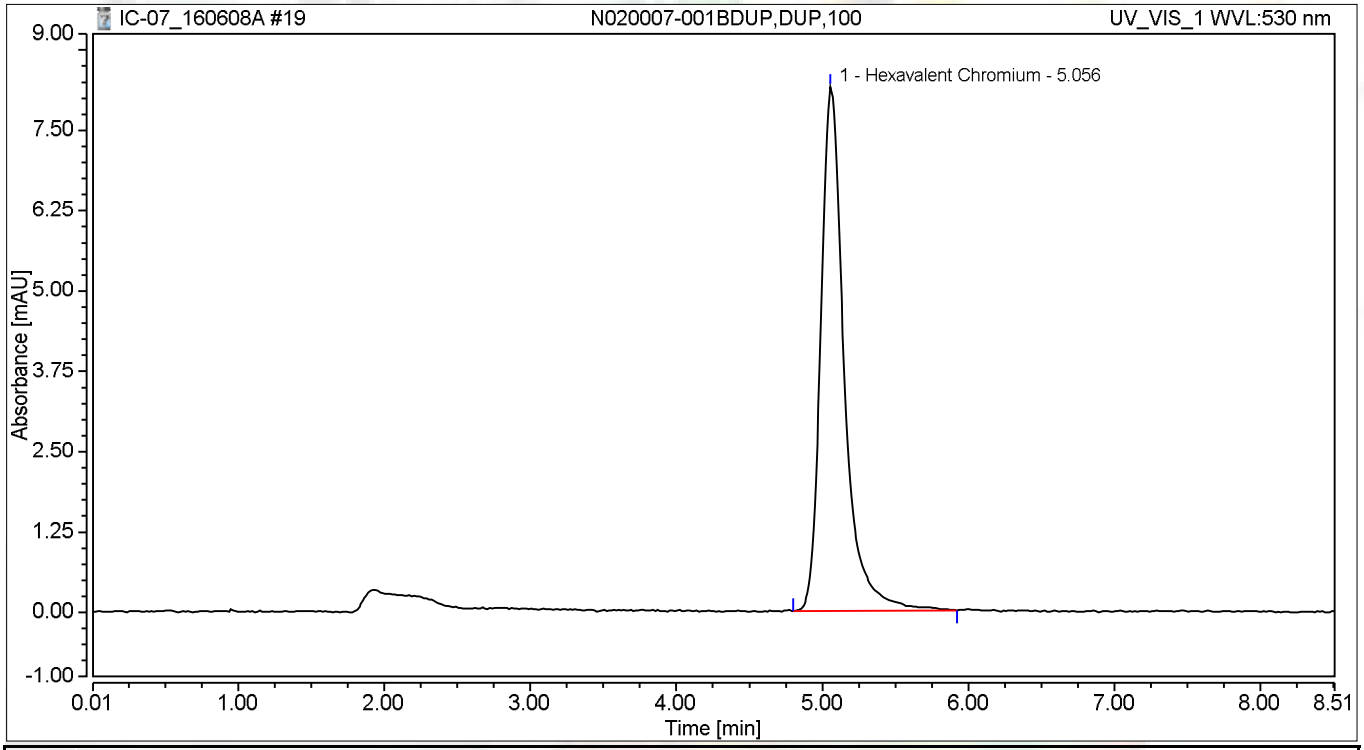
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.514	8.075	100.00	100.00	6.1527
Total:			**1.514**	**8.075**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-001BDUP,DUP,100**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

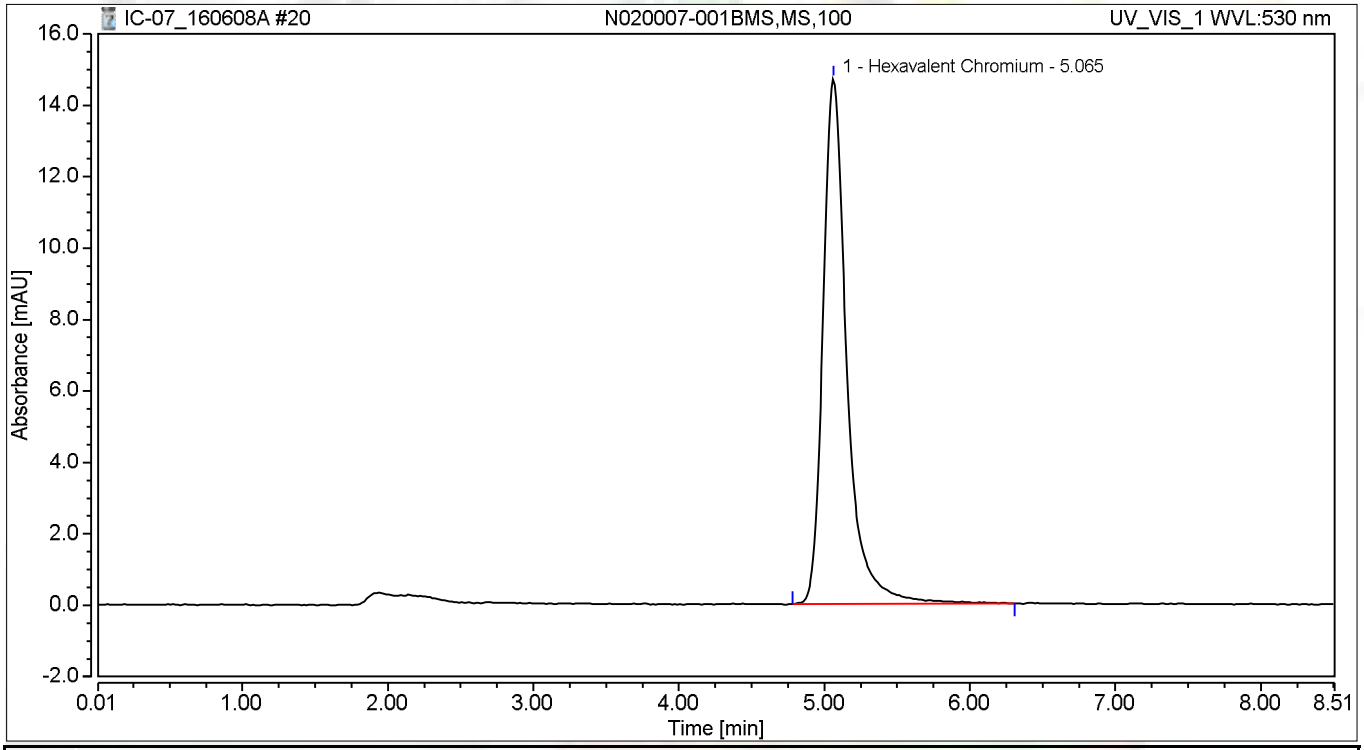
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.521	8.158	100.00	100.00	6.1796
Total:			**1.521**	**8.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-001BMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

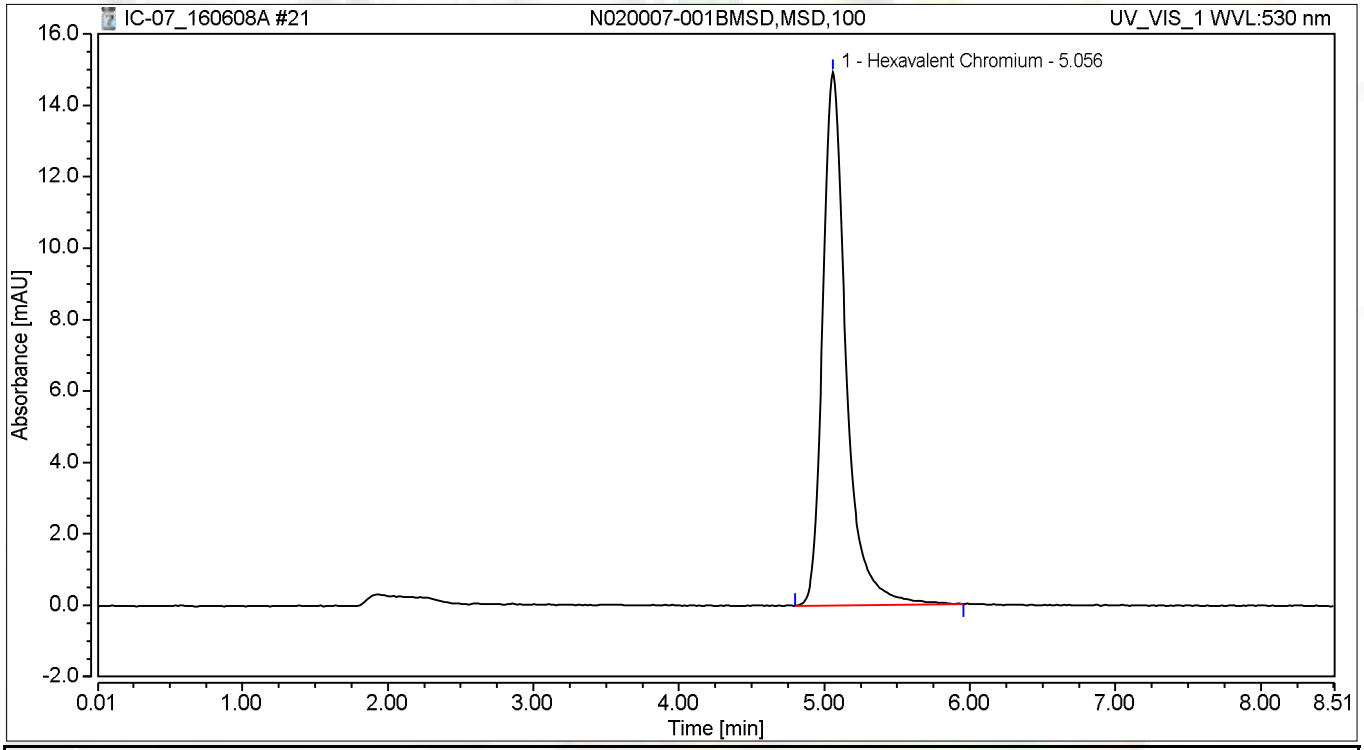
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.806	14.717	100.00	100.00	11.4021
Total:			**2.806**	**14.717**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-001BMSD,MSD,100**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

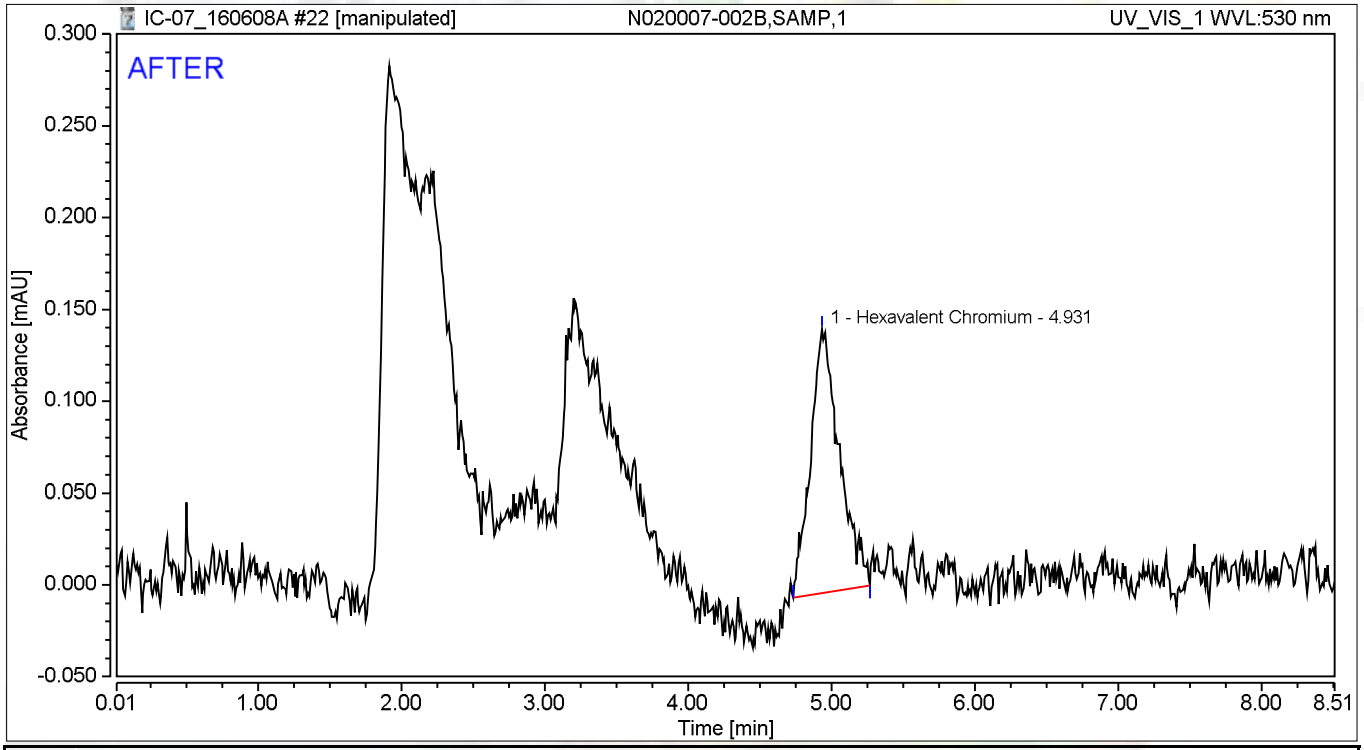
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.791	14.946	100.00	100.00	11.3436
Total:			**2.791**	**14.946**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-002B,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.931	0.034	0.144	100.00	100.00	0.1379
Total:			**0.034**	**0.144**	**100.00**	**100.00**	

6/9/2016

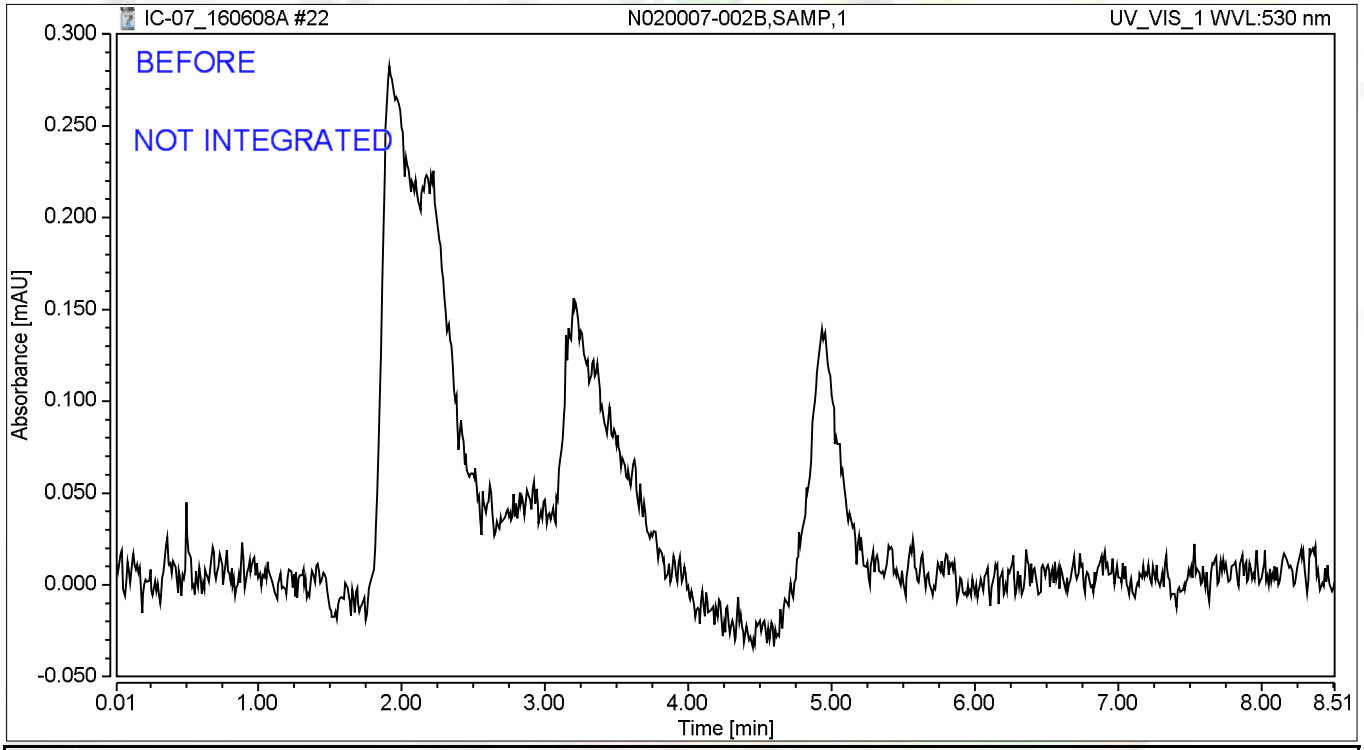
6/22/2016

Chromatogram and Results

Injection Details

Injection Name:	**N020007-002B,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

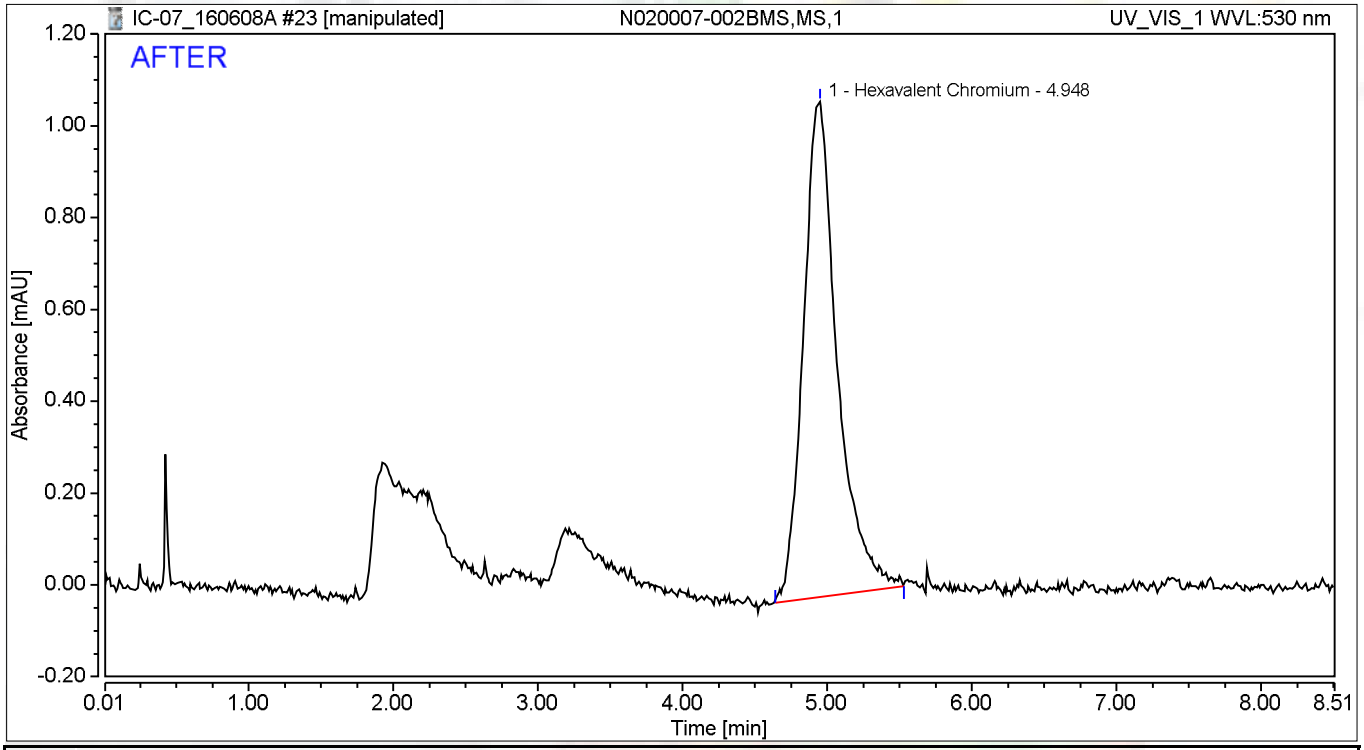
6/9/2016

Chromatogram and Results

Injection Details

Injection Name:	**N020007-002BMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.948	0.292	1.079	100.00	100.00	1.1883
Total:			**0.292**	**1.079**	**100.00**	**100.00**	

6/9/2016

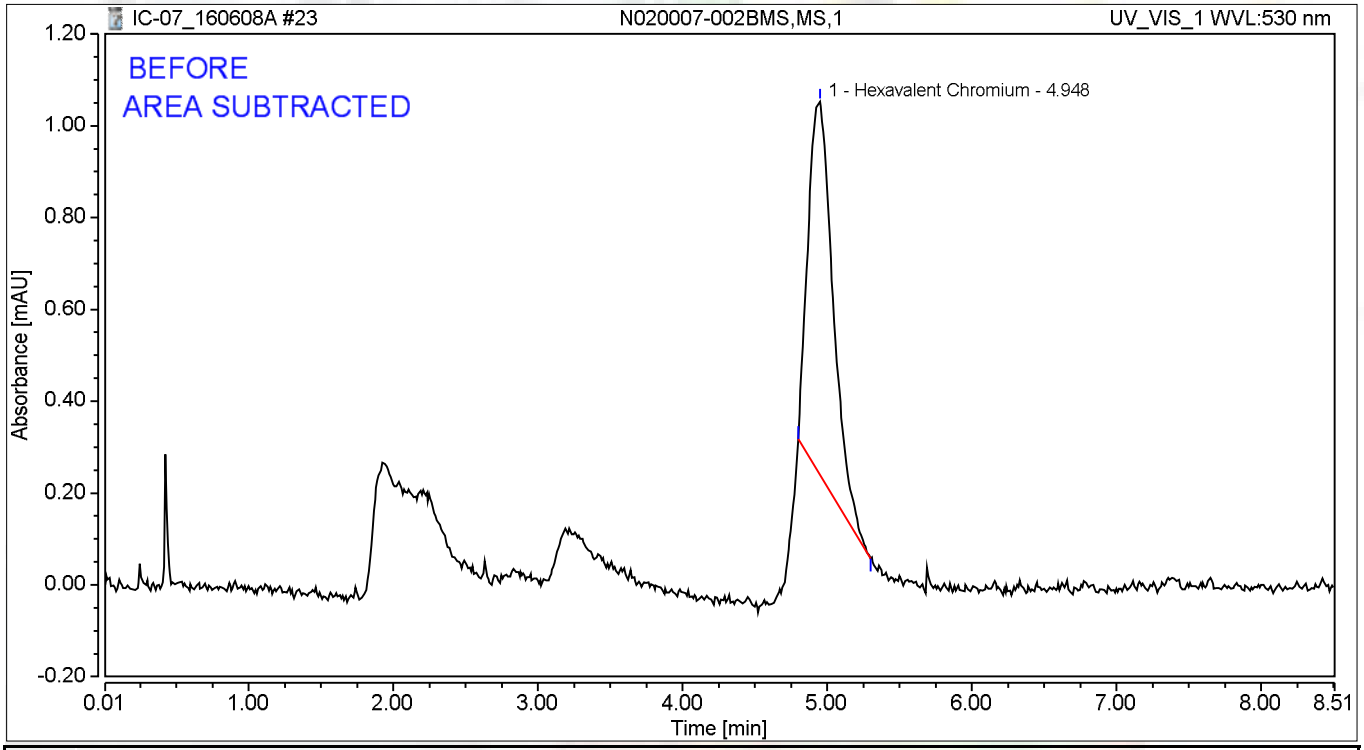
6/22/2016

Chromatogram and Results

Injection Details

Injection Name:	**N020007-002BMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.948	0.162	0.813	100.00	100.00	0.6599
Total:			**0.162**	**0.813**	**100.00**	**100.00**	

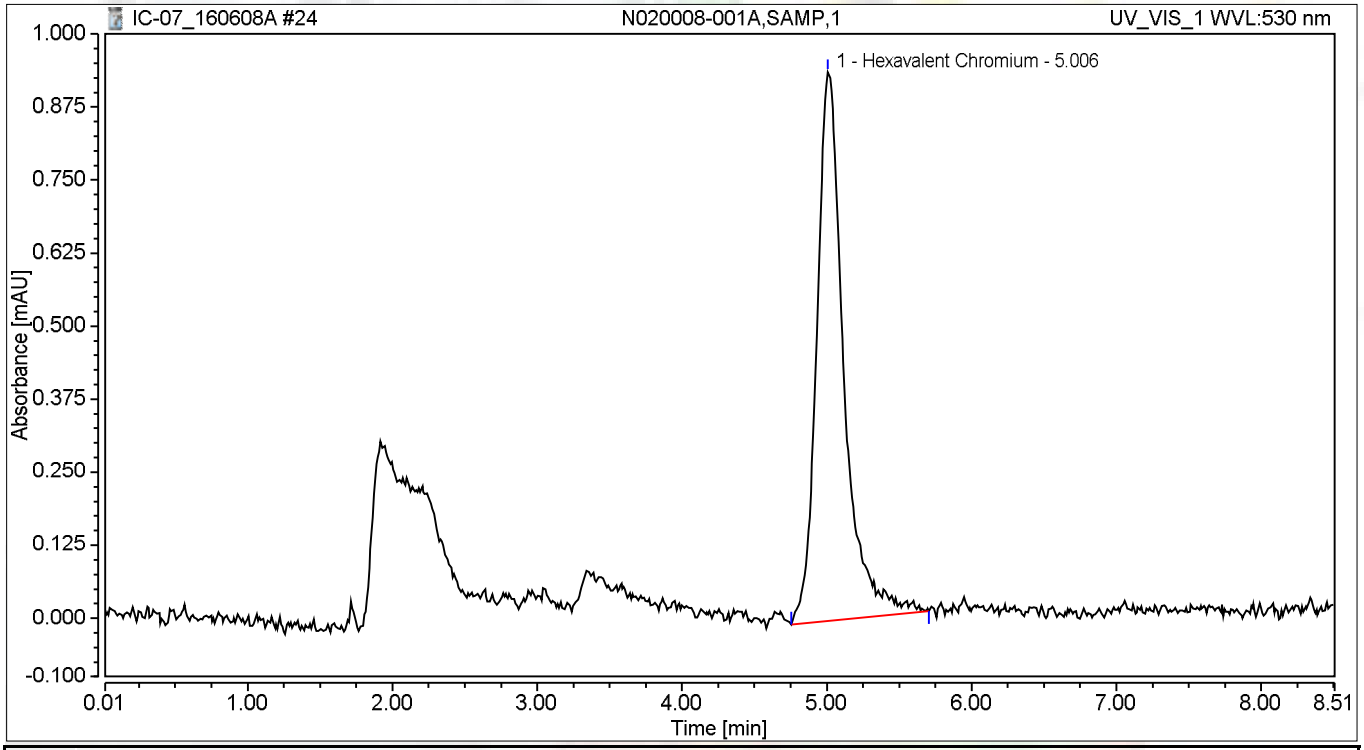
6/9/2016

Chromatogram and Results

Injection Details

Injection Name:	**N020008-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

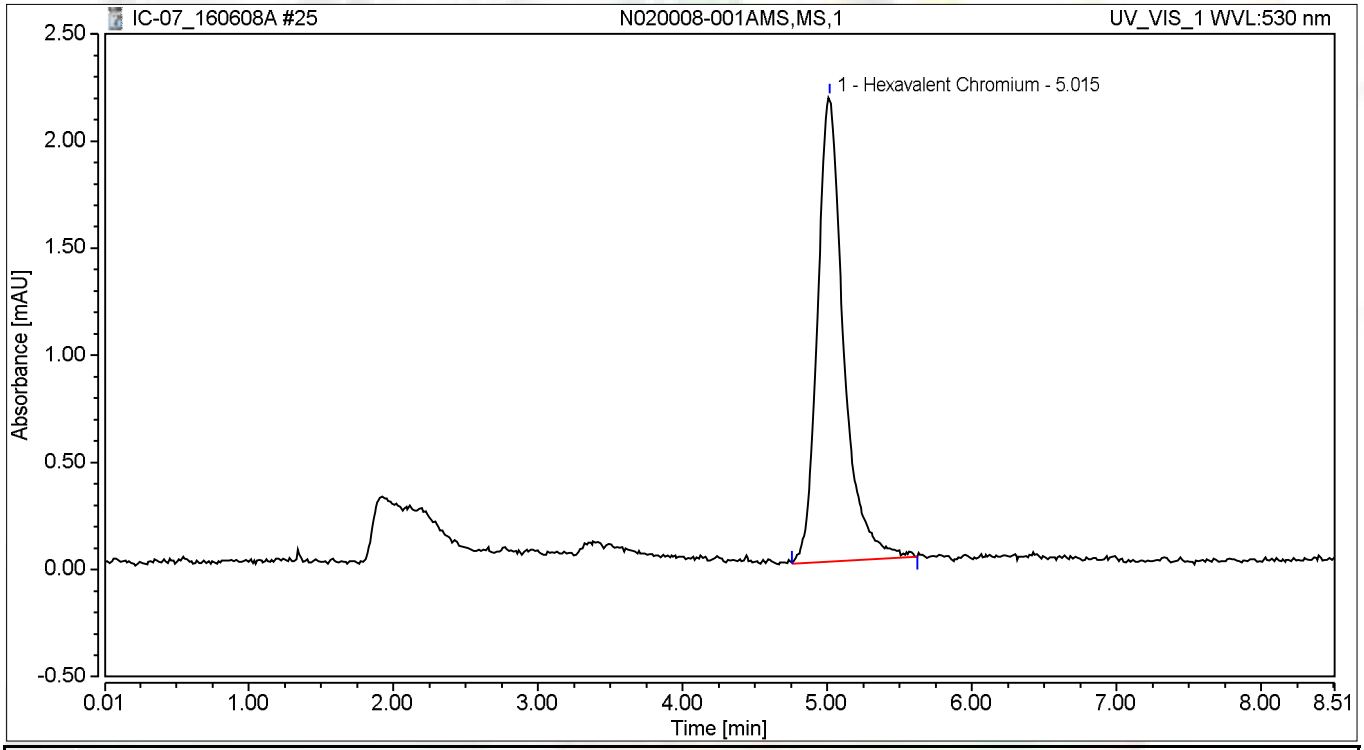
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.204	0.938	100.00	100.00	0.8271
Total:			**0.204**	**0.938**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020008-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

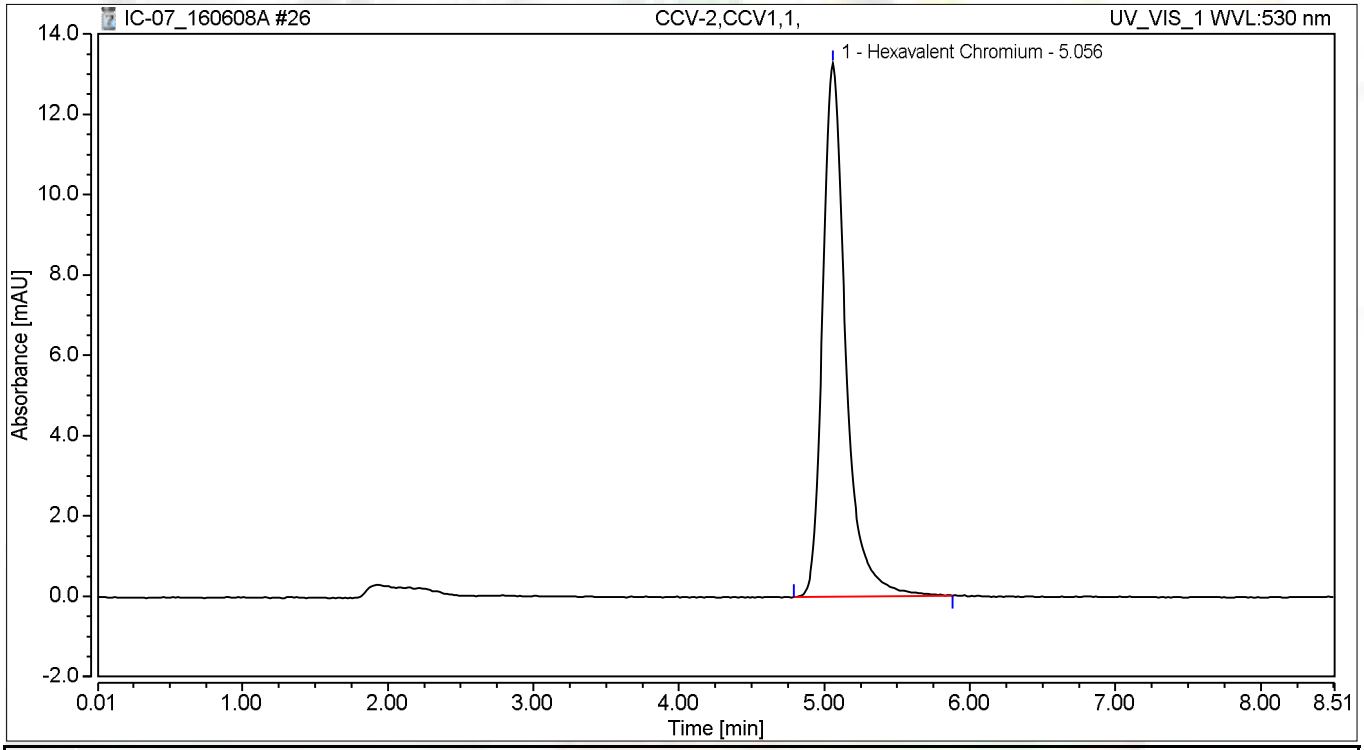
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.015	0.453	2.169	100.00	100.00	1.8401
Total:			**0.453**	**2.169**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

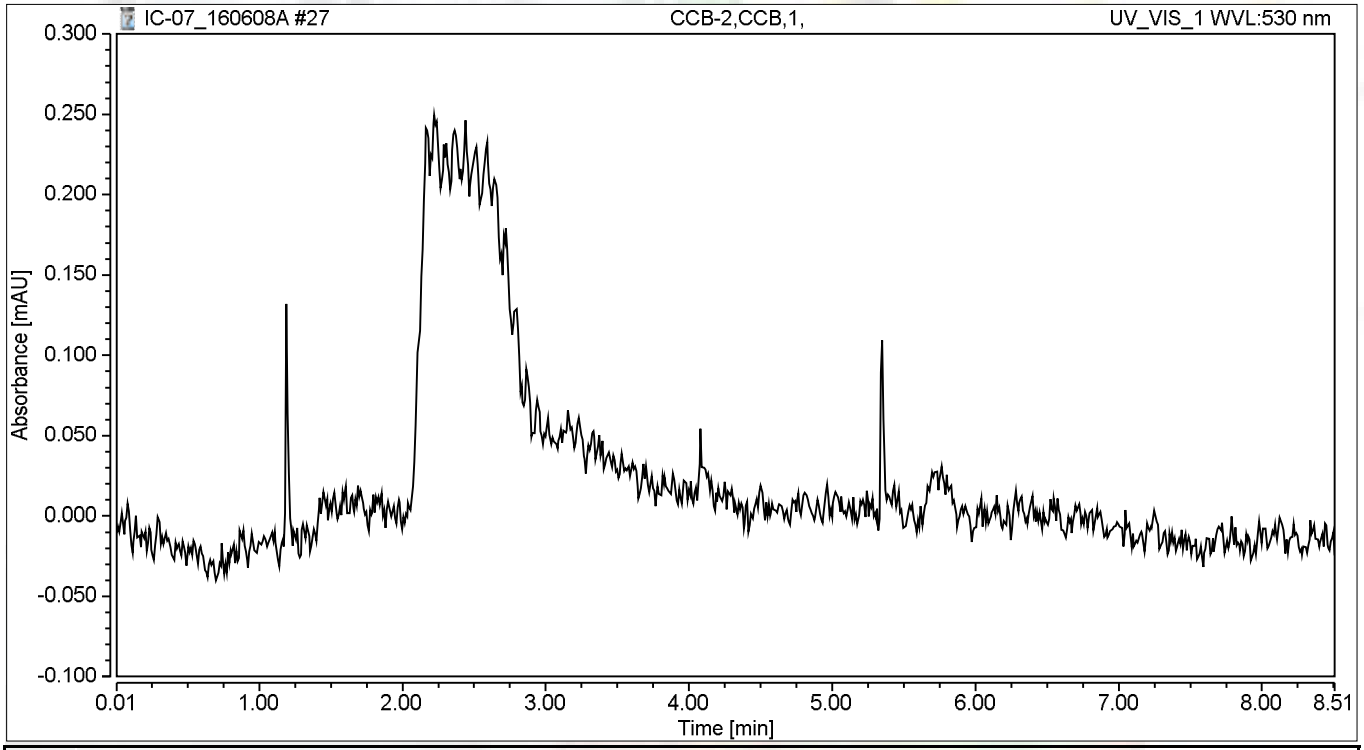
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.442	13.277	100.00	100.00	9.9253
Total:			**2.442**	**13.277**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 14:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108873 **Analyst:** LSR

ASSET #: N020008 **Date Analyzed:** 6/8/2016

Method: EAPA 2320_W

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 6/9/2016

2nd Level Reviewer: 6/22/2016 Date: —

SAMPLE CALCULATION

N020008-001C

Sample ID: **N02~~000-~~001C @ pH 7.85**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (12.45 mL)

= **0.02008 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (11.70) (0.02008 N) (1) * 1000

= 234.9360 mg**/L**

Reporting results in two significant figures,

= **230 mg/L** as CaCO3

Julia Ramit 6/9/2016

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02008 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (11.70 mL) (0.02008) (1) * 1000

= 234.9360 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **234.9360 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **230 mg/L**

Julia Ramit 6/9/2016

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.28	50	0.00	0.050	MBLK
LCS-1	8.82	50	0.10	4.90	LCS
N020006-001A	7.98	50	0.00	11.40	SAMP
N020006-002A	7.50	50	0.00	7.80	SAMP
N020008-001C	7.85	50	0.00	11.70	SAMP
N020008-002C	7.65	50	0.00	7.90	SAMP
N020006-001ADUP	7.93	50	0.00	11.20	DUP
N020006-002AMS	7.86	50	0.00	13.10	MS
N020006-002AMSD	7.92	50	0.00	13.20	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**6/8/16**	
Time:	**3:00 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R160608A**	

Silvia Ramit 6/9/2016

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	6/8/16
Time:	3:00 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	4.02	94.38	98.39	98.39		P < 1/2 T
N020006-001A	0.00	0.00	228.92	228.92	228.92		P = 0
N020006-002A	0.00	0.00	156.63	156.63	156.63		P = 0
N020008-001C	0.00	0.00	234.94	234.94	234.94		P = 0
N020008-002C	0.00	0.00	158.63	158.63	158.63		P = 0
N020006-001ADUP	0.00	0.00	224.90	224.90	224.90		P = 0
N020006-002AMS	0.00	0.00	263.05	263.05	263.05		P = 0
N020006-002AMSD	0.00	0.00	265.06	265.06	265.06		P = 0

Julia Ramit 6/9/2016

Date Analyzed:	6/8/16		Reagents:					Standardization:					P = 0
Time Started:	3:00 PM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R160608A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.28				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.82				0.02008	0.10	4.80	4.90	1	2.01	98.39	
N020006-001A	50	7.98				0.02008	0.00	11.40	11.40	1	0.00	228.92	
N020006-002A	50	7.5				0.02008	0.00	7.80	7.80	1	0.00	156.63	
N020008-001C	50	7.85				0.02008	0.00	11.70	11.70	1	0.00	234.94	
N020008-002C	50	7.65				0.02008	0.00	7.90	7.90	1	0.00	158.63	
N020006-001ADU	50	7.93				0.02008	0.00	11.20	11.20	1	0.00	224.90	
N020006-002AMS	50	7.86				0.02008	0.00	13.10	13.10	1	0.00	263.05	
N020006-002AMS	50	7.92				0.02008	0.00	13.20	13.20	1	0.00	265.06	

Silvia Ramit 6/9/2016

Matrix: H_2O

Date Extracted: 6/8/16
Time Extracted: 1552
Extracted By: [illegible]

Date Analyzed: 6/8/16
Time Analyzed: 1500
Analyzed By: [illegible]

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-1601 25B
Hydrochloric Acid: —
Sulfuric Acid: R1606084
$NaHCO_3$: CINV1606 01A

pH meter CALIBRATION!
SLOPE: 98.4%
pH 4.402 - CINV160322A
7.701 - 160309A
10.000 - 160911D

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.55	IWST160601B	5 mL	0.05N	-	-	12.50	50/10	$N_{H_2SO_4} = \frac{(265\ g/L)(5\ mL)}{(53)(V\ titrant)}$	= 0.02
	#2	1	10.53	1	1	1	-	-	12.40	1		= 0.02016129
1)	MBLK	50 mL	5.28	-	-	-	0.02008	0	10.5	50/10		Ave = 0.02008645
2)	LCS		6.82	IWST160601C	1 mL	0.05N		0.10	4.90			
3)	ND20006-001A		7.98	-	-	-		0	11.40			
4)	1 2A		7.50	-	-	-		0	7.80			
5)	ND20006-001C		7.85	-	-	-		0	11.70			
6)	1 2C		7.65	-	-	-		0	7.90			
7)	ND20006-001A DUP		7.93	-	-	-		0	11.20			
8)	ND20006-002A MS		7.86	IWST160601C	1 mL	0.05N		0	13.10			
9)	1 2A MSD		7.92	1	1	1	1	0	13.20	1		
10)												
11)												
12)												
13)												
14)												
15)												
16)				$P = \frac{(V_{pH\,8.3})(N_{H_2SO_4})(50,000)}{V_{ox}}$								
17)												
18)												
19)				$T = \frac{(V_{pH\,4.5})(N_{H_2SO_4})(50,000)}{V_{ox}}$								
20)												
	MS											
	MSD											
	LCS											

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108880
ASSET # N020008

Instrument ID: IC2
Analyst: QBM
Date Analyzed: 6/8/2016

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 6/10/2016

2nd Level Reviewer _____ Date: 6/16/2016

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

N020008_001C
For N020008_001C concentration in mg/L is calculated as follows:

Sulfate, mg/L = 6.82 * 50

= 341

Reporting result in two significant values,

Sulfate, mg/L = 340

ANALYSIS RUN LOG

DIONEX SCHEDULE - C:\DX\SCHEDULE\160518.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160518.M	..\16051901.D01	1	1	1
2	,BLANK,	..\160518.M	..\16051901.D01	1	1	1
3	AUTOCAL1R	..\160518.M	..\16051901.D01	1	1	1
4	AUTOCAL2R	..\160518.M	..\16051901.D01	1	1	1
5	AUTOCAL3R	..\160518.M	..\16051901.D01	1	1	1
6	AUTOCAL4R	..\160518.M	..\16051901.D01	1	1	1
7	AUTOCAL5R	..\160518.M	..\16051901.D01	1	1	1
8	AUTOCAL6R	..\160518.M	..\16051901.D01	1	1	1
9	,ICV,ICV,1,	..\160518.M	..\16051901.D01	1	1	1
10	,ICB,ICB,1,	..\160518.M	..\16051901.D01	1	1	1
11	,MB-H2O,MBLK,1,	..\160518.M	..\16051901.D01	1	1	1
12	,LCS-H2O,LCS,1,	..\160518.M	..\16051901.D01	1	1	1
13	,N019613-001A,SAMP,	..\160518.M	..\16051901.D13	1	1	1
14	,N019613-001A,SAMP,	..\160518.M	..\16051901.D14	1	1	1
15	,N019613-002A,SAMP,	..\160518.M	..\16051901.D15	1	1	1
16	,N019613-002A,SAMP,	..\160518.M	..\16051901.D16	1	1	1
17	,N019613-001ADUP,DU	..\160518.M	..\16051901.D17	1	1	1
18	,N019613-002AMS,MS,	..\160518.M	..\16051901.D18	1	1	1
19	,N019613-002AMSD,MS	..\160518.M	..\16051901.D19	1	1	1
20	,N019613-001ADUP,DU	..\160518.M	..\16051901.D20	1	1	1
21	,CCV-1,CCV,1,	..\160518.M	..\16051901.D21	1	1	1
22	,CCB-1,CCB,1,	..\160518.M	..\16051901.D22	1	1	1
23	,N019613-002AMS,MS,	..\160518.M	..\16051901.D23	1	1	1
24	,N019613-002AMSD,MS	..\160518.M	..\16051901.D24	1	1	1
25	,N019651-001A,SAMP,	..\160518.M	..\16051901.D25	1	1	1
26	,N019651-002A,SAMP,	..\160518.M	..\16051901.D26	1	1	1
27	,N019651-003C,SAMP,	..\160518.M	..\16051901.D27	1	1	1
28	,N019651-004C,SAMP,	..\160518.M	..\16051901.D28	1	1	1
29	,N019651-005B,SAMP,	..\160518.M	..\16051901.D29	1	1	1
30	,N019651-006B,SAMP,	..\160518.M	..\16051901.D30	1	1	1
31	,N019651-007B,SAMP,	..\160518.M	..\16051901.D31	1	1	1
32	,N019651-002ADUP,DU	..\160518.M	..\16051901.D32	1	1	1
33	,CCV-2,CCV,1,	..\160518.M	..\16051901.D33	1	1	1
34	,CCB-2,CCB,1,	..\160518.M	..\16051901.D34	1	1	1
35	,N019651-002AMS,MS,	..\160518.M	..\16051901.D35	1	1	1
36	,N019651-002AMSD,MS	..\160518.M	..\16051901.D36	1	1	1
37	,N019727-001A,SAMP,	..\160518.M	..\16051901.D37	1	1	1
38	,N019727-002A,SAMP,	..\160518.M	..\16051901.D38	1	1	1
39	,N019727-003A,SAMP,	..\160518.M	..\16051901.D39	1	1	1
40	,N019727-004A,SAMP,	..\160518.M	..\16051901.D40	1	1	1
41	,N019742-001A,SAMP,	..\160518.M	..\16051901.D41	1	1	1
42	,N019742-002A,SAMP,	..\160518.M	..\16051901.D42	1	1	1
43	,N019742-002AMS,MS,	..\160518.M	..\16051901.D43	1	1	1
44	,N019742-001A,SAMP,	..\160518.M	..\16051901.D44	1	1	1
45	,CCV-3,CCV,1,	..\160518.M	..\16051901.D45	1	1	1
46	,CCB-3,CCB,1,	..\160518.M	..\16051901.D46	1	1	1
47	,N019742-002A,SAMP,	..\160518.M	..\16051901.D47	1	1	1
48	,N019742-001A,SAMP,	..\160518.M	..\16051901.D48	1	1	1
49	,N019742-002A,SAMP,	..\160518.M	..\16051901.D49	1	1	1
50	,N019743-003A,SAMP,	..\160518.M	..\16051901.D50	1	1	1
51	,N019743-003A,SAMP,	..\160518.M	..\16051901.D51	1	1	1
52	,N019743-003A,SAMP,	..\160518.M	..\16051901.D52	1	1	1
53	,N019743-006A,SAMP,	..\160518.M	..\16051901.D53	1	1	1
54	,N019743-006A,SAMP,	..\160518.M	..\16051901.D54	1	1	1
55	,N019743-006A,SAMP,	..\160518.M	..\16051901.D55	1	1	1
56	,CCV-4,CCV,1,	..\160518.M	..\16051901.D56	1	1	1
57	,CCB-4,CCB,1,	..\160518.M	..\16051901.D57	1	1	1
58	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

5/19/2016

DIONEX SCHEDULE - C:\DX\SCHEDULE\160608.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160518.M	..\16060801.D01	1	1	1
2	,CCV-1,CCV,1,	..\160518.M	..\16060801.D02	1	1	1
3	,CCB-1,CCB,1,	..\160518.M	..\16060801.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\160518.M	..\16060801.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\160518.M	..\16060801.D05	1	1	1
6	,N020006-001A,SAMP,	..\160518.M	..\16060801.D06	1	1	1
7	,N020006-001ADUP,DU	..\160518.M	..\16060801.D07	1	1	1
8	,N020006-002A,SAMP,	..\160518.M	..\16060801.D08	1	1	1
9	,N020006-002AMS,MS,	..\160518.M	..\16060801.D09	1	1	1
10	,N020006-002AMSD,MS	..\160518.M	..\16060801.D10	1	1	1
11	,N020006-001A,SAMP,	..\160518.M	..\16060801.D11	1	1	1
12	,N020006-001ADUP,DU	..\160518.M	..\16060801.D12	1	1	1
13	,N020006-002A,SAMP,	..\160518.M	..\16060801.D13	1	1	1
14	,CCV-2,CCV,1,	..\160518.M	..\16060801.D14	1	1	1
15	,CCB-2,CCB,1,	..\160518.M	..\16060801.D15	1	1	1
16	,N020006-002AMS,MS,	..\160518.M	..\16060801.D16	1	1	1
17	,N020006-002AMSD,MS	..\160518.M	..\16060801.D17	1	1	1
18	,N020007-002A,SAMP,	..\160518.M	..\16060801.D18	1	1	1
19	,N020007-002ADUP,DU	..\160518.M	..\16060801.D19	1	1	1
20	,N020007-002AMS,MS,	..\160518.M	..\16060801.D20	1	1	1
21	,N020007-002AMSD,MS	..\160518.M	..\16060801.D21	1	1	1
22	,N020007-002A,SAMP,	..\160518.M	..\16060801.D22	1	1	1
23	,N020008-001C,SAMP,	..\160518.M	..\16060801.D23	1	1	1
24	,N020008-001C,SAMP,	..\160518.M	..\16060801.D24	1	1	1
25	,N020008-002C,SAMP,	..\160518.M	..\16060801.D25	1	1	1
26	,CCV-3,CCV,1,	..\160518.M	..\16060801.D26	1	1	1
27	,CCB-3,CCB,1,	..\160518.M	..\16060801.D27	1	1	1
28	,N020008-002C,SAMP,	..\160518.M	..\16060801.D28	1	1	1
29	,CCV-4,CCV,1,	..\160518.M	..\16060801.D29	1	1	1
30	,CCB-4,CCB,1,	..\160518.M	..\16060801.D30	1	1	1
31	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

6/9/2016

INITIAL CALIBRATION DATA SUMMARY

DIONEX METHOD PARAMETERS - 160518.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS

Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\14120201.D02

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

5/19/2016

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

5/19/2016

Component Table -- Last Modified: 10:40 on Wed, 18 May 2016

Component # 1 Fluoride Retention Time 2.53
Reference Comp. Fluoride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 3.55722E-002
K1 = 2.87185E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	16218	1783
3	5.00000E-001	159154	15771
4	1.00000E+000	315880	33709
5	2.50000E+000	848683	89437
6	5.00000E+000	1737026	193582

Component # 2 Chloride Retention Time 3.75
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.23525E-002
K1 = 3.71879E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	136336	13309
3	1.00000E+000	253652	26331
4	2.50000E+000	629841	66684
5	5.00000E+000	1296522	140689
6	1.00000E+001	2692236	307986

Component # 3 Nitrite Retention Time 4.57
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 2.39496E-002
K1 = 2.08065E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	28601	2208
3	5.00000E-001	225551	18168
4	1.00000E+000	448317	36000
5	2.50000E+000	1175274	96093
6	5.00000E+000	2402805	206975

Component # 4 Bromide Retention Time 5.53
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -7.51719E-003
K1 = 8.58994E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	25977	2270
3	5.00000E-001	55950	4866
4	1.00000E+000	114862	9110
5	2.50000E+000	300032	23719
6	5.00000E+000	579450	46913

5/19/2016

Component # 5 Nitrate Retention Time 6.25
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 3.59213E-002
K1 = 1.46938E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	39630	2723
3	5.00000E-001	301106	22252
4	1.00000E+000	620536	47017
5	2.50000E+000	1654250	128202
6	5.00000E+000	3396858	270885

Component # 6 Phosphate Retention Time 8.15
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.79421E-002
K1 = 4.20410E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	23201	1531
3	5.00000E-001	115179	6567
4	1.00000E+000	229436	13046
5	2.50000E+000	580656	34328
6	5.00000E+000	1190475	68236

Component # 7 Sulfate Retention Time 9.27
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.51871E-001
K1 = 5.10384E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	101696	4950
3	2.00000E+000	369766	20169
4	5.00000E+000	905080	51248
5	1.00000E+001	1863321	105826
6	2.00000E+001	3929008	230257

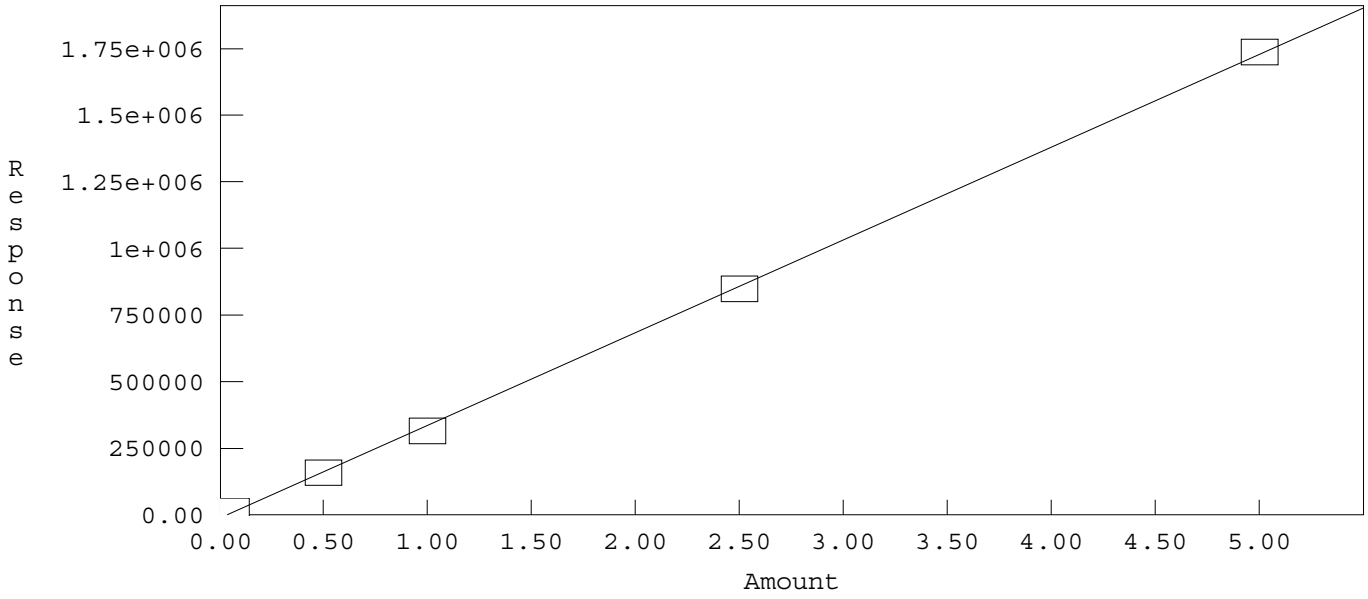
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

5/19/2016

Method: 160518.MET - Last Updated: 10:40 on Wed, 18 May 2016

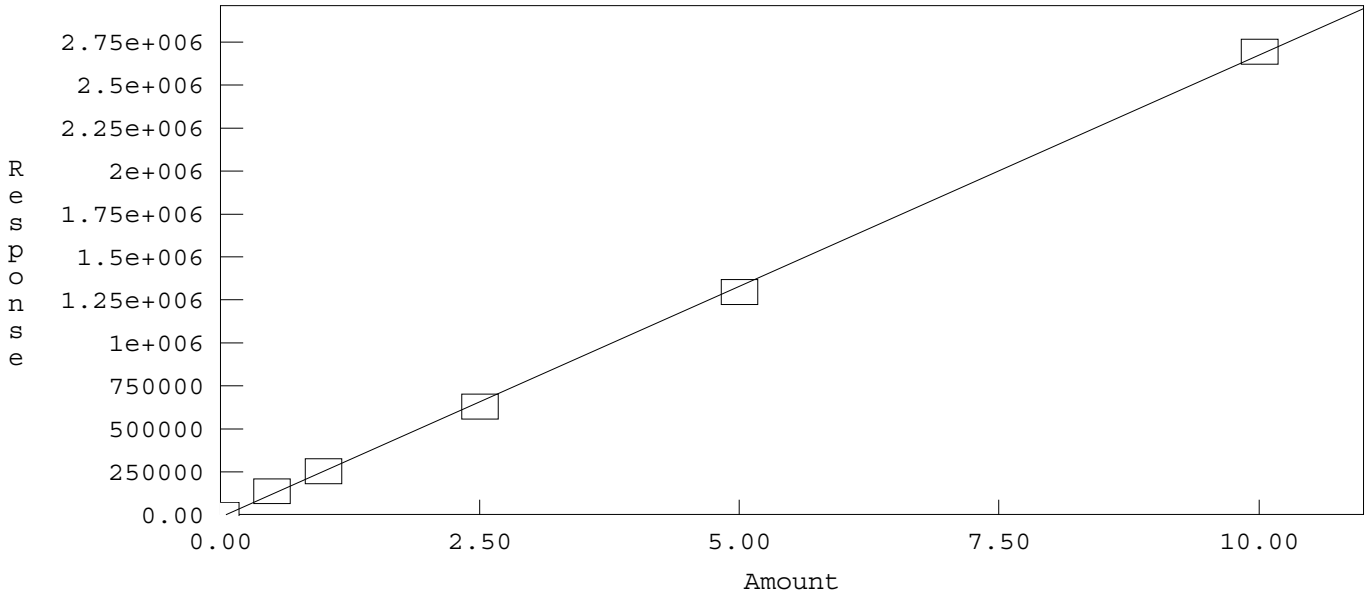
Component: Fluoride
Fit Type: Linear
r^2 = 0.999631
Amt = Resp * 2.872e-006 + 0.03557
Resp = Amt * 3.482e+005 + -1.239e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160518.MET

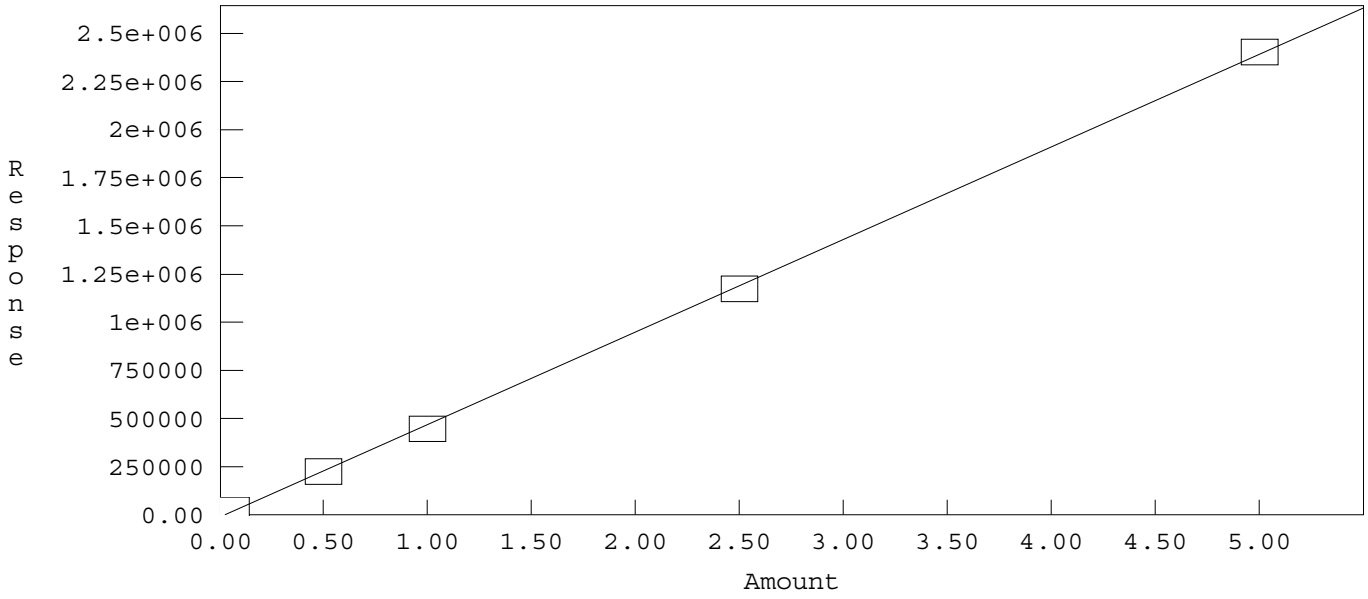
Component: Chloride
Fit Type: Linear
r^2 = 0.999491
Amt = Resp * 3.719e-006 + 0.06235
Resp = Amt * 2.689e+005 + -1.677e+004
Standardization: External
Calibration: Area

5/19/2016



Method: C:\DX\METHOD\160518.MET

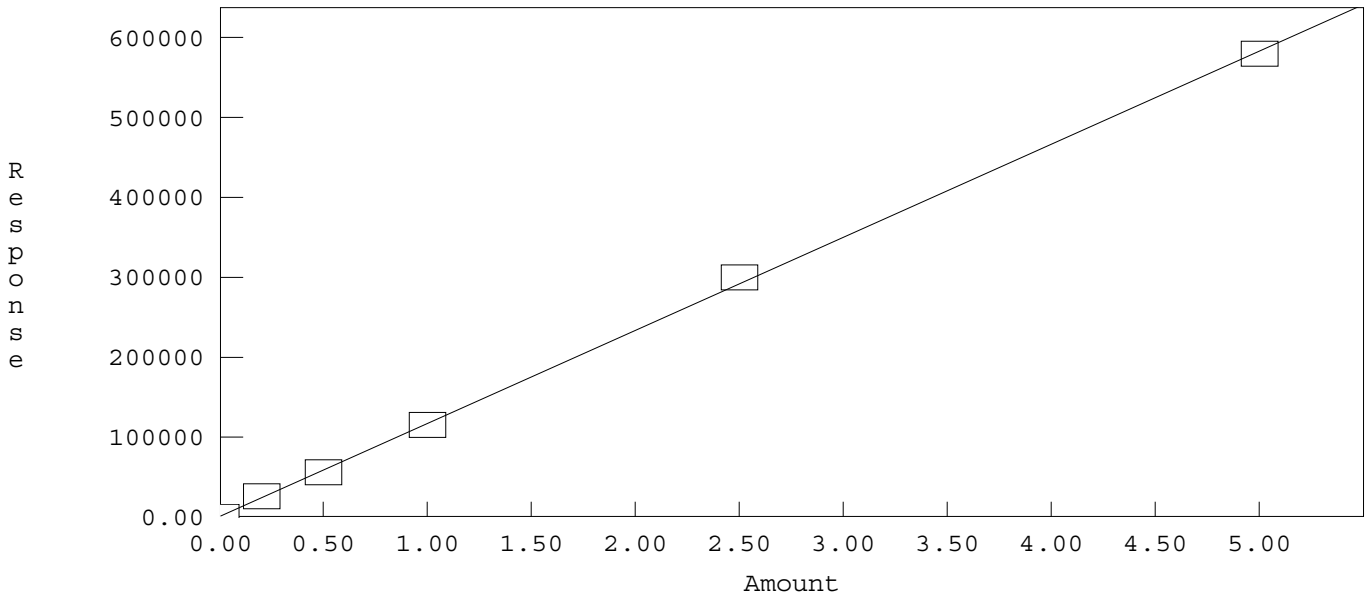
Component: Nitrite
Fit Type: Linear
r² = 0.999730
Amt = Resp * 2.081e-006 + 0.02395
Resp = Amt * 4.806e+005 + -1.151e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160518.MET

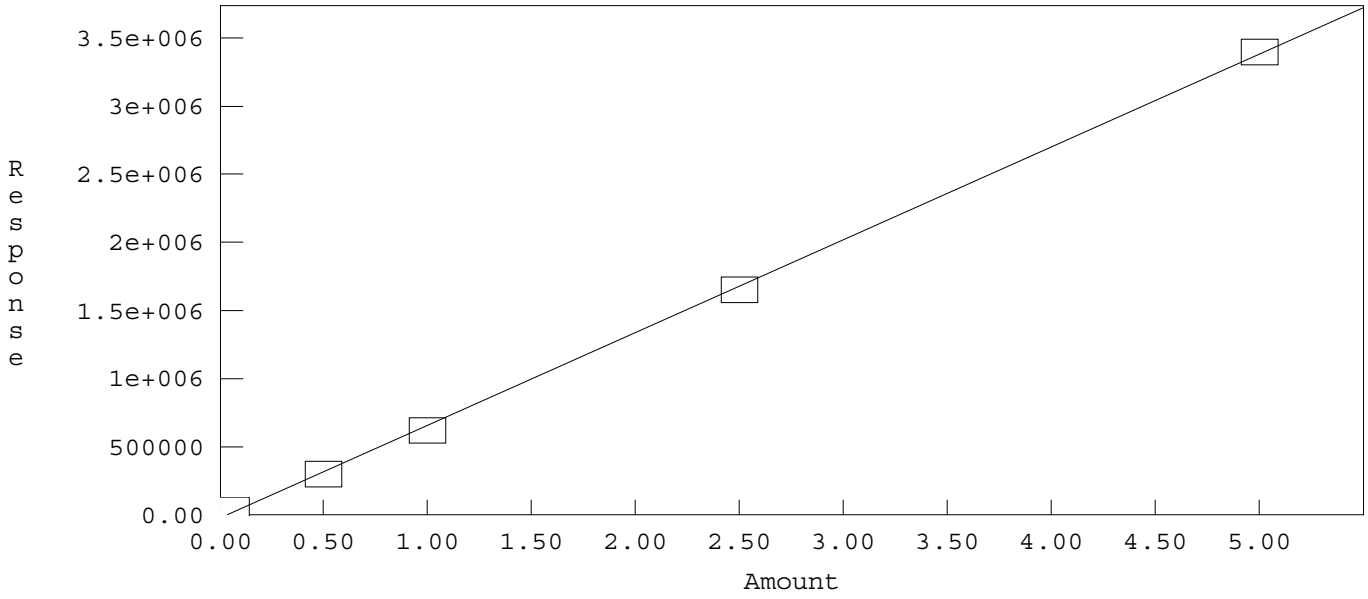
Component: Bromide
Fit Type: Linear
r² = 0.999608
Amt = Resp * 8.59e-006 + -0.007517
Resp = Amt * 1.164e+005 + 875.1
Standardization: External
Calibration: Area

2 5/19/2016



Method: C:\DX\METHOD\160518.MET

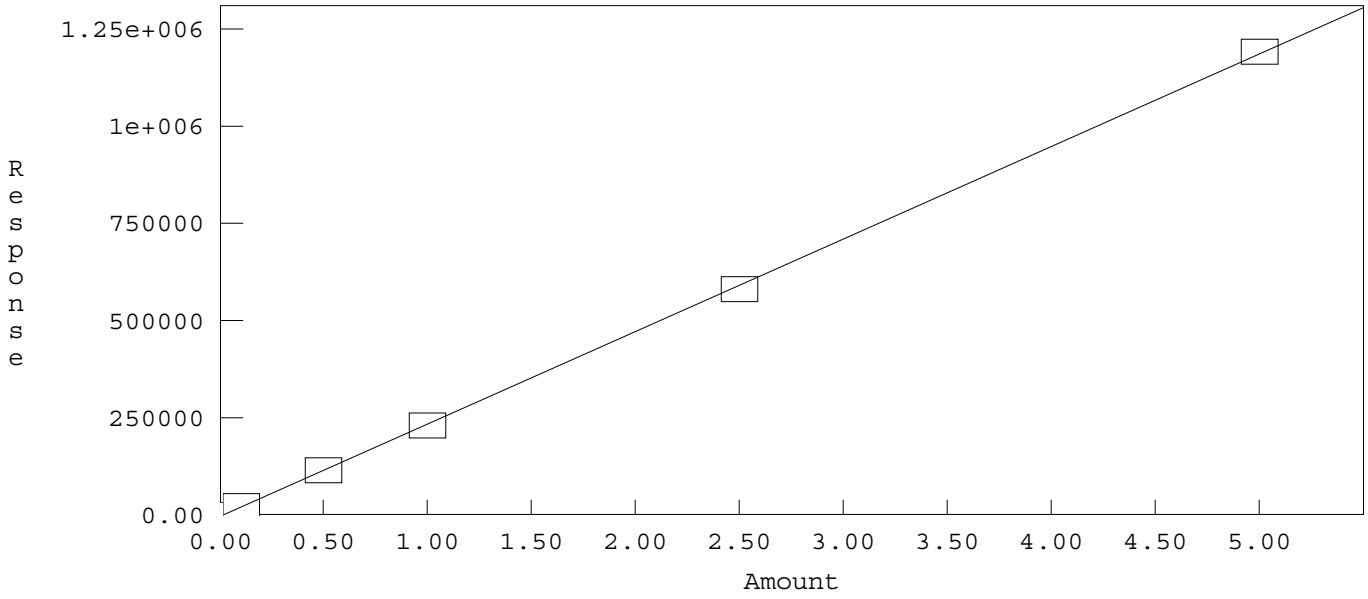
Component: Nitrate
Fit Type: Linear
r^2 = 0.999560
Amt = Resp * 1.469e-006 + 0.03592
Resp = Amt * 6.806e+005 + -2.445e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160518.MET

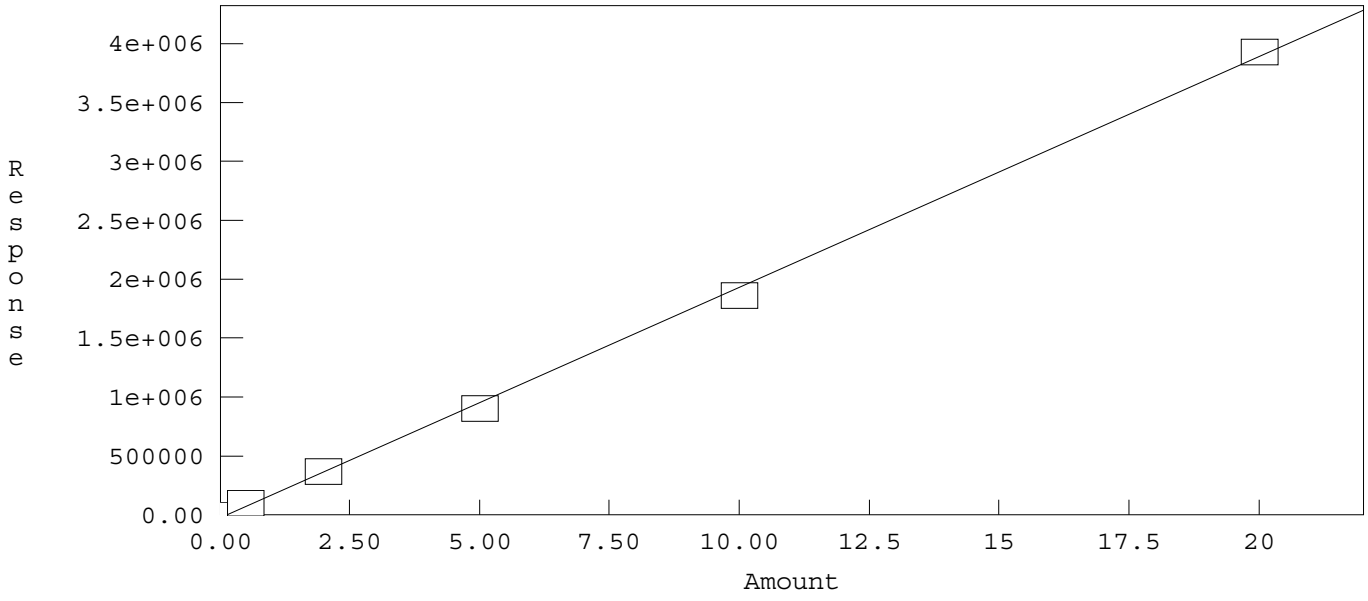
Component: Phosphate
Fit Type: Linear
r^2 = 0.999836
Amt = Resp * 4.204e-006 + 0.01794
Resp = Amt * 2.379e+005 + -4268
Standardization: External
Calibration: Area

5/19/2016



Method: C:\DX\METHOD\160518.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999110
Amt = Resp * 5.104e-006 + 0.1519
Resp = Amt * 1.959e+005 + -2.976e+004
Standardization: External
Calibration: Area



5/19/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **ICV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **5/18/2016**	SeqNo: **2348097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.495	0.50	2.500	0	99.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.515	0.50	2.500	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.429	0.50	2.500	0	97.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.514	0.50	2.500	0	101	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.435	0.50	2.500	0	97.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **ICV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **5/18/2016**	SeqNo: **2348116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.910	0.50	5.000	0	98.2	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.892	0.50	5.000	0	97.8	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.928	0.50	5.000	0	98.6	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.074	0.50	5.000	0	101	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.896	0.50	5.000	0	97.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **ICB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **5/18/2016**	SeqNo: **2348098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	ICB	SampType:	ICB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ICB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	5/18/2016	SeqNo:	2348117

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-1	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	CCB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348119

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-2	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	CCB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348128

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-3	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	CCB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348133

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-4	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	CCB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348135

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 6/8/2016

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.75	
CCV-2	Chloride	3.75	
CCV-3	Chloride	3.74	
CCV-4	Chloride	3.68	
	Average	3.723	
	Lower Limit	3.523	
	Upper Limit	3.923	
MB-R108880_CL	Chloride	0	N.A
LCS-R108880_CL	Chloride	3.76	PASS
N020006-001ADUP	Chloride	3.74	PASS
N020006-002AMS	Chloride	3.70	PASS
N020006-002AMSD	Chloride	3.73	PASS
N020008-001C	Chloride	3.68	PASS
N020008-002C	Chloride	3.75	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 6/8/2016

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.21	
CCV-2	Sulfate	9.17	
CCV-3	Sulfate	9.18	
CCV-4	Sulfate	9.05	
	Average	9.133	
	Lower Limit	8.933	
	Upper Limit	9.333	
MB-R108880_SO4	Sulfate	0	N.A
LCS-R108880_SO4	Sulfate	9.23	PASS
N020006-001ADUP	Sulfate	9.22	PASS
N020006-002AMS	Sulfate	9.11	PASS
N020006-002AMSD	Sulfate	9.17	PASS
N020008-001C	Sulfate	9.22	PASS
N020008-002C	Sulfate	9.23	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

SM 3500-Cr B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108989 **Analyst:** QBM

ASSET #: N020008 **Date Analyzed:** 6/16/16

Method: 3500_Cr

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 6/21/2016

2nd Level Reviewer _____ Date: 6/21/2016

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N020008-002A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 312.93 * 2

= 625.86 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 630

6/21/2016

INITIAL CALIBRATION DATA SUMMARY

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	6/16/2016
Organisation	(None Entered)	Time of Report	2:51:50
Information	(None Entered)		

Calibration - EPA 3500_CRB_06162016.fqc

Operator Name	(None Entered)
Instrument ID	152119

Calibration Method - EPA 3500_CRB_06162016.fqc

Description	Hexavalent Chromium by EPA 7196 (Colorimetric)		
Operator Name	QBM		
Quant Mode	Single Lambda	Standards	5
Lambda 1	540.0 nm	Replicates	1
Lambda 2	Off	Initial Curve Fit	Linear
Lambda 3	Off	Conc. Units	ug/L
Integ. Time	00:00:01	Conc. Dec. Places	3
Lamp Change	325.0 nm	Flier Detection	Off
Bandwidth	2.0 nm	Valid Until	6/16/2017
Method Status	Unlocked		

Standards Table - EPA 3500_CRB_06162016.fqc

Standard	Conc.	Use	540.0nm	Errors
Standard01				
	10.000	Yes	0.008	None
Standard02				
	50.000	Yes	0.042	None
Standard03				
	100.000	Yes	0.083	None
Standard04				
	250.000	Yes	0.203	None
Standard05				
	500.000	Yes	0.400	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

Errors Key

None	: No Errors Detected
I	: Invalid Data

Calibration Line / Curve Statistics

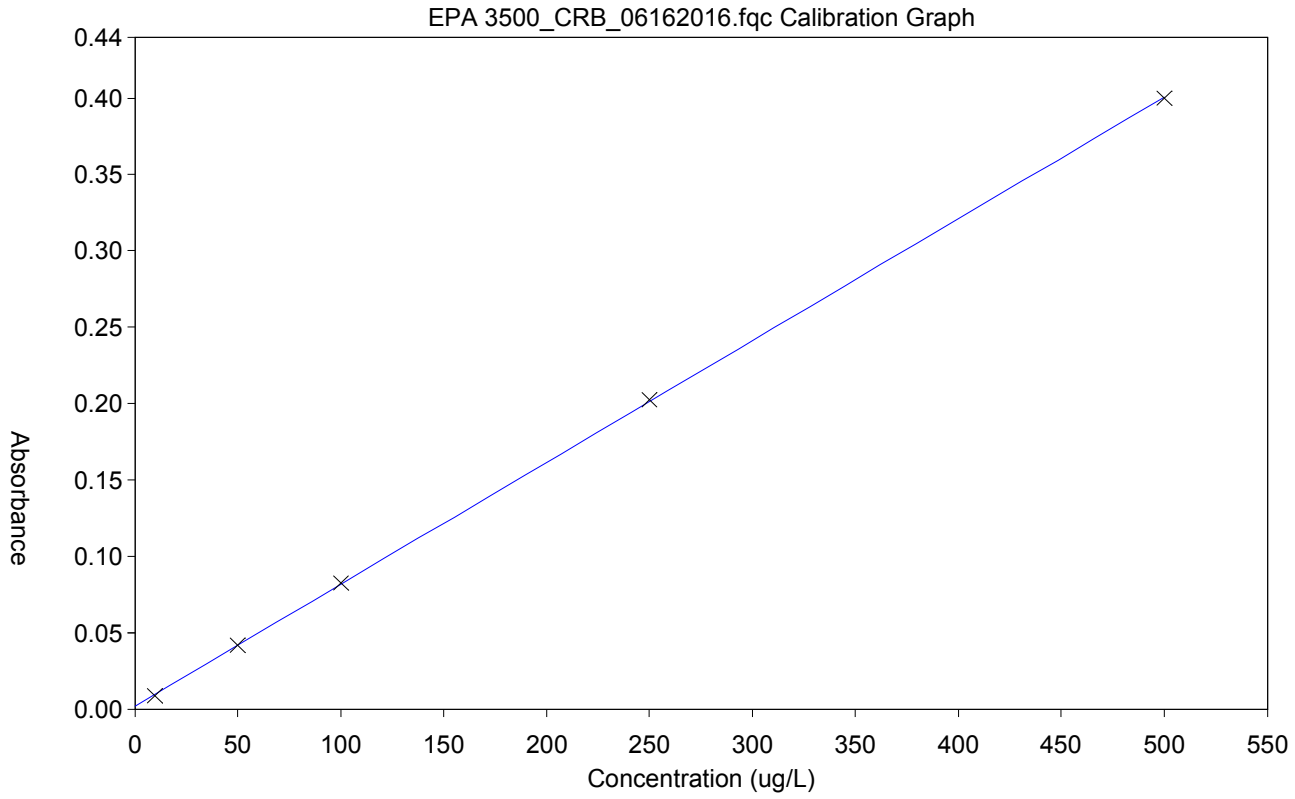
Equation	A = 0.0008 x Conc + 0.0019
Selected Fit	Linear

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	6/16/2016
Organisation	(None Entered)	Time of Report	2:51:50
Information	(None Entered)		

Coefficient	0.999948
Sum of Residuals	(<0.0001)

Calibration Graph



ICAL: IWST160310A
ICV/LCS/MS/MSD: IWST160119A
CCV: ISST150306A
10% H2SO4: R160512E
1,5-Diphenylcarbazide Solution: R160616A

6/21/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108989**
Client ID: **CCV**	Batch ID: **R108989**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/16/2016**	SeqNo: **2353614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	102.791	10	100.0	0	103	90	110				

Sample ID **ICV**	SampType: **ICV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108989**
Client ID: **ICV**	Batch ID: **R108989**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/16/2016**	SeqNo: **2353616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	250.910	10	250.0	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108989**
Client ID: **CCB**	Batch ID: **R108989**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/16/2016**	SeqNo: **2353613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.156	10									

Sample ID **ICB**	SampType: **ICB**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108989**
Client ID: **ICB**	Batch ID: **R108989**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/16/2016**	SeqNo: **2353615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.399	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Calibration Method - EPA 3500_CRB_06162016.fqc

6/16/2016 15:00

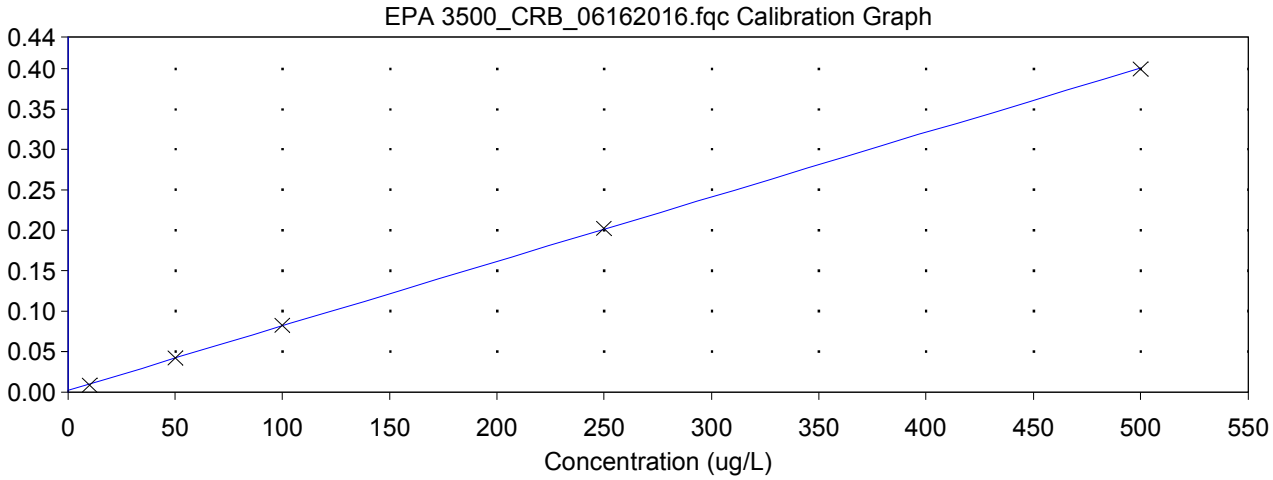
Description	Hexavalent Chromium by EPA 7196 (Colorimetric)		
Operator Name	QBM		
Quant Mode	Single Lambda	Standards	5
Lambda 1	540.0 nm	Replicates	1
Lambda 2	Off	Initial Curve Fit	Linear
Lambda 3	Off	Conc. Units	ug/L
Integ. Time	00:00:01	Conc. Dec. Places	3
Lamp Change	325.0 nm	Flier Detection	Off
Bandwidth	2.0 nm	Valid Until	6/16/2017
Method Status	Unlocked		

Calibration Line / Curve Statistics

Equation	A = 0.0008 x Conc + 0.0019
Selected Fit	Linear
Coefficient	0.999948
Sum of Residuals	(<0.0001)

Standard	Conc.	Use	540.0nm	Errors
Standard01	10.000	Yes	0.008	None
Standard02	50.000	Yes	0.042	None
Standard03	100.000	Yes	0.083	None
Standard04	250.000	Yes	0.203	None
Standard05	500.000	Yes	0.400	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.



Batch : Hexavalent Chromium_06162016001.qre

	Sample	540.0nm	Conc.	Errors
1	,ICV,ICV,1,	0.202	250.910	None
2	,ICB,ICB,1,	0.002	0.399	None
3	,MB-H2O,MBLK,1,	0.002	0.717	None
4	,LCS-H2O,LCS,1,	0.083	101.524	None
5	,N020006-001D,SAMP,1,	0.002	0.111	None
6	,N020006-002D,SAMP,2,	0.250	311.539	None
7	,N020006-002DDUP,DUP,2,	0.252	313.156	None
8	,N020008-002A,SAMP,2,	0.252	312.930	None
9	,N020008-002AMS,MS,2,	0.327	407.297	None
10	,N020008-002AMSD,MSD,2,	0.329	409.941	None
11	,CCV-1,CCV,1,	0.084	102.791	None
12	,CCB-1,CCB,1,	0.002	0.156	None

ICAL: IWST160310A
ICV/LCS/MS/MSD: IWST160119A
CCV: ISST150306A
10% H2SO4: R160512E
1,5-Diphenylcarbazide Solution: R160616A

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

6/21/2016

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R109043 **Analyst:** REB

ASSET #: N020008 **Date Analyzed:** 6/20/2016

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.		X				
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

CCV-2 failed, high bias. N020008-001D and 002D were re-run. CCV-3 and CCV-4 passed criteria.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Reb 06/21/2016 Date:

2nd Level Reviewer Date: 6/21/2016

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N020008-002D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5706*5

= 2.853 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 2.9

Reb 06/21/2016

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

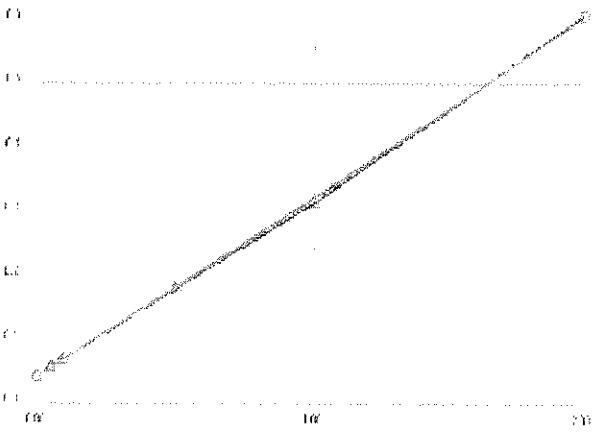
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.28x + 0.0422
Correlation	.999811

Calibrant	Energy	Set	Conc
1	0.0435	0.0000	0.0048
2	0.0586	0.0500	0.0587
3	0.0713	0.1000	0.1041
4	0.1810	0.5000	0.4959
5	0.3142	1.0000	0.9717
6	0.6062	2.0000	2.0147



Notes:

2% CuSO4- R160619A
R1 Buffer- R160619B
R2 Coloring reagent- R160620B

STD 1°- ISST160211J
STD 2°- ISST150730E

Reb 06/21/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **ICV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.513	0.050	0.5000	0	103	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.483	0.050	0.5000	0	96.5	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.592	0.050	0.5000	0	118	90	110				S

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.485	0.050	0.5000	0	97.0	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.487	0.050	0.5000	0	97.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **ICB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 06-20-2016 16:36
Time end: 06-20-2016 18:25

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:02:26	0.0105		0.0451
2	<BLANK>	18:03:26	0.0080		0.0444
3	<CAL1>	18:04:20	0.0048	[0]	0.0435
4	<CAL2>	18:05:21	0.0587	[0.05]	0.0586
5	<CAL3>	18:06:16	0.1041	[0.1]	0.0713
6	<CAL4>	18:07:12	0.4959	[0.5]	0.1810
7	<CAL5>	18:08:12	0.9717	[1]	0.3142
8	<CAL6>	18:09:07	2.0147	[2]	0.6062
9	,BLANK,BLANK,1,	18:09:56	0.0398		0.0533
10	,ICV,ICV,1,	18:10:38	0.5134		0.1859
11	,ICB,ICB,1,	18:11:28	0.0134		0.0459
12	,MB-H2O,MBLK,1,	18:12:10	0.0023		0.0428
13	,LCS-H2O,LCS,1,	18:12:59	0.4884		0.1789
14	,N020006-001C,SAMP,1,	18:13:42	0.0259		0.0494
15	,N020006-001CDUP,DUP,1,	18:14:24	0.0237		0.0488
16	,N020006-001CMS,MS,1,	18:15:13	0.5734		0.2027
17	,N020006-001CMSD,MSD,1,	18:15:55	0.5670		0.2009
18	,N020006-002C,SAMP,5,	18:16:38	0.6477		0.2235
19	,N020007-002D,SAMP,5,	18:17:26	0.5874		0.2066
20	,N020008-001D,SAMP,5,	18:18:10	0.0209		0.0480
21	,BLANK,BLANK,1	18:18:59	0.0094		0.0448
22	,CCV-1,CCV,1,	18:19:41	0.4827		0.1773
23	,CCB-1,CCB,1,	18:20:24	0.0123		0.0456
24	,N020008-002D,SAMP,5,	18:21:12	0.5492		0.1959
25	,BLANK,BLANK,1	18:21:55	0.0059		0.0438

Reb 06/21/2016

			EPA 353.2 NO3 as N ppm	Flags	OD
26	,CCV-2,CCV,1,	18:22:37	0.5924		0.2080
27	,CCB-2,CCB,1,	18:23:27	0.0066		0.0440

Reb 06/21/2016

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.ati-labs.com

Time start: 06-20-2016 18:35
Time end: 06-20-2016 19:19

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	19:12:27	-0.0099		0.0394
2	,CCV-3,CCV,1,	19:13:16	0.4849		0.1779
3	,CCB-3,CCB,1,	19:13:57	-0.0070		0.0402
4	,N020008-001D,SAMP,1,	19:14:46	0.0084		0.0445
5	,N020008-002D,SAMP,5,	19:15:30	0.5706		0.2019
6	,BLANK,BLANK,1	19:16:11	-0.0041		0.0410
7	,CCV-4,CCV,1,	19:17:00	0.4874		0.1786
8	,CCB-4,CCB,1,	19:17:42	-0.0049		0.0408

Reb 06/21/2016

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 06/20/2016
Time Analyzed: 16:36PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R160619B
Color reagent: R160620B
2% Copper Sulfate: R160619A
Ammonium Hydroxide: CINV-160406F

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N020006-001C		8.32						
2)	N020006-002C		8.54						
3)	N020007-002D		8.38						
4)	N020008-001D		8.11						
5)	N020008-002D		8.30						
6)									
7)									
8)									
9)									
10)									
11)									
12)									
13)									
14)									
15)									
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

Reb 06/21/2016

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58740
ASSET #: N020008

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 6/20/2016

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Ca in N020008-001B MS/MSD failed, low bias. However LCS passed criteria. DT passed.
%Rec of Al in ICSA2 failed (~120.34%). However, Al is not a target analyte.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 6/22/2016

2nd Level Reviewer _____ Date: 6/23/2016

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58740
ASSET #: N020008

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 6/20/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 6/22/2016 Date: _____

2nd Level Reviewer _____ Date: 6/23/2016

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N020008-001B** , the concentration in ug/L is calculated as follows:

Calcium , ug/L = 119.927 * 1 * (25/25) *1000

Calcium , ug/L = 119927

Reporting results in two significant figures,

Calcium , ug/L = 120000

% RSD SUMMARY

RSD SUMMARY: 160620A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	49.62	15	<PQL
Standard1	ICAL	1	Ca	0.2	14.99	15	PASS
Standard2	ICAL	1	Ca	1	2.32	15	PASS
Standard3	ICAL	1	Ca	2	1.69	15	PASS
Standard4	ICAL	1	Ca	5	0.71	15	PASS
Standard5	ICAL	1	Ca	7.5	0.32	15	PASS
Standard6	ICAL	1	Ca	10	0.89	15	PASS
Standard7	ICAL	1	Ca	20	0.5	15	PASS
ICV	ICV	1	Ca	5.26	122.89	15	NR!
LLICV	CCV1	1	Ca	0.24	23.68	20	<PQL
ICV	ICV	1	Ca	9.98	0.27	15	PASS
LLICV	CCV1	1	Ca	0.22	14.12	20	PASS
ICB	ICB	1	Ca	0.037	27.23	15	<PQL
ICSA1	ICSA	1	Ca	506.45	0.55	15	PASS
ICSAB1	ICSAB	1	Ca	569.88	0.49	15	PASS
MB-58740	MBLK	1	Ca	0.033	141.42	15	<PQL
LCS1-58740	LCS	1	Ca	9.85	0.51	15	PASS
N020008-001B	SAMP	1	Ca	119.93	0.29	15	PASS
N020008-002B	SAMP	1	Ca	199.05	0.14	15	PASS
N020008-001B	SAMP	5	Ca	25.27	0.59	15	PASS
N020008-001B-PS	PS	1	Ca	128.9	0.11	15	PASS
N020008-001B-MS1	MS	1	Ca	124.83	0.24	15	PASS
N020008-001B-MSD1	MSD	1	Ca	124.99	0.29	15	PASS
CCV1	CCV	1	Ca	10.24	0.15	15	PASS
LLCCV1	CCV2	1	Ca	0.24	9.42	20	PASS
CCB1	CCB	1	Ca	0.026	151.25	15	<PQL
ICSA2	ICSA	1	Ca	508.84	0.13	15	PASS
ICSAB2	ICSAB	1	Ca	574.12	0.47	15	PASS
CalBlk	IBLK	1	Fe	0	5.31	15	PASS
Standard1	ICAL	1	Fe	0.02	1.67	15	PASS
Standard2	ICAL	1	Fe	0.05	0.22	15	PASS
Standard3	ICAL	1	Fe	2	0.61	15	PASS
Standard4	ICAL	1	Fe	5	0.32	15	PASS
Standard5	ICAL	1	Fe	7.5	0.27	15	PASS
Standard6	ICAL	1	Fe	10	0.54	15	PASS
Standard7	ICAL	1	Fe	20	0.045	15	PASS
ICV	ICV	1	Fe	7.57	78.6	15	NR!
LLICV	CCV1	1	Fe	0.023	2.74	20	PASS
ICV	ICV	1	Fe	9.81	0.033	15	PASS
LLICV	CCV1	1	Fe	0.022	3.71	20	PASS
ICB	ICB	1	Fe	0.00036	76	15	<PQL
ICSA1	ICSA	1	Fe	215.63	0.051	15	PASS

RSD SUMMARY: 160620A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB1	ICSAB	1	Fe	187.42	0.19	15	PASS
MB-58740	MBLK	1	Fe	0.0086	17.11	15	<PQL
LCS1-58740	LCS	1	Fe	0.098	0.9	15	PASS
N020008-001B	SAMP	1	Fe	0.00009	99.65	15	<PQL
N020008-002B	SAMP	1	Fe	0.01	14.52	15	PASS
N020008-001B	SAMP	5	Fe	0.0015	5.41	15	PASS
N020008-001B-PS	PS	1	Fe	0.12	1.16	15	PASS
N020008-001B-MS1	MS	1	Fe	0.11	0.66	15	PASS
N020008-001B-MSD1	MSD	1	Fe	0.11	0.55	15	PASS
CCV1	CCV	1	Fe	10.37	0.096	15	PASS
LLCCV1	CCV2	1	Fe	0.023	2.62	20	PASS
CCB1	CCB	1	Fe	0.00078	27.76	15	<PQL
ICSA2	ICSA	1	Fe	217.21	0.17	15	PASS
ICSAB2	ICSAB	1	Fe	188.44	0.2	15	PASS
CalBlk	IBLK	1	Mg	0	13.16	15	PASS
Standard1	ICAL	1	Mg	0.1	0.9	15	PASS
Standard2	ICAL	1	Mg	1	0.45	15	PASS
Standard3	ICAL	1	Mg	2	0.61	15	PASS
Standard4	ICAL	1	Mg	5	0.34	15	PASS
Standard5	ICAL	1	Mg	7.5	0.28	15	PASS
Standard6	ICAL	1	Mg	10	0.59	15	PASS
Standard7	ICAL	1	Mg	20	0.063	15	PASS
ICV	ICV	1	Mg	7.31	85.98	15	NR!
LLICV	CCV1	1	Mg	0.12	0.59	20	PASS
ICV	ICV	1	Mg	9.83	0.029	15	PASS
LLICV	CCV1	1	Mg	0.11	1.47	20	PASS
ICB	ICB	1	Mg	0.00048	104.019	15	<PQL
ICSA1	ICSA	1	Mg	483.33	0.12	15	PASS
ICSAB1	ICSAB	1	Mg	531.87	0.17	15	PASS
MB-58740	MBLK	1	Mg	0.0094	11.17	15	PASS
LCS1-58740	LCS	1	Mg	10.26	0.14	15	PASS
N020008-001B	SAMP	1	Mg	26.12	0.14	15	PASS
N020008-002B	SAMP	1	Mg	24.94	0.16	15	PASS
N020008-001B	SAMP	5	Mg	5.74	0.19	15	PASS
N020008-001B-PS	PS	1	Mg	35.29	0.14	15	PASS
N020008-001B-MS1	MS	1	Mg	34.58	0.22	15	PASS
N020008-001B-MSD1	MSD	1	Mg	34.6	0.16	15	PASS
CCV1	CCV	1	Mg	10.34	0.024	15	PASS
LLCCV1	CCV2	1	Mg	0.12	0.4	20	PASS
CCB1	CCB	1	Mg	0.0031	22.085	15	<PQL
ICSA2	ICSA	1	Mg	484.68	0.29	15	PASS
ICSAB2	ICSAB	1	Mg	532.78	0.18	15	PASS

RSD SUMMARY: 160620B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	37.039	15	<PQL
Standard1	ICAL	1	Na	0.1	2.66	15	PASS
Standard2	ICAL	1	Na	1	0.31	15	PASS
Standard3	ICAL	1	Na	5	0.71	15	PASS
Standard4	ICAL	1	Na	10	0.17	15	PASS
Standard5	ICAL	1	Na	20	0.49	15	PASS
Standard6	ICAL	1	Na	40	0.32	15	PASS
ICV	ICV	1	Na	10.082	0.34	15	PASS
ICB	ICB	1	Na	0.0062	51.062	15	<PQL
ICSA1	ICSA	1	Na	-0.0003	1409.047	15	<PQL
ICSAB1	ICSAB	1	Na	10.041	0.25	15	PASS
MB-58740	MBLK	1	Na	0.0093	90.99	15	<PQL
LCS2-58740	LCS	1	Na	19.68	0.44	15	PASS
N020008-001B	SAMP	5	Na	132.82	0.15	15	PASS
N020008-002B	SAMP	5	Na	290.12	0.98	15	PASS
N020008-001B 25x	SAMP	~~50~~	Na	27.11	0.11	15	PASS
N020008-002B	SAMP	50	Na	28.66	0.21	15	PASS
CCV1	CCV	1	Na	9.78	0.38	15	PASS
CCB1	CCB	1	Na	0.014	21.48	15	<PQL
N020008-00~~1B~~ 2B	SAMP	250	Na	5.78	0.36	15	PASS
N020008-002B-PS	PS	50	Na	29.036	0.11	15	PASS
N020008-002B-MS2	MS	50	Na	29.12	0.22	15	PASS
N020008-002B-MSD2	MSD	50	Na	29.1	0.27	15	PASS
CCV2	CCV	1	Na	9.86	0.23	15	PASS
CCB2	CCB	1	Na	0.013	25.95	15	<PQL
ICSA2	ICSA	1	Na	0.017	20.38	15	<PQL
ICSAB2	ICSAB	1	Na	10.095	0.33	15	PASS

6/22/2016

ANALYSIS RUN LOG

INJECTION LOG: 160620A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-160608A,0.5<50mL
Standard2	MWST-160608F
Standard3	MWST-160608J,5<50mL
Standard4	MWST-160608J,12.5<50mL
Standard5	MWST-160608J,15<40mL
Standard6	MWST-160608J,25<50mL
Standard7	MWST-160608J
ICV	MWST-160531E
CCV	MWST-160608J,25<50mL
ICSA/ICSAB	MWST-160523A/MWST-160608K
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-160201G/ H, MWST-160531G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/20/2016	12:30:56 PM
2	Standard1	ICAL	1	06/20/2016	12:35:16 PM
3	Standard2	ICAL	1	06/20/2016	12:40:06 PM
4	Standard3	ICAL	1	06/20/2016	12:44:55 PM
5	Standard4	ICAL	1	06/20/2016	12:49:47 PM
6	Standard5	ICAL	1	06/20/2016	12:54:38 PM
7	Standard6	ICAL	1	06/20/2016	12:59:27 PM
8	Standard7	ICAL	1	06/20/2016	01:04:17 PM
9	ICV	ICV	1	06/20/2016	01:09:37 PM
2	LLICV	CCV1	1	06/20/2016	01:15:28 PM
9	ICV	ICV	1	06/20/2016	01:20:29 PM
2	LLICV	CCV1	1	06/20/2016	01:24:51 PM
1	ICB	ICB	1	06/20/2016	01:29:39 PM
4	ICSA1	ICSA	1	06/20/2016	01:33:57 PM
5	ICSAB1	ICSAB	1	06/20/2016	01:39:53 PM
48	MB-58740	MBLK	1	06/20/2016	01:45:51 PM
49	LCS1-58740	LCS	1	06/20/2016	01:50:13 PM
50	N020008-001B	SAMP	1	06/20/2016	01:55:05 PM
51	N020008-002B	SAMP	1	06/20/2016	02:00:27 PM
52	N020008-001B	SAMP	5	06/20/2016	02:05:48 PM
53	N020008-001B-PS	PS	1	06/20/2016	02:10:08 PM
54	N020008-001B-MS1	MS	1	06/20/2016	02:15:28 PM
55	N020008-001B-MSD1	MSD	1	06/20/2016	02:20:50 PM
56	N019979-002C	SAMP	1	06/20/2016	02:26:11 PM
57	N019979-003C	SAMP	1	06/20/2016	02:31:33 PM
7	CCV1	CCV	1	06/20/2016	02:37:24 PM
2	LLCCV1	CCV2	1	06/20/2016	02:43:17 PM
1	CCB1	CCB	1	06/20/2016	02:48:06 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
4	ICSA2	ICSA	1	06/20/2016	02:52:24 PM
5	ICSAB2	ICSAB	1	06/20/2016	02:58:20 PM

INJECTION LOG: 160620B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-160608L,0.025<50mL
Standard2	MWST-160608L,0.25<50mL
Standard3	MWST-160608L,1.25<50mL
Standard4	MWST-160608L,2.5<50mL
Standard5	MWST-160608L,5<50mL
Standard6	MWST-160608L,10<50mL
ICV	MWST-160608M
CCV	MWST-160608L,2.5<50mL
ICSA/ICSAB	MWST-160523A/MWST-160608N
Int. Std. (Y)	MSST-160323B
PS Spike	MSST-130329D/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/20/2016	03:03:09 PM
2	Standard1	ICAL	1	06/20/2016	03:06:26 PM
3	Standard2	ICAL	1	06/20/2016	03:09:43 PM
4	Standard3	ICAL	1	06/20/2016	03:13:33 PM
5	Standard4	ICAL	1	06/20/2016	03:17:25 PM
6	Standard5	ICAL	1	06/20/2016	03:21:18 PM
7	Standard6	ICAL	1	06/20/2016	03:25:12 PM
8	ICV	ICV	1	06/20/2016	03:28:02 PM
1	ICB	ICB	1	06/20/2016	03:31:54 PM
3	ICSA1	ICSA	1	06/20/2016	03:35:12 PM
4	ICSAB1	ICSAB	1	06/20/2016	03:38:29 PM
38	MB-58740	MBLK	1	06/20/2016	03:42:23 PM
39	LCS2-58740	LCS	1	06/20/2016	03:45:41 PM
40	N020008-001B	SAMP	5	06/20/2016	03:48:59 PM
41	N020008-002B	SAMP	5	06/20/2016	03:53:50 PM
42	MB-58785	MBLK	1	06/20/2016	03:58:42 PM
43	LCS-58785	LCS	1	06/20/2016	04:01:59 PM
44	N020104-001A	SAMP	5	06/20/2016	04:05:48 PM
45	N020104-002A	SAMP	5	06/20/2016	04:09:52 PM
46	N020008-001B 25X	SAMP	~~50~~	06/20/2016	04:13:12 PM
47	N020008-002B	SAMP	50	06/20/2016	04:16:31 PM
5	CCV1	CCV	1	06/20/2016	04:19:51 PM
1	CCB1	CCB	1	06/20/2016	04:23:46 PM
48	N020008-~~001B~~ 2B	SAMP	250	06/20/2016	04:27:04 PM
49	N020008-002B-PS	PS	50	06/20/2016	04:30:25 PM
50	N020008-002B-MS2	MS	50	06/20/2016	04:33:45 PM
51	N020008-002B-MSD2	MSD	50	06/20/2016	04:37:05 PM
52	N020104-001A	SAMP	25	06/20/2016	04:40:23 PM
53	N020104-001A-PS	PS	5	06/20/2016	04:44:16 PM

6/22/2016

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N020104-001A-MS	MS	5	06/20/2016	04:48:21 PM
55	N020104-001A-MSD	MSD	5	06/20/2016	04:52:27 PM
56	N020104-002A	SAMP	1	06/20/2016	04:56:31 PM
5	CCV2	CCV	1	06/20/2016	04:59:52 PM
1	CCB2	CCB	1	06/20/2016	05:03:46 PM
3	ICSA2	ICSA	1	06/20/2016	05:07:03 PM
4	ICSAB2	ICSAB	1	06/20/2016	05:10:21 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/15/2016 8:25:03 A**
Prep End Date: **6/15/2016 1:03:00 P**

Initials/ Date: FOR 6/22/2016

Prep Factor Units: **mL / mL**

Prep Batch **58740** Prep Code: **3010_W_DISS** Technician: **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-58740	Aqueous		25	☐	0	0	25	1.000		
LCS2-58740	Aqueous		25	☐	0	0	25	1.000		
MB-58740	Aqueous		25	☐	0	0	25	1.000		
N020008-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8409	HYDROCHLORIC ACID
8447	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160531G	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160620A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	06/20/2016	12:30:56 PM	Mg	279.079	-174	0.00	mg/L	
Standard1	06/20/2016	12:35:16 PM	Mg	279.079	1792	0.1000	mg/L	
Standard2	06/20/2016	12:40:06 PM	Mg	279.079	15257	1.000	mg/L	
Standard3	06/20/2016	12:44:55 PM	Mg	279.079	32089	2.000	mg/L	
Standard4	06/20/2016	12:49:47 PM	Mg	279.079	80251	5.000	mg/L	
Standard5	06/20/2016	12:54:38 PM	Mg	279.079	119473	7.500	mg/L	
Standard6	06/20/2016	12:59:27 PM	Mg	279.079	157553	10.000	mg/L	
Standard7	06/20/2016	01:04:17 PM	Mg	279.079	302172	20.000	mg/L	0.9997
Calcium								
CalBlk	06/20/2016	12:30:56 PM	Ca	227.546	-24	0.00	mg/L	
Standard1	06/20/2016	12:35:16 PM	Ca	227.546	63	0.2000	mg/L	
Standard2	06/20/2016	12:40:06 PM	Ca	227.546	276	1.000	mg/L	
Standard3	06/20/2016	12:44:55 PM	Ca	227.546	592	2.000	mg/L	
Standard4	06/20/2016	12:49:47 PM	Ca	227.546	1465	5.000	mg/L	
Standard5	06/20/2016	12:54:38 PM	Ca	227.546	2185	7.500	mg/L	
Standard6	06/20/2016	12:59:27 PM	Ca	227.546	2878	10.000	mg/L	
Standard7	06/20/2016	01:04:17 PM	Ca	227.546	5610	20.000	mg/L	0.9999
Iron								
CalBlk	06/20/2016	12:30:56 PM	Fe	273.953	-79	0.00	mg/L	
Standard1	06/20/2016	12:35:16 PM	Fe	273.953	264	0.0200	mg/L	
Standard2	06/20/2016	12:40:06 PM	Fe	273.953	609	0.050	mg/L	
Standard3	06/20/2016	12:44:55 PM	Fe	273.953	25316	2.000	mg/L	
Standard4	06/20/2016	12:49:47 PM	Fe	273.953	63134	5.000	mg/L	
Standard5	06/20/2016	12:54:38 PM	Fe	273.953	93972	7.500	mg/L	
Standard6	06/20/2016	12:59:27 PM	Fe	273.953	123911	10.000	mg/L	
Standard7	06/20/2016	01:04:17 PM	Fe	273.953	236081	20.000	mg/L	0.9997

INITIAL CALIBRATION SUMMARY: 160620B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	06/20/2016	03:03:09 PM	Na	589.594	-36	0.00	mg/L	
Standard1	06/20/2016	03:06:26 PM	Na	589.594	388	0.1000	mg/L	
Standard2	06/20/2016	03:09:43 PM	Na	589.594	4009	1.000	mg/L	
Standard3	06/20/2016	03:13:33 PM	Na	589.594	20062	5.000	mg/L	
Standard4	06/20/2016	03:17:25 PM	Na	589.594	40060	10.000	mg/L	
Standard5	06/20/2016	03:21:18 PM	Na	589.594	80796	20.000	mg/L	
Standard6	06/20/2016	03:25:12 PM	Na	589.594	161932	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICV** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9978.681	500	10000	0	99.8	90	110				
Iron	9807.570	20	10000	0	98.1	90	110				
Magnesium	9825.610	100	10000	0	98.3	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ZZZZZZ** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	224.834	500	200.0	0	112	80	120				
Iron	22.413	20	20.00	0	112	80	120				
Magnesium	113.924	100	100.0	0	114	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **CCV** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10240.133	500	10000	0	102	90	110				
Iron	10371.458	20	10000	0	104	90	110				
Magnesium	10336.887	100	10000	0	103	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ZZZZZZ** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	235.686	500	200.0	0	118	70	130				
Iron	22.727	20	20.00	0	114	70	130				
Magnesium	115.040	100	100.0	0	115	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICV**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10081.570	500	10000	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **CCV**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9778.323	500	10000	0	97.8	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **CCV**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9856.172	500	10000	0	98.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109035**
Client ID: **ICB**	Batch ID: **R109035**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	36.530	500									
Iron	0.356	20									
Magnesium	0.485	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109035**
Client ID: **CCB**	Batch ID: **R109035**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.486	500									
Iron	0.776	20									
Magnesium	3.142	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	6.236	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **CCB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	13.544	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **CCB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	13.200	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **ICSA1** SampType: **ICSA** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICSA** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	596902.724	50	500000	0	119	80	120				
Calcium	506451.774	500	500000	0	101	80	120				
Iron	215625.249	20	200000	0	108	80	120				
Magnesium	483333.379	100	500000	0	96.7	80	120				

Sample ID: **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICSAB** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	559176.763	50	500000	0	112	80	120				
Calcium	569883.148	500	500000	0	114	80	120				
Iron	187422.026	20	200000	0	93.7	80	120				
Magnesium	531866.309	100	500000	0	106	80	120				

Sample ID: **ICSA2** SampType: **ICSA** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICSA** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	601718.366	50	500000	0	120	80	120				S
Calcium	508842.261	500	500000	0	102	80	120				
Iron	217210.662	20	200000	0	109	80	120				
Magnesium	484681.049	100	500000	0	96.9	80	120				

Sample ID: **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICSAB** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	563482.741	50	500000	0	113	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109035**
Client ID: **ICSAB**	Batch ID: **R109035**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	574116.932	500	500000	0	115	80	120				
Iron	188436.541	20	200000	0	94.2	80	120				
Magnesium	532778.643	100	500000	0	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICSA**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-0.299958	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICSAB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10041.413	500	10000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICSA**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	16.966	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICSAB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10095.106	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160620A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0016	100.16	65-125	PASS
Standard2	ICAL	1	1.028	102.79	65-125	PASS
Standard3	ICAL	1	1.12	111.95	65-125	PASS
Standard4	ICAL	1	0.99	99.33	65-125	PASS
Standard5	ICAL	1	1	99.58	65-125	PASS
Standard6	ICAL	1	1.0034	100.34	65-125	PASS
Standard7	ICAL	1	0.99	99.44	65-125	PASS
ICV	ICV	1	0.71	71.34	65-125	PASS
LLICV	CCV1	1	1.0097	100.97	65-125	PASS
ICV	ICV	1	1.026	102.65	65-125	PASS
LLICV	CCV1	1	0.99	99.22	65-125	PASS
ICB	ICB	1	1.017	101.66	65-125	PASS
ICSA1	ICSA	1	0.98	98.087	65-125	PASS
ICSAB1	ICSAB	1	0.88	87.98	65-125	PASS
MB-58740	MBLK	1	1.009	100.9	65-125	PASS
LCS1-58740	LCS	1	1.032	103.15	65-125	PASS
N020008-001B	SAMP	1	0.95	95.24	65-125	PASS
N020008-002B	SAMP	1	0.89	88.63	65-125	PASS
N020008-001B	SAMP	5	0.98	97.73	65-125	PASS
N020008-001B-PS	PS	1	0.94	93.88	65-125	PASS
N020008-001B-MS1	MS	1	0.93	93.034	65-125	PASS
N020008-001B-MSD1	MSD	1	0.93	93.35	65-125	PASS
CCV1	CCV	1	1.012	101.25	65-125	PASS
LLCCV1	CCV2	1	1.008	100.8	65-125	PASS
CCB1	CCB	1	1.01	101.05	65-125	PASS
ICSA2	ICSA	1	1	99.73	65-125	PASS
ICSAB2	ICSAB	1	0.89	89.32	65-125	PASS

INTERNAL STANDARD: 160620B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.014	101.4	65-125	PASS
Standard2	ICAL	1	1.012	101.2	65-125	PASS
Standard3	ICAL	1	1.021	102.06	65-125	PASS
Standard4	ICAL	1	1.011	101.12	65-125	PASS
Standard5	ICAL	1	1.022	102.22	65-125	PASS
Standard6	ICAL	1	1.03	102.97	65-125	PASS
ICV	ICV	1	1.017	101.66	65-125	PASS
ICB	ICB	1	1.0025	100.25	65-125	PASS
ICSA1	ICSA	1	1	99.68	65-125	PASS
ICSAB1	ICSAB	1	1.012	101.16	65-125	PASS
MB-58740	MBLK	1	1	99.56	65-125	PASS
LCS2-58740	LCS	1	1.057	105.74	65-125	PASS
N020008-001B	SAMP	5	1.0074	100.74	65-125	PASS
N020008-002B	SAMP	5	1.0008	100.08	65-125	PASS
N020008-001B 25x	SAMP	~~50~~	1.0078	100.78	65-125	PASS
N020008-002B	SAMP	50	1.011	101.06	65-125	PASS
CCV1	CCV	1	1.02	101.95	65-125	PASS
CCB1	CCB	1	1.0086	100.86	65-125	PASS
N020008-~~001B~~ 2B	SAMP	250	1.01	101.02	65-125	PASS
N020008-002B-PS	PS	50	1.0009	100.09	65-125	PASS
N020008-002B-MS2	MS	50	1.0017	100.17	65-125	PASS
N020008-002B-MSD2	MSD	50	1.0062	100.62	65-125	PASS
CCV2	CCV	1	1.014	101.35	65-125	PASS
CCB2	CCB	1	1	99.83	65-125	PASS
ICSA2	ICSA	1	1	99.53	65-125	PASS
ICSAB2	ICSAB	1	1.0059	100.59	65-125	PASS


6/22/2016

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N020008
Test Method: EPA 6010B
Analysis Date: 6/20/2016

Matrix: Groundwater
Batch No.: 58740

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Ca & Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N020008-001B DT 5X	Calcium	ug/L	126354.7	~~NA~~ PASS	119926.9	5.36%	10
N020008-001B DT 5X	Iron	ug/L	0	NA	0		10
N020008-001B DT 5X	Magnesium	ug/L	28689.73	PASS	26121.59	9.83%	10

Note: NA - Not applicable

6/23/2016

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N020008
Test Method: EPA 6010B
Analysis Date: 6/20/2016

Matrix: Groundwater
Batch No.: 58740

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N020008-002B DT 250X	Sodium	ug/L	1444156	PASS	1432980	0.78%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N020008-001B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ZZZZZZ** Batch ID: **58740** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/20/2016** SeqNo: **2355261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	128903.576	500	10000	119900	89.8	80	120				
Iron	118.077	20	100.0	0	118	80	120				
Magnesium	35291.538	100	10000	26120	91.7	80	120				

Sample ID: **N020008-002B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109039**
Client ID: **ZZZZZZ** Batch ID: **58740** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/20/2016** SeqNo: **2355505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1451779.536	25000	20000	1433000	94.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58656
ASSET #: N020008

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 6/9/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 6/22/2016 Date:

2nd Level Reviewer _____ Date: 6/22/2016

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N020008-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 121.164 * 5 * (25/25)

Chromium , ug/L = 605.820000

Reporting results in two significant figures,

Chromium , ug/L = 610

% RSD SUMMARY

PERCENT RSD SUMMARY: 160609A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.15	43.43	15	<PQL	0.12	12.41	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	7.0048	15	PASS	0.49	2.55	15	PASS
Std3-5/50 ppb	ICAL	1	5.15	0.51	15	PASS	5.11	1.11	15	PASS
Std4-10/100 ppb	ICAL	1	10.37	1.23	15	PASS	10.5	1.023	15	PASS
Std5-20/200 ppb	ICAL	1	20.4	1.11	15	PASS	20.4	0.27	15	PASS
Std6-40/400 ppb	ICAL	1	40.51	1.2	15	PASS	40.57	1.14	15	PASS
Std7-100/1000 ppb	ICAL	1	100.58	0.81	15	PASS	100.7	0.92	15	PASS
Std8-200/2000 ppb	ICAL	1	199.55	0.98	15	PASS	199.47	0.73	15	PASS
ICV	ICV	1	10.0066	0.089	15	PASS	98.66	1.21	15	PASS
ICB	ICB	1	0.059	26.22	15	<PQL	0.0081	165.14	15	<PQL
LLICV	CCV1	1	1.16	2.15	20	PASS	0.56	4.58	20	PASS
ICSA1	ICSA	1	0.2	14.4	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.092	1.79	15	PASS	20.33	2.026	15	PASS
LLICV	CCV1	1	1.092	2.87	20	PASS	0.51	6.44	20	PASS
MB-58656	MBLK	1	0.039	38.95	15	<PQL	<0.000	N/A	15	<PQL
LCS-58656	LCS	1	10.05	1.95	15	PASS	98.071	0.71	15	PASS
N020009-001C	SAMP	1	<0.000	N/A	15	<PQL	38.75	0.71	15	PASS
N020009-001C	SAMP	5	0.041	40.22	15	<PQL	8.25	2.22	15	PASS
N020009-001C-PS	PS	1	9.53	0.53	15	PASS	135.25	0.71	15	PASS
N020009-001C-MS	MS	1	9.44	0.27	15	PASS	133.7	0.36	15	PASS
N020009-001C-MSD	MSD	1	9.42	1.9	15	PASS	134.14	0.73	15	PASS
N020008-001B	SAMP	1	0.69	5.25	15	PASS	71.81	1.76	15	PASS
N020008-002B	SAMP	1	527.6	0.86	15	PASS	12.3	1.42	15	PASS
N020009-001C	SAMP	25	0.15	3.18	15	PASS	1.67	3.1	15	PASS
CCV1	CCV	1	19.89	1.27	15	PASS	19.69	2.34	15	PASS
CCB1	CCB	1	0.011	173.89	15	<PQL	0.0056	100.15	15	<PQL
N020008-002B	SAMP	1	535.49	2.84	15	PASS	12.42	3.16	15	PASS
N020009-001C	SAMP	25	0.18	16.59	15	<PQL	1.61	0.7	15	PASS
N020009-001C-PS	PS	5	2.12	3.082	15	PASS	28.59	0.91	15	PASS
N020009-001C-MS	MS	5	2.046	4.17	15	PASS	28.032	1.48	15	PASS
N020009-001C-MSD	MSD	5	2.033	0.65	15	PASS	27.95	0.55	15	PASS
N020008-001B	SAMP	5	0.18	5.14	15	PASS	15.9	0.99	15	PASS
N020008-002B	SAMP	5	121.16	0.19	15	PASS	2.73	3.73	15	PASS
CCV2	CCV	1	20.43	2.2	15	PASS	20.84	2.17	15	PASS
CCB2	CCB	1	0.038	50.12	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.075	3.91	20	PASS	0.57	5.66	20	PASS
LLCCV1	CCV2	1	1.18	1.84	20	PASS	0.55	7.53	20	PASS
ICSA2	ICSA	1	0.24	21.77	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.07	0.59	15	PASS	20.36	2.18	15	PASS
CCV3	CCV	1	20.082	3.57	15	PASS	21	1.61	15	PASS

PERCENT RSD SUMMARY: 160609A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0012	1592.19	15	<PQL
LLCCV2	CCV2	1	1.092	3.94	20	PASS	0.54	6.046	20	PASS
ICSA3	ICSA	1	0.23	9.74	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.72	2.17	15	PASS	20.48	2.32	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160609A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0609001.D	RINSE	RINSE	1	06/09/16 8:39 AM
A0609002.D	Cal Blank	IBLK	1	06/09/16 8:45 AM
A0609003.D	Std1-0.1/1 ppb	ICAL	1	06/09/16 8:51 AM
A0609004.D	Std2-0.5/5 ppb	ICAL	1	06/09/16 8:56 AM
A0609005.D	Std3-5/50 ppb	ICAL	1	06/09/16 9:02 AM
A0609006.D	Std4-10/100 ppb	ICAL	1	06/09/16 9:07 AM
A0609007.D	Std5-20/200 ppb	ICAL	1	06/09/16 9:13 AM
A0609008.D	Std6-40/400 ppb	ICAL	1	06/09/16 9:19 AM
A0609009.D	Std7-100/1000 ppb	ICAL	1	06/09/16 9:24 AM
A0609010.D	Std8-200/2000 ppb	ICAL	1	06/09/16 9:30 AM
A0609011.D	ICV	ICV	1	06/09/16 9:35 AM
A0609012.D	ICB	ICB	1	06/09/16 9:59 AM
A0609013.D	LLICV	CCV1	1	06/09/16 10:05 AM
A0609014.D	ICSA1	ICSA	1	06/09/16 10:10 AM
A0609015.D	ICSAB1	ICSAB	1	06/09/16 10:16 AM
A0609016.D	LLICV	CCV1	1	06/09/16 10:21 AM
A0609017.D	MB-58656	MBLK	1	06/09/16 10:27 AM
A0609018.D	LCS-58656	LCS	1	06/09/16 10:32 AM
A0609019.D	N020009-001C	SAMP	1	06/09/16 10:38 AM
A0609020.D	N020009-001C	SAMP	5	06/09/16 10:44 AM
A0609021.D	N020009-001C-PS	PS	1	06/09/16 10:49 AM
A0609022.D	N020009-001C-MS	MS	1	06/09/16 10:55 AM
A0609023.D	N020009-001C-MSD	MSD	1	06/09/16 11:00 AM
A0609024.D	N020008-001B	SAMP	1	06/09/16 11:06 AM
A0609025.D	N020008-002B	SAMP	1	06/09/16 11:11 AM
A0609026.D	N020009-001C	SAMP	25	06/09/16 11:17 AM
A0609027.D	CCV1	CCV	1	06/09/16 11:36 AM
A0609028.D	CCB1	CCB	1	06/09/16 11:42 AM
A0609029.D	N020008-002B	SAMP	1	06/09/16 11:48 AM
A0609030.D	N020009-001C	SAMP	25	06/09/16 11:53 AM
A0609031.D	N020009-001C-PS	PS	5	06/09/16 11:59 AM
A0609032.D	N020009-001C-MS	MS	5	06/09/16 12:05 PM
A0609033.D	N020009-001C-MSD	MSD	5	06/09/16 12:10 PM
A0609034.D	N020008-001B	SAMP	5	06/09/16 12:16 PM
A0609035.D	N020008-002B	SAMP	5	06/09/16 12:21 PM
A0609036.D	N019987-002B	SAMP	1	06/09/16 12:27 PM
A0609037.D	N019987-002A	SAMP	1	06/09/16 12:32 PM
A0609038.D	CCV2	CCV	1	06/09/16 12:38 PM
A0609039.D	CCB2	CCB	1	06/09/16 12:44 PM
A0609040.D	LLCCV1	CCV2	1	06/09/16 12:48 PM
A0609041.D	LLCCV1	CCV2	1	06/09/16 1:00 PM
A0609042.D	ICSA2	ICSA	1	06/09/16 1:06 PM

INJECTION LOG: 160609A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0609043.D	ICSAB2	ICSAB	1	06/09/16 1:11 PM
A0609044.D	MB-58574	MBLK	1	06/09/16 1:22 PM
A0609045.D	LCS-58574	LCS	1	06/09/16 1:28 PM
A0609046.D	N019929-001B-MS	MS	1	06/09/16 1:40 PM
A0609047.D	N019929-001B-MSD	MSD	1	06/09/16 1:46 PM
A0609048.D	N019929-001B-PS	PS	1	06/09/16 1:52 PM
A0609049.D	N019929-001B	SAMP	1	06/09/16 1:57 PM
A0609050.D	N019929-001B	SAMP	5	06/09/16 2:03 PM
A0609051.D	CCV3	CCV	1	06/09/16 2:08 PM
A0609052.D	CCB3	CCB	1	06/09/16 2:14 PM
A0609053.D	LLCCV2	CCV2	1	06/09/16 2:20 PM
A0609054.D	ICSA3	ICSA	1	06/09/16 2:25 PM
A0609055.D	ICSAB3	ICSAB	1	06/09/16 2:31 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/8/2016 8:00:00 A**
Prep End Date: **6/8/2016 12:30:00**

Initials/ Date: 6/22/2016

Prep Batch **58656** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-15**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58656	Aqueous		25	☐	0	0	25	1.000		
MB-58656	Aqueous		25	☐	0	0	25	1.000		
N019900-001B	Water	<2	25	☐	0	0	25	1.000		
N020008-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N020009-001C	Aqueous	<2	25	☐	0	0	25	1.000		
N020009-001C-MS	Aqueous	<2	25	☐	0	0	25	1.000		
N020009-001C-MS	Aqueous	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-160606	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-160606	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-160606	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 9 Jun 2016 07:55:45 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	64351.70	0.00	
24	Mg	377086.00	0.00	
25	Mg	49418.10	0.00	
26	Mg	57385.90	0.00	
59	Co	347758.00	0.00	
115	In	801023.00	0.00	
206	Pb	280222.00	0.00	
207	Pb	244725.00	0.00	
208	Pb	601962.00	0.00	

RSD (%)

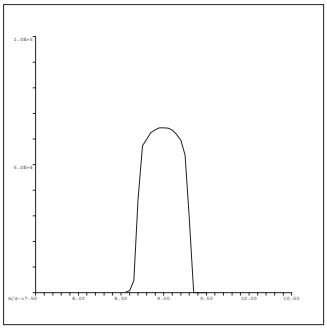
Element		Actual	Required	Flag
9	Be	1.06	5.00	
24	Mg	0.44	5.00	
25	Mg	0.81	5.00	
26	Mg	0.85	5.00	
59	Co	0.52	5.00	
115	In	0.31	5.00	
206	Pb	0.99	5.00	
207	Pb	0.81	5.00	
208	Pb	0.82	5.00	

Ion Ratio

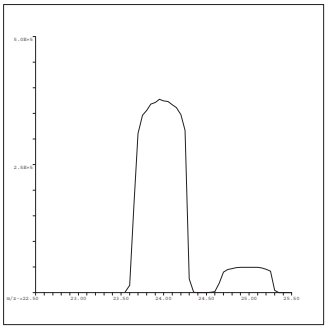
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

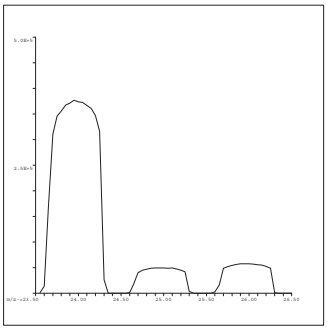
Element	Actual	Required	Flag



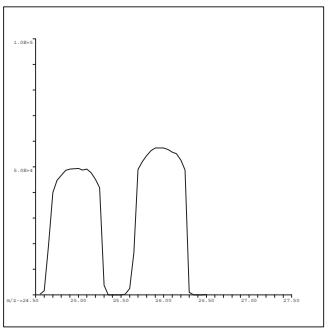
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



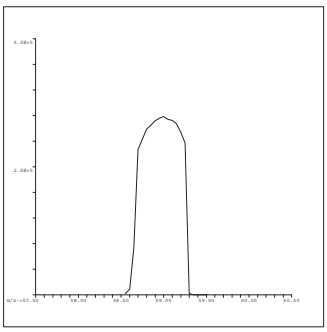
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



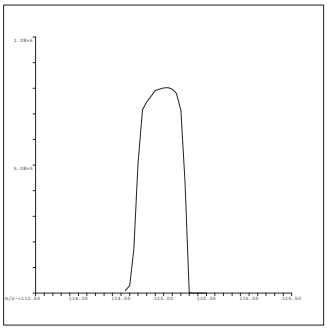
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



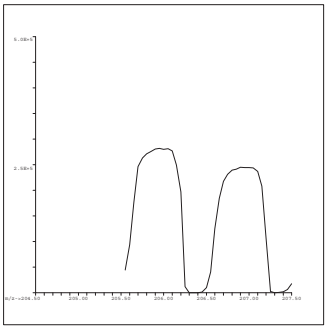
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



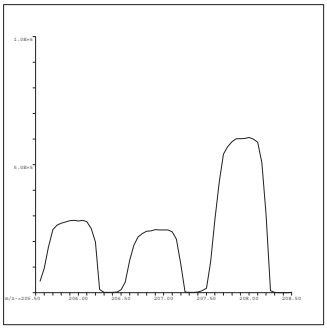
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



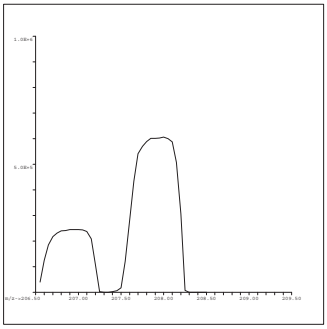
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160609A

Instrument ID: ICPMS-02

Analyte	Data File	A0609002.D	A0609004.D	A0609005.D	A0609006.D	A0609007.D	A0609008.D	A0609009.D	A0609010.D	
	Acq. Date-Time	06/09/2016 08:45 AM	06/09/2016 08:56 AM	06/09/2016 09:02 AM	06/09/2016 09:07 AM	06/09/2016 09:13 AM	06/09/2016 09:19 AM	06/09/2016 09:24 AM	06/09/2016 09:30 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	54045.3	55039.8	53792.1	53022.9	53334.2	52527.3	53081	52620.8	
55 Mn [2]	CPS	86.3	1173.2	11193.3	22597.1	44073.2	86228.6	216148.2	424390.6	1.0000
52 Cr [2]	CPS	648.9	2722.5	21775.8	42609.3	83685.7	163061.4	408175.7	802133.7	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.656	0.50	100.0	0	98.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.560	0.50	0.5000	0	112	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.694	0.50	20.00	0	98.5	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.840	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.550	0.50	0.5000	0	110	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.007	1.0	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.158	1.0	1.000	0	116	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.893	1.0	20.00	0	99.5	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.426	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.183	1.0	1.000	0	118	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.059	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.038	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**ICSA1**	SampType:	**ICSA**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ICSA**	Batch ID:	**R108878**	TestNo:	**EPA 6020**			Analysis Date:	**6/9/2016**	SeqNo:	**2348753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	**ICSAB1**	SampType:	**ICSAB**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ICSAB**	Batch ID:	**R108878**	TestNo:	**EPA 6020**			Analysis Date:	**6/9/2016**	SeqNo:	**2348754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.331	0.50	20.00	0	102	80	120				

Sample ID	**ICSA2**	SampType:	**ICSA**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ICSA**	Batch ID:	**R108878**	TestNo:	**EPA 6020**			Analysis Date:	**6/9/2016**	SeqNo:	**2348781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	**ICSAB2**	SampType:	**ICSAB**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ICSAB**	Batch ID:	**R108878**	TestNo:	**EPA 6020**			Analysis Date:	**6/9/2016**	SeqNo:	**2348782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.362	0.50	20.00	0	102	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICSA**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.195	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICSAB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.092	1.0	20.00	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICSA**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.238	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICSAB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.070	1.0	20.00	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160609A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	54045.3	54045.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	54068.7	54045.3	100.04	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	55039.8	54045.3	101.84	PASS	70-130
Std3-5/50 ppb	ICAL	1	53792.1	54045.3	99.53	PASS	70-130
Std4-10/100 ppb	ICAL	1	53022.9	54045.3	98.11	PASS	70-130
Std5-20/200 ppb	ICAL	1	53334.2	54045.3	98.68	PASS	70-130
Std6-40/400 ppb	ICAL	1	52527.3	54045.3	97.19	PASS	70-130
Std7-100/1000 ppb	ICAL	1	53081	54045.3	98.22	PASS	70-130
Std8-200/2000 ppb	ICAL	1	52620.8	54045.3	97.36	PASS	70-130
ICV	ICV	1	55772.3	54045.3	103.2	PASS	70-130
ICB	ICB	1	53402.3	54045.3	98.81	PASS	70-130
LLICV	CCV1	1	50808.4	54045.3	94.011	PASS	70-130
ICSA1	ICSA	1	57533.5	54045.3	106.45	PASS	70-130
ICSAB1	ICSAB	1	64437.6	54045.3	119.23	PASS	70-130
LLICV	CCV1	1	60689.1	54045.3	112.29	PASS	70-130
MB-58656	MBLK	1	56582.4	54045.3	104.69	PASS	70-130
LCS-58656	LCS	1	56535.7	54045.3	104.61	PASS	70-130
N020009-001C	SAMP	1	58173.9	54045.3	107.64	PASS	70-130
N020009-001C	SAMP	5	55713.1	54045.3	103.09	PASS	70-130
N020009-001C-PS	PS	1	58979.6	54045.3	109.13	PASS	70-130
N020009-001C-MS	MS	1	58894	54045.3	108.97	PASS	70-130
N020009-001C-MSD	MSD	1	59566.2	54045.3	110.22	PASS	70-130
N020008-001B	SAMP	1	58763.5	54045.3	108.73	PASS	70-130
N020008-002B	SAMP	1	70909.4	54045.3	131.2	NR!	70-130
N020009-001C	SAMP	25	79939	54045.3	147.91	NR!	70-130
CCV1	CCV	1	50546.6	54045.3	93.53	PASS	70-130
CCB1	CCB	1	45572.3	54045.3	84.32	PASS	70-130
N020008-002B	SAMP	1	60979.1	54045.3	112.83	PASS	70-130
N020009-001C	SAMP	25	76121.9	54045.3	140.85	NR!	70-130
N020009-001C-PS	PS	5	71815.7	54045.3	132.88	NR!	70-130
N020009-001C-MS	MS	5	66535.7	54045.3	123.11	PASS	70-130
N020009-001C-MSD	MSD	5	63663.4	54045.3	117.8	PASS	70-130
N020008-001B	SAMP	5	59535	54045.3	110.16	PASS	70-130
N020008-002B	SAMP	5	60115.9	54045.3	111.23	PASS	70-130
CCV2	CCV	1	52757.8	54045.3	97.62	PASS	70-130
CCB2	CCB	1	46205.1	54045.3	85.49	PASS	70-130
LLCCV1	CCV2	1	53813.5	54045.3	99.57	PASS	70-130
LLCCV1	CCV2	1	51617.7	54045.3	95.51	PASS	70-130
ICSA2	ICSA	1	58876.2	54045.3	108.94	PASS	70-130
ICSAB2	ICSAB	1	63835.2	54045.3	118.11	PASS	70-130
CCV3	CCV	1	42839.5	54045.3	79.27	PASS	70-130

INTERNAL STANDARD: 160609A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCB3	CCB	1	37887.6	54045.3	70.1	PASS	70-130
LLCCV2	CCV2	1	49342.7	54045.3	91.3	PASS	70-130
ICSA3	ICSA	1	49778.9	54045.3	92.11	PASS	70-130
ICSAB3	ICSAB	1	49418.8	54045.3	91.44	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N020008
Test Method: EPA 6020
Analysis Date: 6/9/2016

Matrix: Groundwater
Batch No.: 58656

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N020009-001C DT 5X	Chromium	ug/L	0	NA	0		10
N020009-001C DT 5X	Manganese	ug/L	41.24833	PASS	38.75001	6.45%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N020009-001C-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID:	**ZZZZZZ**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	135.253	0.50	100.0	38.75	96.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N020009-001C-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ZZZZZZ**	Batch ID:	**58656**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**6/9/2016**	SeqNo:	**2348715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.533	1.0	10.00	0	95.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Detection Limit
Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

ACCEPTANCE CRITERIA: MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	MDL*10	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0313	0.3133	0.3000	0.187	0.50	0.515	103
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0248	0.2485	0.3000	0.049	0.10	0.103	103
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699	0.6986	0.3000	0.403	1.00	1.245	125
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0430	0.4304	0.3000	0.185	0.50	0.524	105
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0473	0.4734	0.3000	0.174	0.50	0.501	100
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0192	0.1925	0.3000	0.321	1.00	0.973	97
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263	0.2630	0.3000	0.163	0.50	0.475	95
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2626	2.6262	0.3000	0.328	1.00	1.062	106
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7517	7.5170	0.3000	0.605	10.00	11.338	113
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367	0.3670	0.3000	0.343	1.00	1.018	102
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0554	0.5543	0.3000	0.193	0.50	0.605	121
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0385	0.3853	0.3000	0.247	0.50	0.660	132
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0395	0.3954	0.3000	0.341	1.00	1.002	100
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276	0.2760	0.3000	0.170	0.50	0.502	100
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590	0.5899	0.3000	0.247	1.00	1.029	103
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296	0.2961	0.3000	0.186	0.50	0.549	110
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0327	0.3272	0.3000	0.181	0.50	0.533	107
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213	0.2133	0.3000	0.221	1.00	0.873	87
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2678	2.6780	0.3000	3.286	10.00	10.085	101

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.801A

ASSET Laboratories Work Order: N020008

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N020008

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-37
Sample Receiving Items	38-42
List of Analysts	43
Raw Data	
EPA 120.1	44-47
SM 4500 H+B	48-51
SM 2540C	52-61
EPA 218.6	62-123
SM 2320B	124-133
EPA 300	134-160
SM 3500-Cr B	161-173
SM 4500-NO3F	174-188
EPA 6010B_Dissolved	189-226
EPA 6020_Dissolved	227-262

June 23, 2016

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N020008

RE: PG&E Topock - PMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 07, 2016 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucan for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *23-Jun-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N020008

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N020008-001B-MS1 and N020008-001B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

Date: *23-Jun-16*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N020008
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N020008-001A	PE-01-0616	Groundwater	6/7/2016 8:35:00 AM	6/7/2016	6/23/2016
N020008-001B	PE-01-0616	Groundwater	6/7/2016 8:35:00 AM	6/7/2016	6/23/2016
N020008-001C	PE-01-0616	Groundwater	6/7/2016 8:35:00 AM	6/7/2016	6/23/2016
N020008-001D	PE-01-0616	Groundwater	6/7/2016 8:35:00 AM	6/7/2016	6/23/2016
N020008-002A	TW-03D-0616	Groundwater	6/7/2016 8:45:00 AM	6/7/2016	6/23/2016
N020008-002B	TW-03D-0616	Groundwater	6/7/2016 8:45:00 AM	6/7/2016	6/23/2016
N020008-002C	TW-03D-0616	Groundwater	6/7/2016 8:45:00 AM	6/7/2016	6/23/2016
N020008-002D	TW-03D-0616	Groundwater	6/7/2016 8:45:00 AM	6/7/2016	6/23/2016

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CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160608E**	QC Batch: **R108876**			PrepDate			Analyst: **LR**
Specific Conductance	3700	0.10	0.10		umhos/cm	1	6/8/2016 01:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_160608E**	QC Batch: **R108876**			PrepDate			Analyst: **LR**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	6/8/2016 01:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N020008-002CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **108876**
Client ID: **ZZZZZZ** Batch ID: **R108876** TestNo: **EPA 120.1** Analysis Date: **6/8/2016** SeqNo: **2348013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7320.000	0.10						7350	0.409	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160608B**	QC Batch: **R108870**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	6/8/2016 12:22 PM
Temp. at time of pH Analysis	26	0.10	0.10	H	°C	1	6/8/2016 12:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **WETCHEM_160608B**	QC Batch: **R108870**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	6/8/2016 12:22 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/8/2016 12:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N020008-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **108870**
Client ID: **ZZZZZZ** Batch ID: **R108870** TestNo: **SM4500-H+B** Analysis Date: **6/8/2016** SeqNo: **2347923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.570	0.10						7.520	0.663	10	H
Temp. at time of pH Analysis	25.300	0.10						25.50	0.787	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160608F**	QC Batch: **58671**				PrepDate	**6/8/2016**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2200	25	25		mg/L	1	6/8/2016 01:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_160608F**	QC Batch: **58671**				PrepDate	**6/8/2016**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	6/8/2016 01:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-58671**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2016**	RunNo: **108888**
Client ID: **LCSW**	Batch ID: **58671**	TestNo: **SM2540C**		Analysis Date: **6/8/2016**	SeqNo: **2348318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	968.000	10	1000	0	96.8	80	120				

Sample ID **MBLK-58671**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2016**	RunNo: **108888**
Client ID: **PBW**	Batch ID: **58671**	TestNo: **SM2540C**		Analysis Date: **6/8/2016**	SeqNo: **2348319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N020006-002ADUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2016**	RunNo: **108888**
Client ID: **ZZZZZZ**	Batch ID: **58671**	TestNo: **SM2540C**		Analysis Date: **6/8/2016**	SeqNo: **2348323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4455.000	50						4555	2.22	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_160608A**	QC Batch: **R108868**			PrepDate			Analyst: **JJS**
Hexavalent Chromium	0.83	0.066	0.20		µg/L	1	6/8/2016 02:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_160609B**	QC Batch: **58656**			PrepDate	**6/8/2016**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	6/9/2016 11:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **WETCHEM_160616C**	QC Batch: **R108989**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	630	2.8	20		µg/L	2	6/16/2016
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **ICP7_160609B**	QC Batch: **58656**			PrepDate	**6/8/2016**		Analyst: **CEI**
Chromium	610	0.096	5.0		µg/L	5	6/9/2016 12:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R108868**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **PBW**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347885**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R108868**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **LCSW**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347886**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.159	0.20	5.000	0	103	90	110				

Sample ID **N020007-001BDUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347888**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	617.960	20						615.3	0.436	20	

Sample ID **N020007-001BMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347889**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1140.210	20	500.0	615.3	105	90	110				

Sample ID **N020007-001BMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:				RunNo: **108868**		
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**				SeqNo: **2347890**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1134.360	20	500.0	615.3	104	90	110	1140	0.514	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N020008-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	108868
Client ID:	ZZZZZZ	Batch ID:	R108868	TestNo:	EPA 218.6			Analysis Date:	6/8/2016	SeqNo:	2347894

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.840	0.20	1.000	0.8271	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	LCS-R108989	SampType:	LCS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	LCSW	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353617

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	101.524	10	100.0	0	102	85	115				

Sample ID	MB-R108989	SampType:	MBLK	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	PBW	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353618

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID	N020006-002DDUP	SampType:	DUP	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	ZZZZZZ	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353621

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	626.312	20						623.1	0.518	20	

Sample ID	N020008-002AMS	SampType:	MS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	ZZZZZZ	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353623

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	814.594	20	200.0	625.9	94.4	85	115				

Sample ID	N020008-002AMSD	SampType:	MSD	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	108989
Client ID:	ZZZZZZ	Batch ID:	R108989	TestNo:	SM 3500-Cr B			Analysis Date:	6/16/2016	SeqNo:	2353624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	819.882	20	200.0	625.9	97.0	85	115	814.6	0.647	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-58656	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2016	RunNo:	108878
Client ID:	PBW	Batch ID:	58656	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2016	SeqNo:	2348711

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.039	1.0									

Sample ID	LCS-58656	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2016	RunNo:	108878
Client ID:	LCSW	Batch ID:	58656	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2016	SeqNo:	2348712

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.050	1.0	10.00	0	100	85	115				

Sample ID	N020009-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2016	RunNo:	108878
Client ID:	ZZZZZZ	Batch ID:	58656	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2016	SeqNo:	2348716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.443	1.0	10.00	0	94.4	75	125				

Sample ID	N020009-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2016	RunNo:	108878
Client ID:	ZZZZZZ	Batch ID:	58656	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/9/2016	SeqNo:	2348717

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.420	1.0	10.00	0	94.2	75	125	9.443	0.241	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160608D**	QC Batch: **R108873**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	6/8/2016 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_160608D**	QC Batch: **R108873**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	6/8/2016 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R108873**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **LCSW**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347955**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R108873**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **PBW**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347956**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N020006-001ADUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **ZZZZZZ**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347958**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	224.900	5.0						228.9	1.77	30	

Sample ID **N020006-002AMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **ZZZZZZ**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347960**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	263.052	5.0	100.0	156.6	106	75	125				

Sample ID **N020006-002AMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **108873**			
Client ID: **ZZZZZZ**	Batch ID: **R108873**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2016**			SeqNo: **2347961**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	265.060	5.0	100.0	156.6	108	75	125	263.1	0.760	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160608A** QC Batch: **R108880**			PrepDate				Analyst: **QBM**
Chloride	910	3.9	100		mg/L	200	6/8/2016 03:35 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160608A** QC Batch: **R108880**			PrepDate				Analyst: **QBM**
Sulfate	340	3.3	25		mg/L	50	6/8/2016 03:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160608A**	QC Batch: **R108880**			PrepDate			Analyst: **QBM**
Chloride	2100	9.7	250		mg/L	500	6/8/2016 04:37 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_160608A**	QC Batch: **R108880**			PrepDate			Analyst: **QBM**
Sulfate	490	6.6	50		mg/L	100	6/8/2016 03:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R108880_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	PBW	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348101

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R108880_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	LCSW	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348102

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.535	0.50	2.500	0	101	90	110				

Sample ID	N020006-001ADUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	871.200	100						844.8	3.08	20	

Sample ID	N020006-002AMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348108

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3378.000	250	1250	2096	103	80	120				

Sample ID	N020006-002AMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3452.500	250	1250	2096	109	80	120	3378	2.18	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R108880_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	PBW	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348120

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R108880_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	LCSW	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348121

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.951	0.50	5.000	0	99.0	90	110				

Sample ID	N020006-001ADUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	339.700	25						331.6	2.41	20	

Sample ID	N020006-002AMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348125

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	982.100	50	500.0	495.1	97.4	80	120				

Sample ID	N020006-002AMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ZZZZZZ	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	949.900	50	500.0	495.1	91.0	80	120	982.1	3.33	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160620A**	QC Batch: **R109043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	6/20/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_160620A**	QC Batch: **R109043**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	6/20/2016

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R109043	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	PBW	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355604

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R109043	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	LCSW	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.7	85	115				

Sample ID	N020006-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	ZZZZZZ	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355607

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.024	0.050						0.02590	0	20	

Sample ID	N020006-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	ZZZZZZ	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355608

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.573	0.050	0.5000	0.02590	110	75	125				

Sample ID	N020006-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	109043
Client ID:	ZZZZZZ	Batch ID:	R109043	TestNo:	SM4500-NO3			Analysis Date:	6/20/2016	SeqNo:	2355609

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.567	0.050	0.5000	0.02590	108	75	125	0.5734	1.12	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_160620C**	QC Batch: **58740**			PrepDate	**6/15/2016**		Analyst: **CEI**
Calcium	120000	28	500		ug/L	1	6/20/2016 01:55 PM
Iron	ND	1.8	20		ug/L	1	6/20/2016 01:55 PM
Magnesium	26000	4.4	100		ug/L	1	6/20/2016 01:55 PM
Sodium	680000	290	12000		ug/L	25	6/20/2016 04:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_160620C**	QC Batch: **58740**				PrepDate	**6/15/2016**	Analyst: **CEI**
Calcium	200000	28	500		ug/L	1	6/20/2016 02:00 PM
Iron	ND	1.8	20		ug/L	1	6/20/2016 02:00 PM
Magnesium	25000	4.4	100		ug/L	1	6/20/2016 02:00 PM
Sodium	1400000	580	25000		ug/L	50	6/20/2016 04:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-58740**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/15/2016**	RunNo: **109035**
Client ID: **PBW**	Batch ID: **58740**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/20/2016**	SeqNo: **2355256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	32.824	500									
Iron	8.631	20									
Magnesium	9.413	100									

Sample ID **LCS1-58740**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/15/2016**	RunNo: **109035**
Client ID: **LCSW**	Batch ID: **58740**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/20/2016**	SeqNo: **2355257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9847.448	500	10000	0	98.5	85	115				
Iron	97.542	20	100.0	0	97.5	85	115				
Magnesium	10260.843	100	10000	0	103	85	115				

Sample ID **N020008-001B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/15/2016**	RunNo: **109035**
Client ID: **ZZZZZZ**	Batch ID: **58740**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/20/2016**	SeqNo: **2355262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124833.486	500	10000	119900	49.1	75	125				S
Iron	111.360	20	100.0	0	111	75	125				
Magnesium	34582.825	100	10000	26120	84.6	75	125				

Sample ID **N020008-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/15/2016**	RunNo: **109035**
Client ID: **ZZZZZZ**	Batch ID: **58740**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/20/2016**	SeqNo: **2355263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124988.986	500	10000	119900	50.6	75	125	124800	0.124	20	S
Iron	112.159	20	100.0	0	112	75	125	111.4	0.715	20	
Magnesium	34604.918	100	10000	26120	84.8	75	125	34580	0.0639	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-58740	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/15/2016	RunNo:	109039
Client ID:	PBW	Batch ID:	58740	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/20/2016	SeqNo:	2355492

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-58740	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/15/2016	RunNo:	109039
Client ID:	LCSW	Batch ID:	58740	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/20/2016	SeqNo:	2355493

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19681.286	500	20000	0	98.4	85	115				

Sample ID	N020008-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/15/2016	RunNo:	109039
Client ID:	ZZZZZZ	Batch ID:	58740	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/20/2016	SeqNo:	2355506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1456030.586	25000	20000	1433000	115	75	125				

Sample ID	N020008-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/15/2016	RunNo:	109039
Client ID:	ZZZZZZ	Batch ID:	58740	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/20/2016	SeqNo:	2355507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1455036.831	25000	20000	1433000	110	75	125	1456000	0.0683	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-001

Client Sample ID: PE-01-0616
Collection Date: 6/7/2016 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160609B**	QC Batch: **58656**			PrepDate	**6/8/2016**		Analyst: **CEI**
Manganese	72	0.056	0.50		µg/L	1	6/9/2016 11:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N020008
Project: PG&E Topock - PMP, RC000753.801A
Lab ID: N020008-002

Client Sample ID: TW-03D-0616
Collection Date: 6/7/2016 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_160609B**	QC Batch: **58656**			PrepDate	**6/8/2016**		Analyst: **CEI**
Manganese	12	0.056	0.50		µg/L	1	6/9/2016 11:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-58656**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2016**	RunNo: **108878**
Client ID: **PBW**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-58656**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2016**	RunNo: **108878**
Client ID: **LCSW**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.071	0.50	100.0	0	98.1	85	115				

Sample ID **N020009-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2016**	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	133.701	0.50	100.0	38.75	95.0	75	125				

Sample ID **N020009-001C-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2016**	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	134.142	0.50	100.0	38.75	95.4	75	125	133.7	0.329	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		1. Chilled		
	Email: dan.bush@arcadis.com; daniel.moore@arcadis.com	Address:	Geotracker		RWQCB	✓	2. Headspace		
Address: Roseville, CA 95661	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	Labspec		CalTrans		3. Container Intact		
Phone: 916-786-3302 Fax:		P.O.#	Others	✓	LEVEL III		4. Seal Present		
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	Specify: RWQCB		LEVEL IV		5. IR number: 2		
Title: SR. Technician	Phone: 916-786-3302 Fax:		Global ID:		Regulatory		6. Method of Cooling: ICE		
Signature: Date: 6/7/16	Sampled By: GARY CLIFT				Specify State: CA		Sample Temp: 2.0°C		

I hereby authorize ASSET Labs to perform the tests indicated below

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Project Name: PG&E Topock - PMP
Project Number: RC000753.801A
Signature: Date: 6/7/16

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Courier:
Tracking No.

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4, OH 250 mL poly	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH 250 mL poly	Dissolved metals (SW6020A) FF: HNO3 500 mL poly Cr 1 L poly	Dissolved metals (SW6010B/SW6020Ads) FF: HNO3 Ca, Mg, Mn, Fe, Na 1 L poly	Dissolved metals (SW6010B/SW6020Ads) FF: HNO3 As, Mn, Fe, Se, Mo, Ba 1 L poly	Total metals (SW6010B): HNO3 Fe 500 mL poly	Anions (E300.0): Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500NO3) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N020008 - 01	PE-01-0616	6/7/2016	935		X		X	X			X	X	X	X	X		X	E	4	P	BN	
2	- 02	TW-03D-0616	6/7/2016	945			X	X	X			X	X	X	X	X		X	E	4	P	BN	
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
	6/7/16 1520		6/7/16 1520
	6/7/16 PM		6/7/16 1730

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
Regular TAT is 5-7 business days surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
Custom EDD formats will be an additional 5% of the total project price
Add 10% surcharge for Level III Data Packages 15% for Level IV Data Packages Surcharge applies on total project price

5 Trip Blanks and Equipment Blanks are billable sample
6 Asset Laboratories is not responsible for samples collected using incorrect methodology
7 Terms are net 30 days
8 All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9 For subcontract analyses TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	6/7/2016	Workorder:	N020008
Rep sample Temp (Deg C):	2.3	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for pH was passed holding time upon receipt.

Checklist Completed By: HG For: 6/8/16

Reviewed By: 06/08/16

ASSET Laboratories

WORK ORDER Summary

08-Jun-16

WorkOrder: N020008

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 6/7/2016

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N020008-001A	PE-01-0616	6/7/2016 8:35:00 AM	6/21/2016	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	JJS
N020008-001B			6/21/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/21/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N020008-001C			6/21/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LR
			6/21/2016		SM4500-H+B	pH	☐	☐	☐	LR
			6/21/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LR
			6/21/2016			Total Dissolved Solids Prep	☐	☐	☐	LR
			6/21/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LR
			6/21/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LR
			6/21/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LR
			6/21/2016		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LR
N020008-001D			6/21/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N020008-002A	TW-03D-0616	6/7/2016 8:45:00 AM	6/21/2016		SM 3500-Cr B	HEXAVALENT CHROMIUM	☐	☐	☐	WW
N020008-002B			6/21/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2016		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2016		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/21/2016		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N020008-002C			6/21/2016		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LR

ASSET Laboratories

WORK ORDER Summary

08-Jun-16

WorkOrder: N020008

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 6/7/2016

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N020008-002C	TW-03D-0616	6/7/2016 8:45:00 AM	6/21/2016	Groundwater	SM4500-H+B	pH	☐	☐	☐	LR
			6/21/2016		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LR
			6/21/2016			Total Dissolved Solids Prep	☐	☐	☐	LR
			6/21/2016		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LR
			6/21/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LR
			6/21/2016		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LR
			6/21/2016		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LR
N020008-002D			6/21/2016		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N020008-003A	FOLDER		6/21/2016		EDD	RWQCB	☐	☐	☐	LAB
			6/21/2016		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N020008**

NAME	TEST METHOD
Jannette Soria	EPA 218.6
Claire Ignacio	EPA 6020_Dissolved, EPA 6010B_Dissolved
Ryan Balilu	SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 4500 H+B, SM 2540C, SM 2320B
Quennie Manimtim	SM 3500-Cr B , EPA 300

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108876 **Analyst:** LSR

ASSET #: N020008 **Date Analyzed:** 6/8/2016

Method: EAPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 6/9/2016

2nd Level Reviewer [signature] Date: 6/21/2016

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 6/8/16 1355

Analyst: ISE

Standard	Std ID	Reading	Comments
1413 µS/cm	CINV - 160111A	1415 µS/cm @ 28.2°C	% Rec: (90-110%)
1412	151012A	1415 @ 28.3°C	
9992	160111B	9920 @ 28.4°C	
100005	160322B	98100 @ 28.5°C	

	Sample ID	Matrix	Reading	Comments
1	NO2000 6 - 001A	Naka	3620 µS/cm @ 27.9°C	
2	2A		7450 @ 27.9°C	
3	NO2000 7 - 001A		7420 @ 27.5°C	
4	2A		7150 @ 27.9°C	
5	NO2000 8 - 001C		3700 @ 27.2°C	
6	2C		7350 @ 27.8°C	
7	2C DUP		7230 @ 27.2°C	
8				
9	1413 µS/cm	CINV - 160111E	1424 µS/cm @ 27.4	
10	100005	150909A	10470 @ 27.5°C	
Dup	99993	151120A	100500 @ 27.7°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Silvia Ramit 6/9/2016

Date:

Analyst:

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500 H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108870 **Instrument ID:** pH meter

ASSET #: N020008 **Analyst:** LSR

Date Analyzed: 6/8/2016

Method: EPA 150.1

pH Meter Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 6/9/2016

2nd Level Reviewer [signature] Date: 6/22/2016

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 6/3/16 910

Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CINV-160322A	4.02 @ 24.9°C	SLOPE: 99.1%
Buffer 7	160309A	7.02 @ 25.0°C	
Buffer 10	160111D	10.02 @ 24.5°C	

	Sample ID	Matrix	pH	Comments
1	ND19959-001B	Water	7.44 @ 17.2°C	
2	2B		7.15 @ 17.3°C	
3	3B		7.21 @ 17.1°C	
4	4B		7.25 @ 17.7°C	
5	5B		7.32 @ 17.0°C	
6	6B		7.14 @ 17.3°C	
7	7B		7.19 @ 17.7°C	
8	8B		7.14 @ 17.9°C	
9	9B		7.34 @ 18.6°C	
10	10B		7.26 @ 18.5°C	
Dup	1B DUP		7.45 @ 17.4°C	Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CINV-160111C	7.05 @ 24.5°C	Accept: +/-0.1 pH units from expected value

Date: 6/8/16 1222

Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CINV-160322A	4.02 @ 27.7°C	SLOPE: 98.4%
Buffer 7	160309A	7.01 @ 27.6°C	
Buffer 10	160111D	10.00 @ 27.6°C	

	Sample ID	Matrix	pH	Comments
1	ND20008-001C	H2O	7.52 @ 25°C	
2	1C DUP		7.57 @ 25.3°C	
3	2C		7.30 @ 25.2°C	
4				
5				
6				
7				
8				
9				VKR 6/8/16
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CINV-160111C	7.05 @ 27.5°C	Accept: +/-0.1 pH units from expected value

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58671 **Analyst:** LSR

ASSET #: N020008 **Date Analyzed:** 6/8/2016

Method: EAPA 160.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 6/9/2016

2nd Level Reviewer: jas Date: 6/16/2016

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N020008-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(76.7711–76.6836)*1000000}{40}$$

=2187.5 mg/L

Reporting result in two significant figures,

TDS = 2200 mg/L

Julia Ramit 6/9/2016

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 6/8/2016 1:44:40 P
Prep End Date:

Initials/ Date: Lilia Ramit 6/9/2016

Prep Batch 58671 Prep Code: 160.1_W_PRE Technician: Lilia Ramit

Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58671	Water	INITIAL	100	☐	0	0	100	1.000		
MB-58671	Water		100	☐	0	0	100	1.000		
N019977-004B	Water	4980	100 /30	☐	0	0	100	1.000		
N020006-001A	Water	3630	100 /40	☐	0	0	100	1.000		
N020006-002A	Water	7450	100 /20	☐	0	0	100	1.000		
N020006-002A-DU	Water	1	100 /20	☐	0	0	100	1.000		
N020007-001A	Water	7430	100 /20	☐	0	0	100	1.000		
N020007-002A	Water	7150	100 /20	☐	0	0	100	1.000		
N020008-001C	Groundwater	3700	100 /40	☐	0	0	100	1.000		
N020008-002C	Groundwater	7350	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

#8394
#8395

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/8/2016 1:44:40 P**
Prep End Date: **6/9/2016 11:25:00 A**
Initials/ Date: Lilia Ramit 6/9/2016

Prep Batch **58671** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58671	Water		100	☐	0	0	100	1.000		
MB-58671	Water		100	☐	0	0	100	1.000		
N019977-004B	Water		30	☐	0	0	100	3.333		
N020006-001A	Water		40	☐	0	0	100	2.500		
N020006-002A	Water		20	☐	0	0	100	5.000		
N020006-002A-DU	Water		20	☐	0	0	100	5.000		
N020007-001A	Water		20	☐	0	0	100	5.000		
N020007-002A	Water		20	☐	0	0	100	5.000		
N020008-001C	Groundwater		40	☐	0	0	100	2.500		
N020008-002C	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8394	Glass Fiber Filter, 47mm
8395	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST160601A	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/8/16 1344 LR	MB 58671	100	77.1377 77.1374	77.1373 77.1375	
LR	LCS 58671	100	74.6886 74.6885	74.7850 74.7853	
LR	NO19977-004B	30	76.7583 76.7581	76.8973 76.8973	
LR	NO20006-001A	40	76.5789 76.5793	76.6663 76.6660	
BC	2A	20	62.3824 62.3825	62.4783 62.4736	
DMA	2A DUP	20	54.7306 54.7306	54.8197 54.8197	
RR	NO20007-001A	20	63.9015 63.9016	63.9906 63.9910	
34	2A	20	63.3554 63.3556	63.4379 63.4380	
41	NO20008-001C	40	76.6834 76.6836	76.7707 76.7711	
21	2C	20	55.0121 55.0123	55.1002 55.1005	

Julia Ramit 6/9/2016

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
6/9/2016									
MBLK-58671	100	77.1374	77.1375	1	1	1			MBLK
LCS-58671	100	74.6885	74.7853	968	1	968			LCS
N019977-004B	30	76.7581	76.8973	1392	3.33333333	4640	4980	0.932	SAMP
N020006-001A	40	76.5793	76.666	867	2.5	2167.5	3630	0.597	SAMP
N020006-002A	20	62.3825	62.4736	911	5	4555	7450	0.611	SAMP
N020006-002ADUP	20	54.7306	54.8197	891	5	4455	7450	0.598	DUP
N020007-001A	20	63.9016	63.991	894	5	4470	7430	0.602	SAMP
N020007-002A	20	63.3556	63.438	824	5	4120	7150	0.576	SAMP
N020008-001C	40	76.6836	76.7711	875	2.5	2187.5	3700	0.591	SAMP
N020008-002C	20	55.0123	55.1005	882	5	4410	7350	0.600	SAMP

Julia Ramit 6/9/2016

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108868
ASSET #: N020008

Instrument ID: IC-07
Analyst: JAS
Date Analyzed: 6/8/2016

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X		~~X~~			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	~~X~~					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 6/9/2016

2nd Level Reviewer 6/22/2016 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in μg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = μg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N020008-001A** concentration in μg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.8271 * 1$$

$$= 0.8271$$

Reporting result in two significant figures,

Cr^{+6}, μg/L = 0.83

ANALYSIS RUN LOG

INJECTION LOG: 160526A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:41 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:52 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 10:01 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/26/16 10:11 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:20 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:30 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:39 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:49 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:58 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 11:08 AM	Reported
11	ICV	ICV	1	Hexavalent Chromium	05/26/16 11:19 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/26/16 11:31 AM	Reported
13	ICB	ICB	1	Hexavalent Chromium	05/26/16 11:40 AM	Reported
14	MB-R108684	MBLK	1	Hexavalent Chromium	05/26/16 11:50 AM	Reported
15	LCS-R108684	LCS	1	Hexavalent Chromium	05/26/16 11:59 AM	Reported
16	N019899-001A	SAMP	1	Hexavalent Chromium	05/26/16 12:09 PM	Reported
17	N019899-001ADUP	DUP	1	Hexavalent Chromium	05/26/16 12:18 PM	Reported
18	N019899-001AMS	MS	1	Hexavalent Chromium	05/26/16 12:28 PM	Reported
19	N019899-001AMSD	MSD	1	Hexavalent Chromium	05/26/16 12:37 PM	Reported
20	N019900-001A	SAMP	1	Hexavalent Chromium	05/26/16 12:47 PM	Not Reported
21	N019900-001AMS	MS	1	Hexavalent Chromium	05/26/16 12:56 PM	Not Reported
22	N019856-003A	SAMP	1	Hexavalent Chromium	05/26/16 1:06 PM	Reported
23	N019856-004A	SAMP	1	Hexavalent Chromium	05/26/16 1:15 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	05/26/16 1:24 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	05/26/16 1:34 PM	Reported
26	N019869-001A	SAMP	1	Hexavalent Chromium	05/26/16 1:43 PM	Reported
27	N019869-002A	SAMP	1	Hexavalent Chromium	05/26/16 1:53 PM	Reported
28	N019869-003A	SAMP	1	Hexavalent Chromium	05/26/16 2:02 PM	Reported
29	N019869-004A	SAMP	1	Hexavalent Chromium	05/26/16 2:12 PM	Reported
30	N019869-005A	SAMP	1	Hexavalent Chromium	05/26/16 2:21 PM	Reported
31	N019869-006A	SAMP	1	Hexavalent Chromium	05/26/16 2:31 PM	Reported
32	N019869-007A	SAMP	1	Hexavalent Chromium	05/26/16 2:40 PM	Reported
33	N019869-008A	SAMP	1	Hexavalent Chromium	05/26/16 2:50 PM	Reported
34	N019869-009A	SAMP	1	Hexavalent Chromium	05/26/16 2:59 PM	Reported
35	N019869-010A	SAMP	1	Hexavalent Chromium	05/26/16 3:09 PM	Reported
36	CCV-2	CCV	1	Hexavalent Chromium	05/26/16 3:18 PM	Reported
37	CCB-2	CCB	1	Hexavalent Chromium	05/26/16 3:27 PM	Reported
38	N019869-008A	SAMP	1	Hexavalent Chromium	05/26/16 3:37 PM	Not Reported
39	N019900-001A	SAMP	20	Hexavalent Chromium	05/26/16 3:46 PM	Reported
40	N019900-001AMS	MS	20	Hexavalent Chromium	05/26/16 3:56 PM	Reported
41	CCV-3	CCV1	1	Hexavalent Chromium	05/26/16 4:10 PM	Reported
42	CCB-3	CCB	1	Hexavalent Chromium	05/26/16 4:22 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160526A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**26/May/16 16:52:32**
No. of Injections:	**45**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/26/2016 09:41	Finished	
2	BLANK	2	1000	Unknown		05/26/2016 09:52	Finished	
3	BLANK	3	1000	Unknown		05/26/2016 10:01	Finished	
4	iBLANK	4	1000	Unknown		05/26/2016 10:11	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Calibration Standard	01	05/26/2016 10:20	Finished	0.2 ppb, IWST160401A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	05/26/2016 10:30	Finished	1.0 ppb, IWST160401A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	05/26/2016 10:39	Finished	5.0 ppb, IWST160401A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	05/26/2016 10:49	Finished	10 ppb, IWST160401A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	05/26/2016 10:58	Finished	15 ppb, IWST160401A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	05/26/2016 11:08	Finished	20 ppb, IWST160401A
11	ICV,ICV,1,	11	1000	Unknown		05/26/2016 11:19	Finished	ICV @5ppb, IWST-160401B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		05/26/2016 11:31	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		05/26/2016 11:40	Finished	ICB R160523B
14	MB-H2O,MBLK,1	14	1000	Unknown		05/26/2016 11:50	Finished	MB R160502C
15	LCS-H2O,LCS,1	15	1000	Unknown		05/26/2016 11:59	Finished	LCS, IWST-160401B
16	N019899-001A,SAMP	16	1000	Unknown		05/26/2016 12:09	Finished	SAMP, 10 mL
17	N019899-001ADUP,D	17	1000	Unknown		05/26/2016 12:18	Finished	DUP, 10 mL
18	N019899-001AMS,MS	18	1000	Unknown		05/26/2016 12:28	Finished	MS (5ppb), IWST-160401B, 10
19	N019899-001AMSD,M	19	1000	Unknown		05/26/2016 12:37	Finished	MSD (5ppb), IWST-160401B, 1
20	N019900-001A,SAMP	20	1000	Unknown		05/26/2016 12:47	Finished	SAMP, 10 mL
21	N019900-001AMS,MS	21	1000	Unknown		05/26/2016 12:56	Finished	MS (1ppb), IWST-160401B, 10
22	N019856-003A,SAMP	22	1000	Unknown		05/26/2016 13:06	Finished	LOD 0.15 ppb, 10 mL
23	N019856-004A,SAMP	23	1000	Unknown		05/26/2016 13:15	Finished	PQL 0.20 mL, 10 mL
24	CCV-1,CCV1,1,	24	1000	Unknown		05/26/2016 13:24	Finished	CCV @10ppb, IWST-160401A
25	CCB-1,CCB,1,	25	1000	Unknown		05/26/2016 13:34	Finished	CCB
26	N019869-001A,SAMP	26	1000	Unknown		05/26/2016 13:43	Finished	SAMP, 10 mL
27	N019869-002A,SAMP	27	1000	Unknown		05/26/2016 13:53	Finished	SAMP, 10 mL
28	N019869-003A,SAMP	28	1000	Unknown		05/26/2016 14:02	Finished	SAMP, 10 mL
29	N019869-004A,SAMP	29	1000	Unknown		05/26/2016 14:12	Finished	SAMP, 10 mL
30	N019869-005A,SAMP	30	1000	Unknown		05/26/2016 14:21	Finished	SAMP, 10 mL
31	N019869-006A,SAMP	31	1000	Unknown		05/26/2016 14:31	Finished	SAMP, 10 mL
32	N019869-007A,SAMP	32	1000	Unknown		05/26/2016 14:40	Finished	SAMP, 10 mL
33	N019869-008A,SAMP	33	1000	Unknown		05/26/2016 14:50	Finished	SAMP, 10 mL
34	N019869-009A,SAMP	34	1000	Unknown		05/26/2016 14:59	Finished	SAMP, 10 mL
35	N019869-010A,SAMP	35	1000	Unknown		05/26/2016 15:09	Finished	SAMP, 10 mL
36	CCV-2,CCV,1,	36	1000	Unknown		05/26/2016 15:18	Finished	CCV @5ppb, IWST-160401A
37	CCB-2,CCB,1,	37	1000	Unknown		05/26/2016 15:27	Finished	CCB R160426G
38	N019869-008A,SAMP	38	1000	Unknown		05/26/2016 15:37	Finished	SAMP, 10 mL
39	N019900-001A,SAMP	39	1000	Unknown		05/26/2016 15:46	Finished	SAMP, 0.5>10 mL
40	N019900-001AMS,MS	40	1000	Unknown		05/26/2016 15:56	Finished	MS (5ppb), IWST-160401B, 0.5
41	CCV-3,CCV1,1,	41	1000	Unknown		05/26/2016 16:10	Finished	CCV @10ppb, IWST-160401A
42	CCB-3,CCB,1,	42	1000	Unknown		05/26/2016 16:22	Finished	CCB
43	SHUTDOWN	43	1000	Unknown		05/26/2016 16:31	Finished	
44	Eluent: R160517A	44	1000	Unknown		n.a.	Finished	Eluent
45	PCR: R160523A	45	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 160608A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:41 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:52 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 10:01 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/26/16 10:11 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:20 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:30 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:39 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:49 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:58 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 11:08 AM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/08/16 11:56 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	06/08/16 12:07 PM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	06/08/16 12:17 PM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/08/16 12:26 PM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	06/08/16 12:36 PM	Reported
16	MB-R108868	MBLK	1	Hexavalent Chromium	06/08/16 12:45 PM	Reported
17	LCS-R108868	LCS	1	Hexavalent Chromium	06/08/16 12:55 PM	Reported
18	N020007-001B	SAMP	100	Hexavalent Chromium	06/08/16 1:04 PM	Reported
19	N020007-001BDUP	DUP	100	Hexavalent Chromium	06/08/16 1:14 PM	Reported
20	N020007-001BMS	MS	100	Hexavalent Chromium	06/08/16 1:23 PM	Reported
21	N020007-001BMSD	MSD	100	Hexavalent Chromium	06/08/16 1:33 PM	Reported
22	N020007-002B	SAMP	1	Hexavalent Chromium	06/08/16 1:42 PM	Reported
23	N020007-002BMS	MS	1	Hexavalent Chromium	06/08/16 1:52 PM	Reported
24	N020008-001A	SAMP	1	Hexavalent Chromium	06/08/16 2:01 PM	Reported
25	N020008-001AMS	MS	1	Hexavalent Chromium	06/08/16 2:10 PM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	06/08/16 2:20 PM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	06/08/16 2:29 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160608A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**08/Jun/16 16:53:42**
No. of Injections:	**30**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/26/2016 09:41	Finished	
2	BLANK	2	1000	Unknown		05/26/2016 09:52	Finished	
3	BLANK	3	1000	Unknown		05/26/2016 10:01	Finished	
4	iBLANK	4	1000	Unknown		05/26/2016 10:11	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Calibration Standard	01	05/26/2016 10:20	Finished	0.2 ppb, IWST160401A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	05/26/2016 10:30	Finished	1.0 ppb, IWST160401A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	05/26/2016 10:39	Finished	5.0 ppb, IWST160401A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	05/26/2016 10:49	Finished	10 ppb, IWST160401A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	05/26/2016 10:58	Finished	15 ppb, IWST160401A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	05/26/2016 11:08	Finished	20 ppb, IWST160401A
11	BLANK	1	1000	Unknown		06/08/2016 11:56	Finished	
12	BLANK	2	1000	Unknown		06/08/2016 12:07	Finished	
13	CCV-1,CCV,1,	3	1000	Unknown		06/08/2016 12:17	Finished	CCV @5ppb, IWST-160401A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/08/2016 12:26	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		06/08/2016 12:36	Finished	CCB R160608C
16	MB-H2O,MBLK,1	6	1000	Unknown		06/08/2016 12:45	Finished	MB R160526A
17	LCS-H2O,LCS,1	7	1000	Unknown		06/08/2016 12:55	Finished	LCS, IWST-160401B
18	N020007-001B,SAMP	8	1000	Unknown		06/08/2016 13:04	Finished	SAMP, 0.1>10 mL
19	N020007-001BDUP,D	9	1000	Unknown		06/08/2016 13:14	Finished	DUP, 0.1>10 mL
20	N020007-001BMS,MS	10	1000	Unknown		06/08/2016 13:23	Finished	MS(5ppb), IWST-160401B, 0.1
21	N020007-001BMSD,M	11	1000	Unknown		06/08/2016 13:33	Finished	MSD(5ppb), IWST-160401B, 0.
22	N020007-002B,SAMP	12	1000	Unknown		06/08/2016 13:42	Finished	SAMP, 10 mL
23	N020007-002BMS,MS	13	1000	Unknown		06/08/2016 13:52	Finished	MS(1ppb), IWST-160401B, 10r
24	N020008-001A,SAMP	14	1000	Unknown		06/08/2016 14:01	Finished	SAMP, 10 mL
25	N020008-001AMS,MS	15	1000	Unknown		06/08/2016 14:10	Finished	MS(1ppb), IWST-160401B, 10r
26	CCV-2,CCV1,1,	16	1000	Unknown		06/08/2016 14:20	Finished	CCV @10ppb, IWST-160401A
27	CCB-2,CCB,1,	17	1000	Unknown		06/08/2016 14:29	Finished	CCB
28	SHUTDOWN	18	1000	Unknown		06/08/2016 14:49	Finished	
29	Eluent: R160603B	19	1000	Unknown		n.a.	Finished	Eluent
30	PCR: R160608B	20	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

6/9/2016

Sample Preparation

Date Prepared: 6/8/16
Time Prepared: 11:10 AM
Prepared By: JM

slope: 98.6 %
pH 7: 7.02 @ 27.7
4: 4.01 @ 27.8
10: 10.00 @ 27.8
LCS: 7.05 @ 27.5

Reagent ID:
Sulfuric Acid: 8403
Diphenylcarbazide: CINV-160125 H
NH4OH + NH4SO4 eluent: R160603B
NH4OH + NH4SO4 buffer: R160522A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NG20006-1D	9.35	-	-	-	-	
2)	-2D	9.30	-	-	-	-	lab filtered, lab preserved
3)	NG20007-1D	9.31	-	-	-	-	
4)	-2B	9.36	-	-	-	-	
5)	NG20008-1A	9.23	9.36	~250mL	~250 mL	+ 2 drops 6N NaOH	R160522A
6)	-2A	9.25	9.38	↓	↓	+ 2 drops 6N NaOH	↓
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared:
Time Prepared:
Prepared By:

Reagent ID:
Sulfuric Acid:
Diphenylcarbazide:
NH4OH + NH4SO4 eluent:
NH4OH + NH4SO4 buffer:

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)							
2)							
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 10

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 5/26/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0446	0.2470	1.2314	2.4536	3.7141	4.9068	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST160401A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ICV**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **5/26/2016**	SeqNo: **2347879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.116	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **5/26/2016**	SeqNo: **2347880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.208	0.20	0.2000	0	104	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **CCV**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.054	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.214	0.20	0.2000	0	107	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ZZZZZZ**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.925	0.20	10.00	0	99.3	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **ICB**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **5/26/2016**	SeqNo: **2347881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **CCB**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **108868**
Client ID: **CCB**	Batch ID: **R108868**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2016**	SeqNo: **2347896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/8/2016

Sample Name	Retention Time	Evaluation
CCV-1	5.065	
CCV-2	5.056	
Average	5.061	
Actual RT Window	4.981 - 5.141	
Applied RT Window	4.861 - 5.261	
MB-R108868	N.A.	N.A.
LCS-R108868	5.056	PASS
N020007-001B	5.056	PASS
N020007-001BDUP	5.056	PASS
N020007-001BMS	5.065	PASS
N020007-001BMSD	5.056	PASS
N020007-002B	4.931	PASS
N020007-002BMS	4.948	PASS
N020008-001A	5.006	PASS
N020008-001AMS	5.015	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 160526A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:41 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:52 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 10:01 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/26/16 10:11 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:20 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:30 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:39 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:49 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:58 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 11:08 AM	Reported
11	ICV	ICV	1	Hexavalent Chromium	05/26/16 11:19 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/26/16 11:31 AM	Reported
13	ICB	ICB	1	Hexavalent Chromium	05/26/16 11:40 AM	Reported
14	MB-R108684	MBLK	1	Hexavalent Chromium	05/26/16 11:50 AM	Reported
15	LCS-R108684	LCS	1	Hexavalent Chromium	05/26/16 11:59 AM	Reported
16	N019899-001A	SAMP	1	Hexavalent Chromium	05/26/16 12:09 PM	Reported
17	N019899-001ADUP	DUP	1	Hexavalent Chromium	05/26/16 12:18 PM	Reported
18	N019899-001AMS	MS	1	Hexavalent Chromium	05/26/16 12:28 PM	Reported
19	N019899-001AMSD	MSD	1	Hexavalent Chromium	05/26/16 12:37 PM	Reported
20	N019900-001A	SAMP	1	Hexavalent Chromium	05/26/16 12:47 PM	Not Reported
21	N019900-001AMS	MS	1	Hexavalent Chromium	05/26/16 12:56 PM	Not Reported
22	N019856-003A	SAMP	1	Hexavalent Chromium	05/26/16 1:06 PM	Reported
23	N019856-004A	SAMP	1	Hexavalent Chromium	05/26/16 1:15 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	05/26/16 1:24 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	05/26/16 1:34 PM	Reported
26	N019869-001A	SAMP	1	Hexavalent Chromium	05/26/16 1:43 PM	Reported
27	N019869-002A	SAMP	1	Hexavalent Chromium	05/26/16 1:53 PM	Reported
28	N019869-003A	SAMP	1	Hexavalent Chromium	05/26/16 2:02 PM	Reported
29	N019869-004A	SAMP	1	Hexavalent Chromium	05/26/16 2:12 PM	Reported
30	N019869-005A	SAMP	1	Hexavalent Chromium	05/26/16 2:21 PM	Reported
31	N019869-006A	SAMP	1	Hexavalent Chromium	05/26/16 2:31 PM	Reported
32	N019869-007A	SAMP	1	Hexavalent Chromium	05/26/16 2:40 PM	Reported
33	N019869-008A	SAMP	1	Hexavalent Chromium	05/26/16 2:50 PM	Reported
34	N019869-009A	SAMP	1	Hexavalent Chromium	05/26/16 2:59 PM	Reported
35	N019869-010A	SAMP	1	Hexavalent Chromium	05/26/16 3:09 PM	Reported
36	CCV-2	CCV	1	Hexavalent Chromium	05/26/16 3:18 PM	Reported
37	CCB-2	CCB	1	Hexavalent Chromium	05/26/16 3:27 PM	Reported
38	N019869-008A	SAMP	1	Hexavalent Chromium	05/26/16 3:37 PM	Not Reported
39	N019900-001A	SAMP	20	Hexavalent Chromium	05/26/16 3:46 PM	Reported
40	N019900-001AMS	MS	20	Hexavalent Chromium	05/26/16 3:56 PM	Reported
41	CCV-3	CCV1	1	Hexavalent Chromium	05/26/16 4:10 PM	Reported
42	CCB-3	CCB	1	Hexavalent Chromium	05/26/16 4:22 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160526A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**26/May/16 16:52:32**
No. of Injections:	**45**	*Updated By:*	**ics 5000**

Injection Details

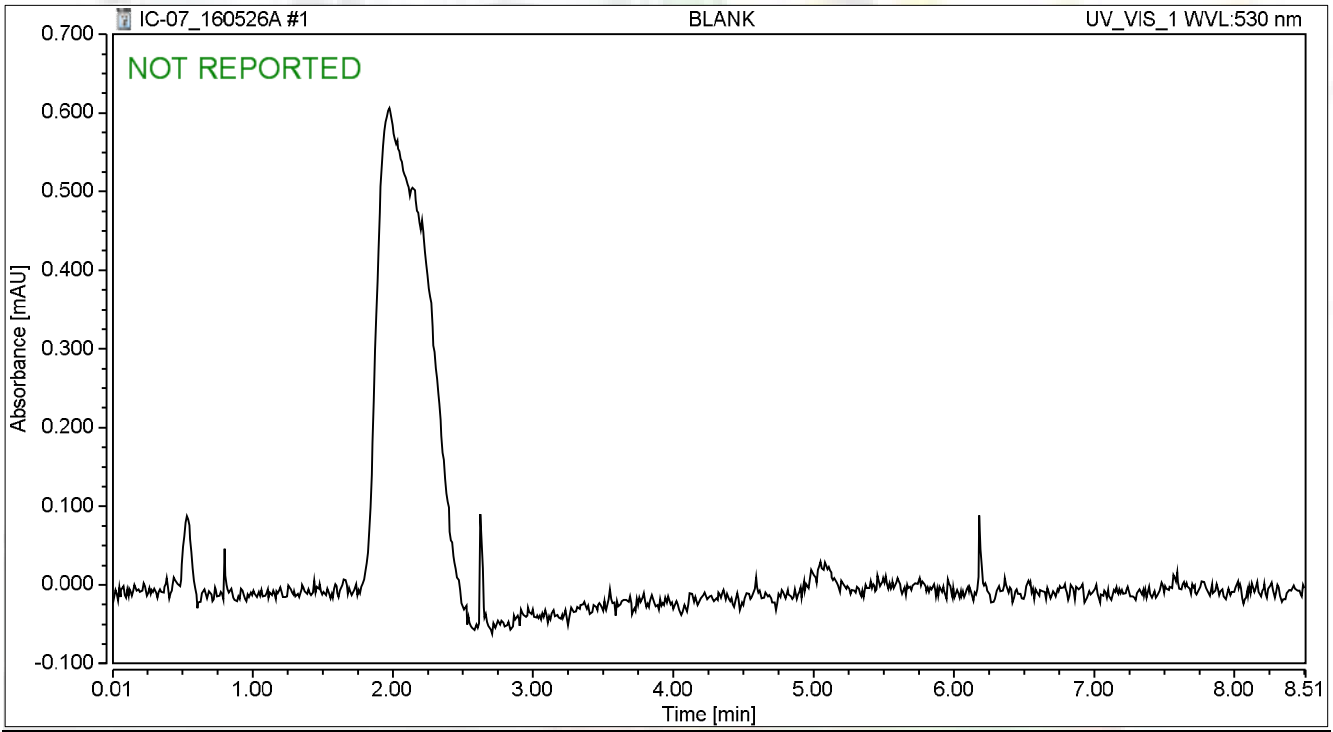
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/26/2016 09:41	Finished	
2	BLANK	2	1000	Unknown		05/26/2016 09:52	Finished	
3	BLANK	3	1000	Unknown		05/26/2016 10:01	Finished	
4	iBLANK	4	1000	Unknown		05/26/2016 10:11	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Calibration Standard	01	05/26/2016 10:20	Finished	0.2 ppb, IWST160401A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	05/26/2016 10:30	Finished	1.0 ppb, IWST160401A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	05/26/2016 10:39	Finished	5.0 ppb, IWST160401A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	05/26/2016 10:49	Finished	10 ppb, IWST160401A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	05/26/2016 10:58	Finished	15 ppb, IWST160401A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	05/26/2016 11:08	Finished	20 ppb, IWST160401A
11	ICV,ICV,1,	11	1000	Unknown		05/26/2016 11:19	Finished	ICV @5ppb, IWST-160401B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		05/26/2016 11:31	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		05/26/2016 11:40	Finished	ICB R160523B
14	MB-H2O,MBLK,1	14	1000	Unknown		05/26/2016 11:50	Finished	MB R160502C
15	LCS-H2O,LCS,1	15	1000	Unknown		05/26/2016 11:59	Finished	LCS, IWST-160401B
16	N019899-001A,SAMP	16	1000	Unknown		05/26/2016 12:09	Finished	SAMP, 10 mL
17	N019899-001ADUP,D	17	1000	Unknown		05/26/2016 12:18	Finished	DUP, 10 mL
18	N019899-001AMS,MS	18	1000	Unknown		05/26/2016 12:28	Finished	MS (5ppb), IWST-160401B, 10
19	N019899-001AMSD,M	19	1000	Unknown		05/26/2016 12:37	Finished	MSD (5ppb), IWST-160401B, 1
20	N019900-001A,SAMP	20	1000	Unknown		05/26/2016 12:47	Finished	SAMP, 10 mL
21	N019900-001AMS,MS	21	1000	Unknown		05/26/2016 12:56	Finished	MS (1ppb), IWST-160401B, 10
22	N019856-003A,SAMP	22	1000	Unknown		05/26/2016 13:06	Finished	LOD 0.15 ppb, 10 mL
23	N019856-004A,SAMP	23	1000	Unknown		05/26/2016 13:15	Finished	PQL 0.20 mL, 10 mL
24	CCV-1,CCV1,1,	24	1000	Unknown		05/26/2016 13:24	Finished	CCV @10ppb, IWST-160401A
25	CCB-1,CCB,1,	25	1000	Unknown		05/26/2016 13:34	Finished	CCB
26	N019869-001A,SAMP	26	1000	Unknown		05/26/2016 13:43	Finished	SAMP, 10 mL
27	N019869-002A,SAMP	27	1000	Unknown		05/26/2016 13:53	Finished	SAMP, 10 mL
28	N019869-003A,SAMP	28	1000	Unknown		05/26/2016 14:02	Finished	SAMP, 10 mL
29	N019869-004A,SAMP	29	1000	Unknown		05/26/2016 14:12	Finished	SAMP, 10 mL
30	N019869-005A,SAMP	30	1000	Unknown		05/26/2016 14:21	Finished	SAMP, 10 mL
31	N019869-006A,SAMP	31	1000	Unknown		05/26/2016 14:31	Finished	SAMP, 10 mL
32	N019869-007A,SAMP	32	1000	Unknown		05/26/2016 14:40	Finished	SAMP, 10 mL
33	N019869-008A,SAMP	33	1000	Unknown		05/26/2016 14:50	Finished	SAMP, 10 mL
34	N019869-009A,SAMP	34	1000	Unknown		05/26/2016 14:59	Finished	SAMP, 10 mL
35	N019869-010A,SAMP	35	1000	Unknown		05/26/2016 15:09	Finished	SAMP, 10 mL
36	CCV-2,CCV,1,	36	1000	Unknown		05/26/2016 15:18	Finished	CCV @5ppb, IWST-160401A
37	CCB-2,CCB,1,	37	1000	Unknown		05/26/2016 15:27	Finished	CCB R160426G
38	N019869-008A,SAMP	38	1000	Unknown		05/26/2016 15:37	Finished	SAMP, 10 mL
39	N019900-001A,SAMP	39	1000	Unknown		05/26/2016 15:46	Finished	SAMP, 0.5>10 mL
40	N019900-001AMS,MS	40	1000	Unknown		05/26/2016 15:56	Finished	MS (5ppb), IWST-160401B, 0.5
41	CCV-3,CCV1,1,	41	1000	Unknown		05/26/2016 16:10	Finished	CCV @10ppb, IWST-160401A
42	CCB-3,CCB,1,	42	1000	Unknown		05/26/2016 16:22	Finished	CCB
43	SHUTDOWN	43	1000	Unknown		05/26/2016 16:31	Finished	
44	Eluent: R160517A	44	1000	Unknown		n.a.	Finished	Eluent
45	PCR: R160523A	45	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 09:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

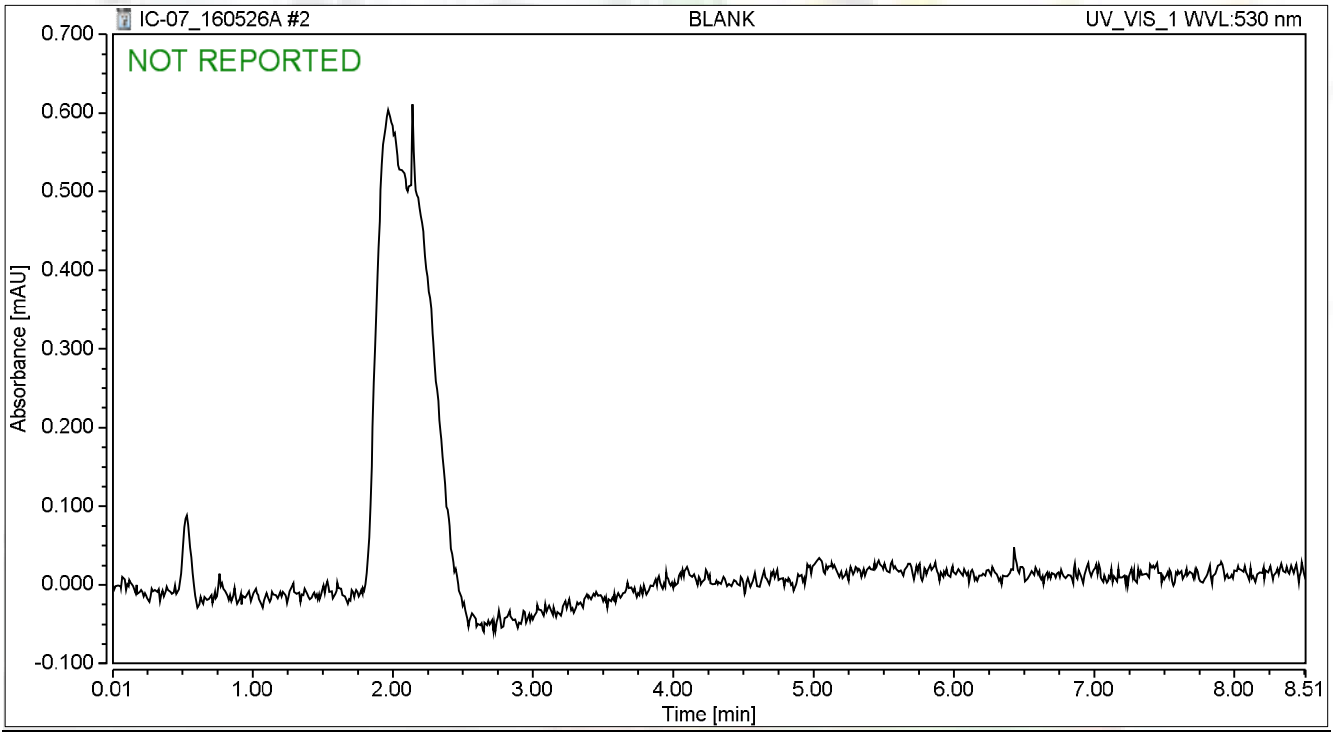
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

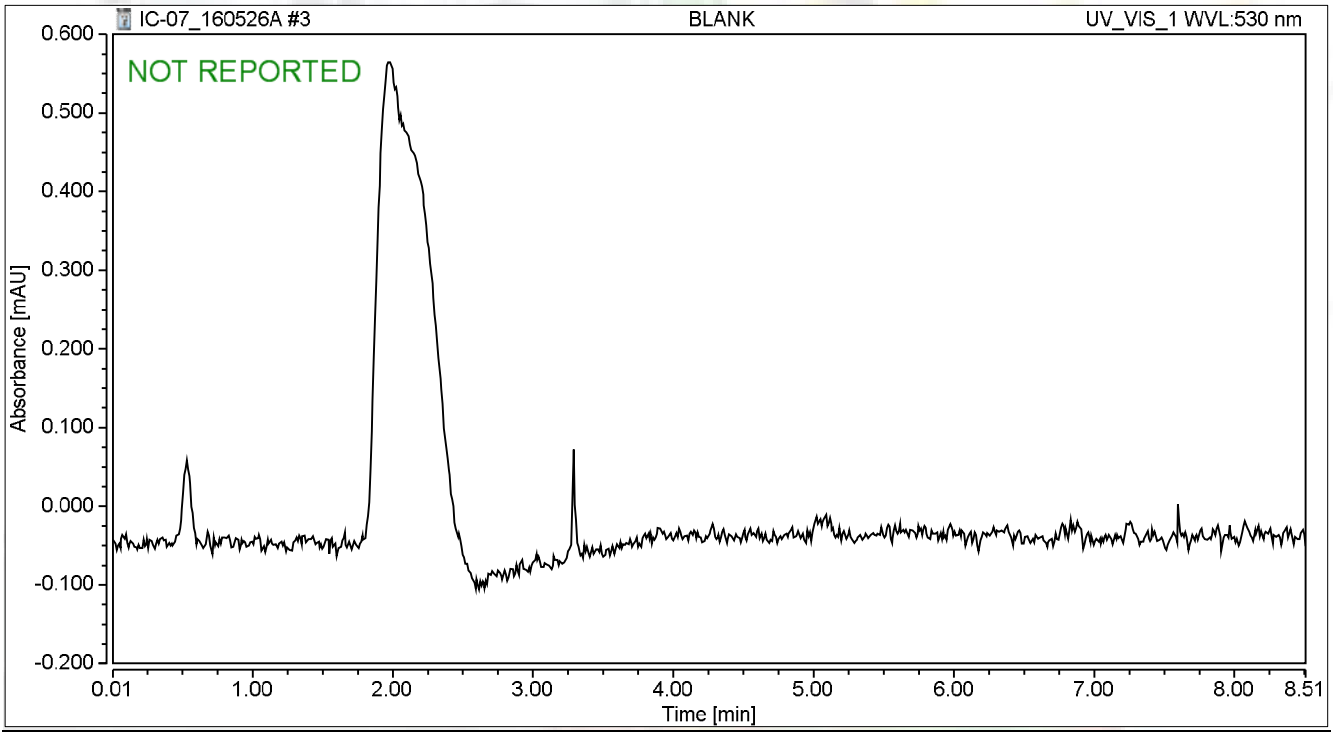
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

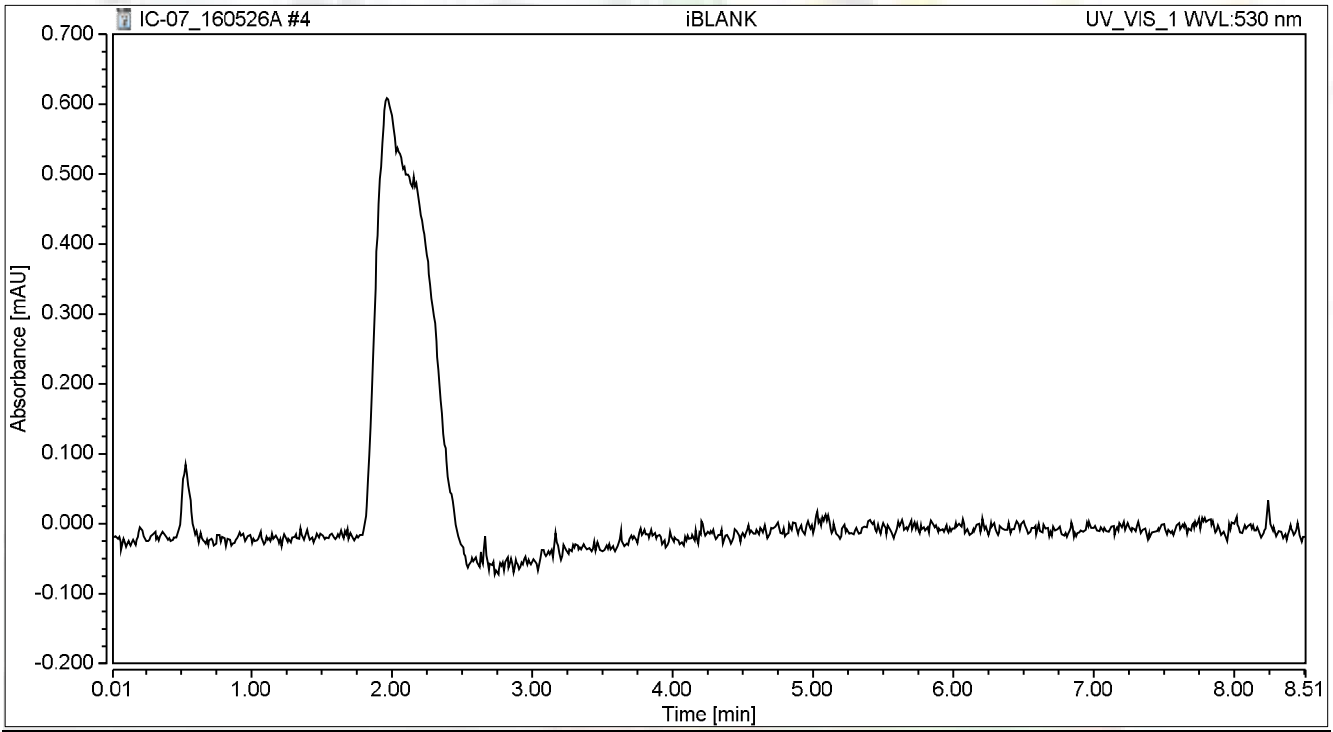
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

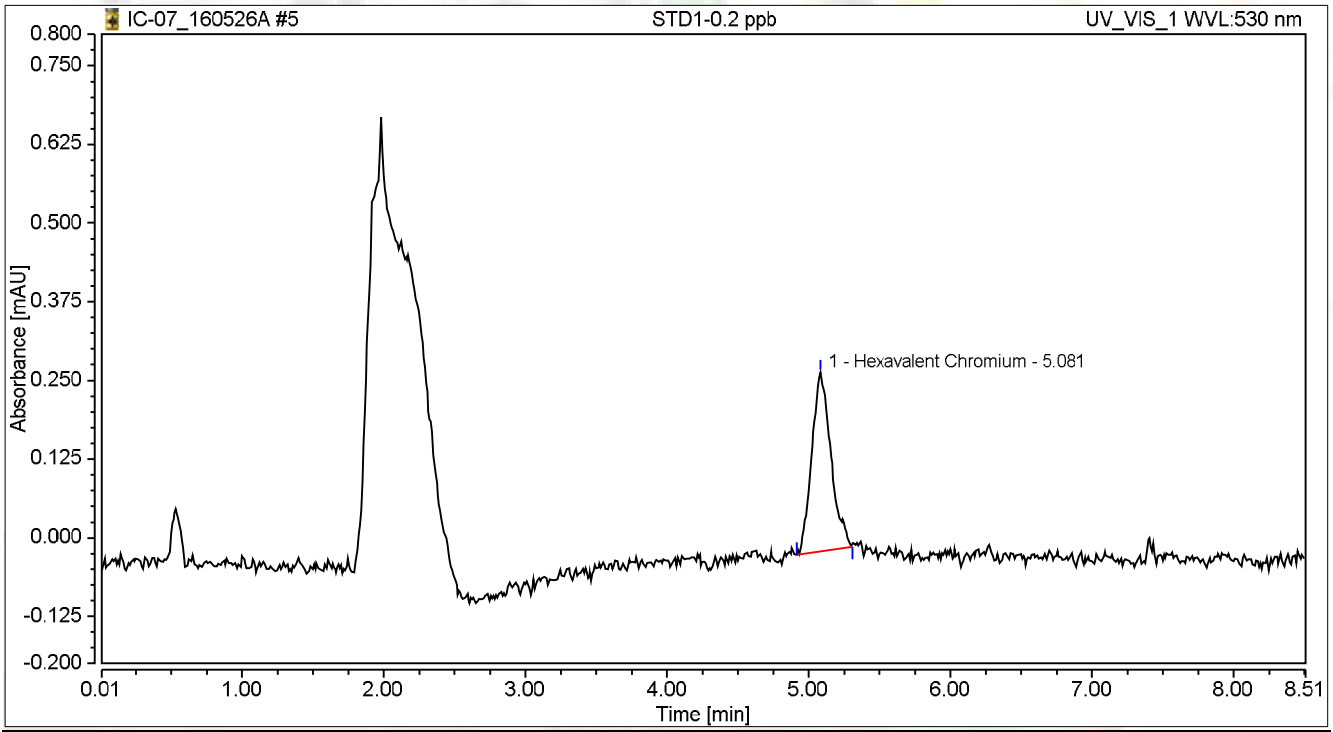
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

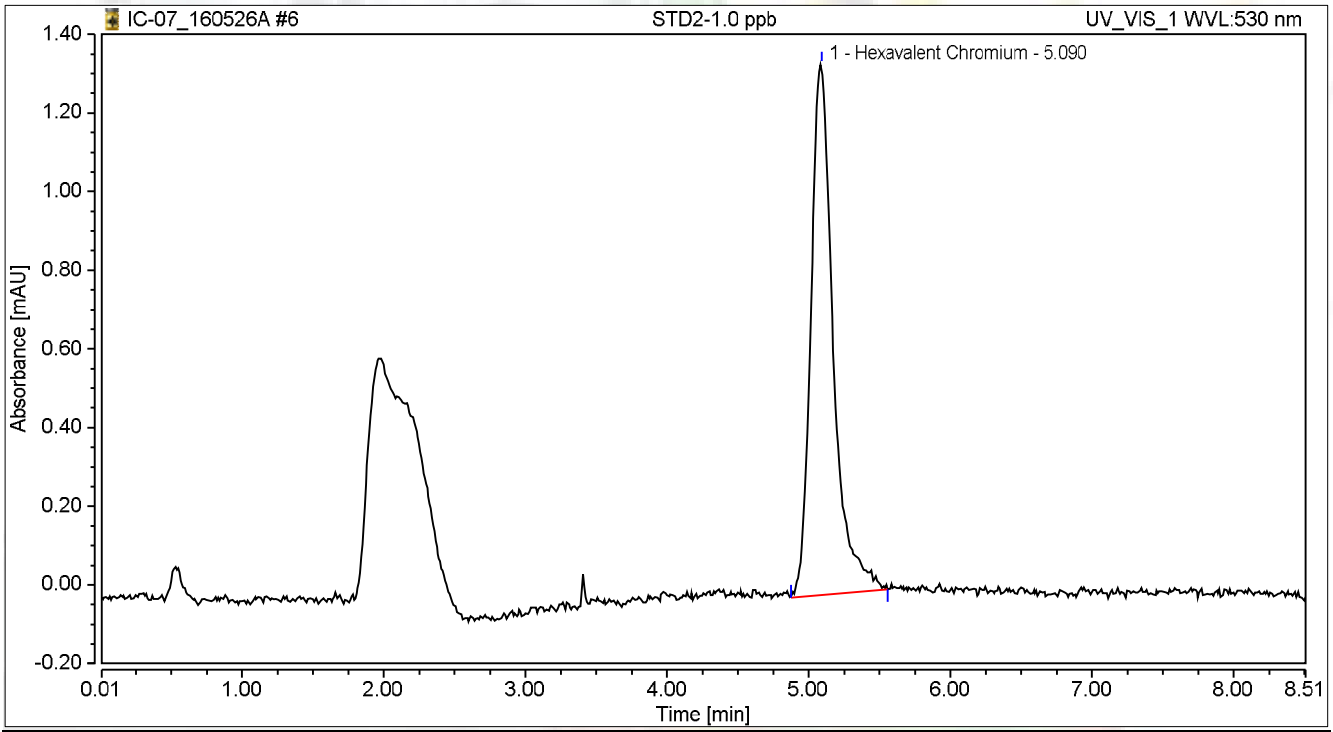
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.045	0.284	100.00	100.00	0.1812
Total:			**0.045**	**0.284**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

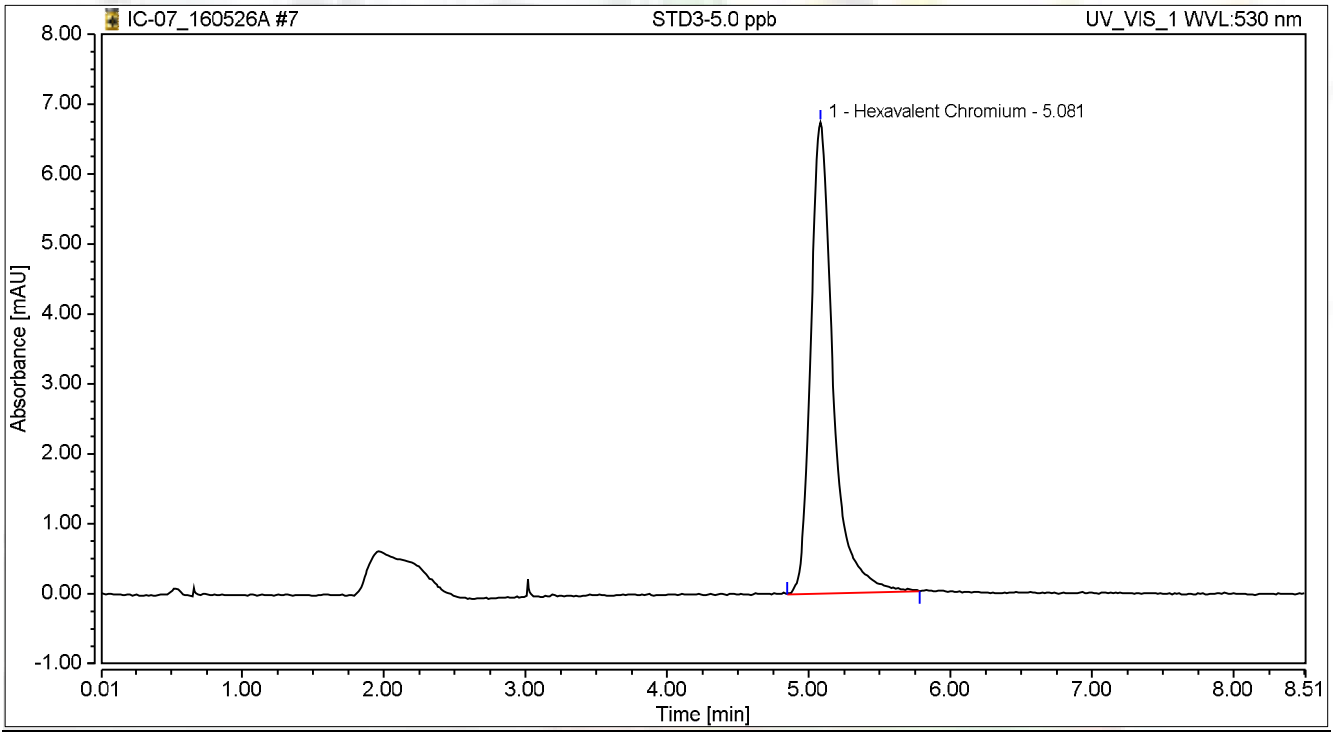
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.247	1.350	100.00	100.00	1.0037
Total:			**0.247**	**1.350**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

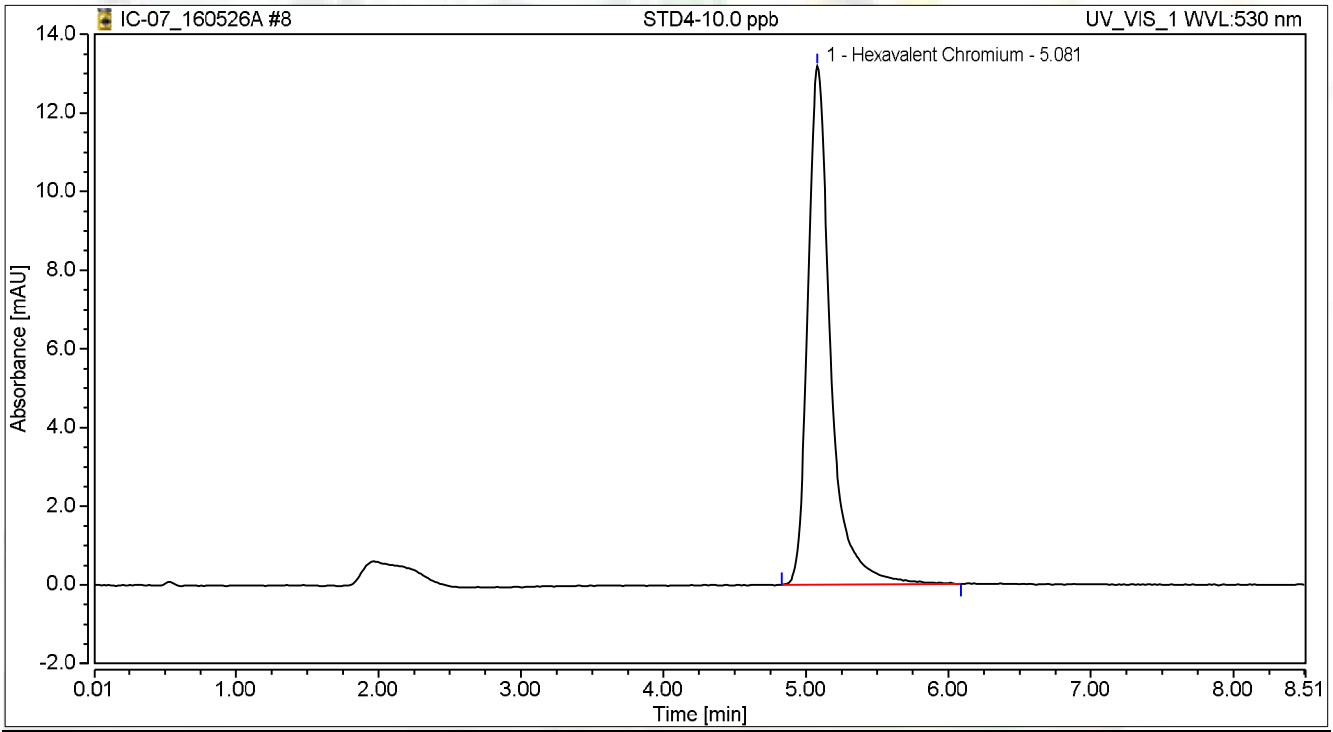
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	1.231	6.731	100.00	100.00	5.0048
Total:			**1.231**	**6.731**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

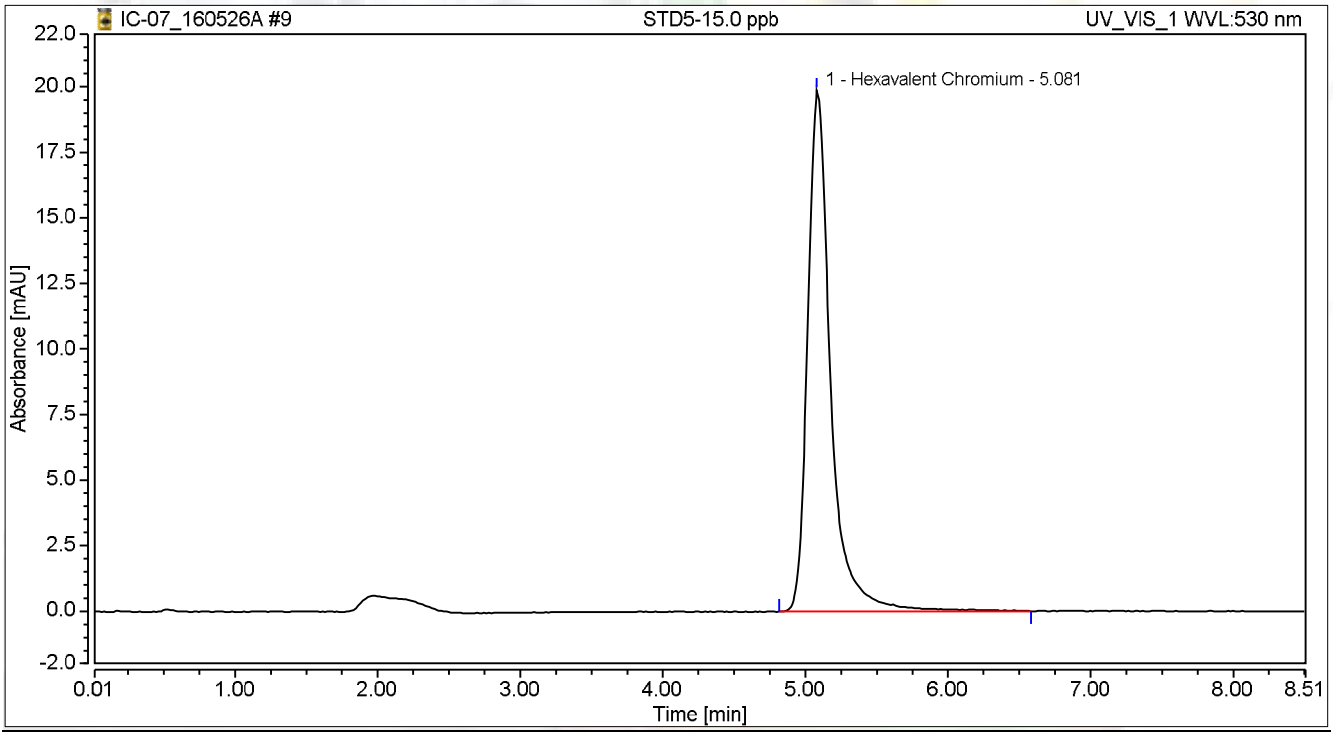
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	2.454	13.186	100.00	100.00	9.9718
Total:			**2.454**	**13.186**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

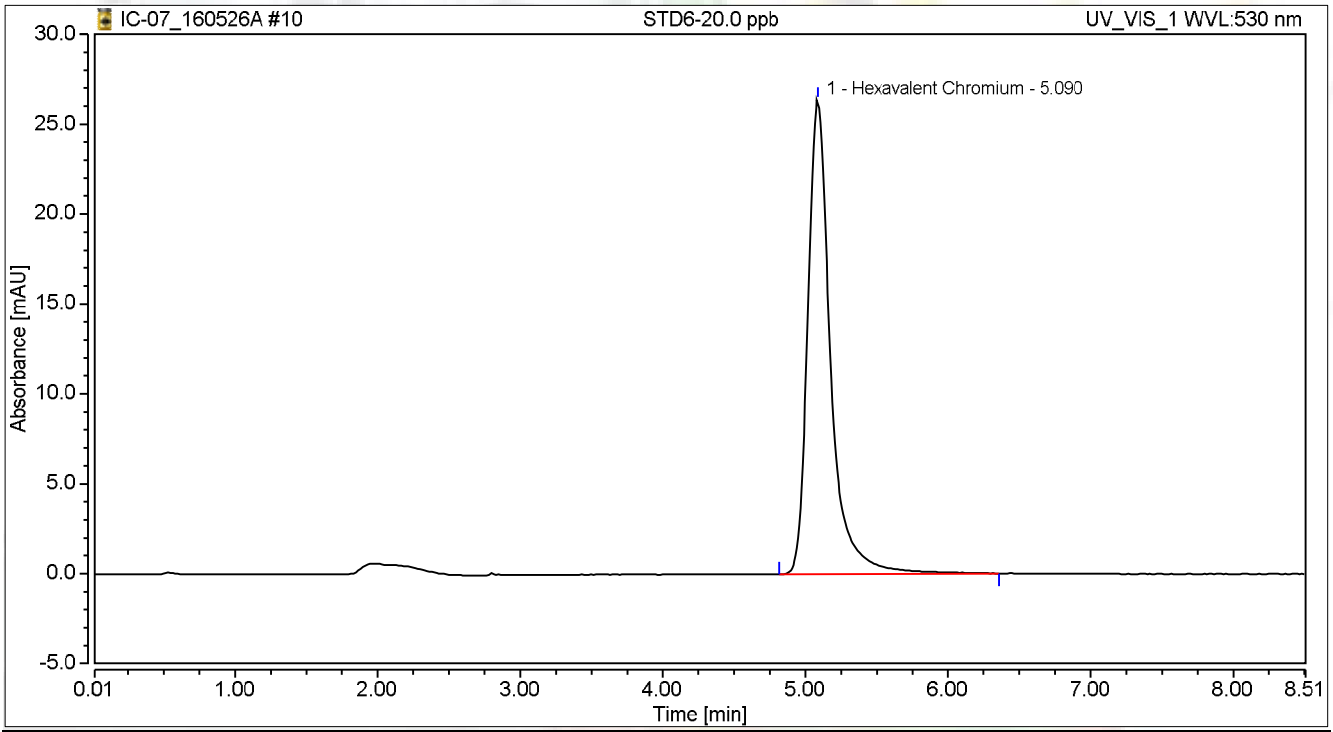
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	3.714	19.860	100.00	100.00	15.0946
Total:			**3.714**	**19.860**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



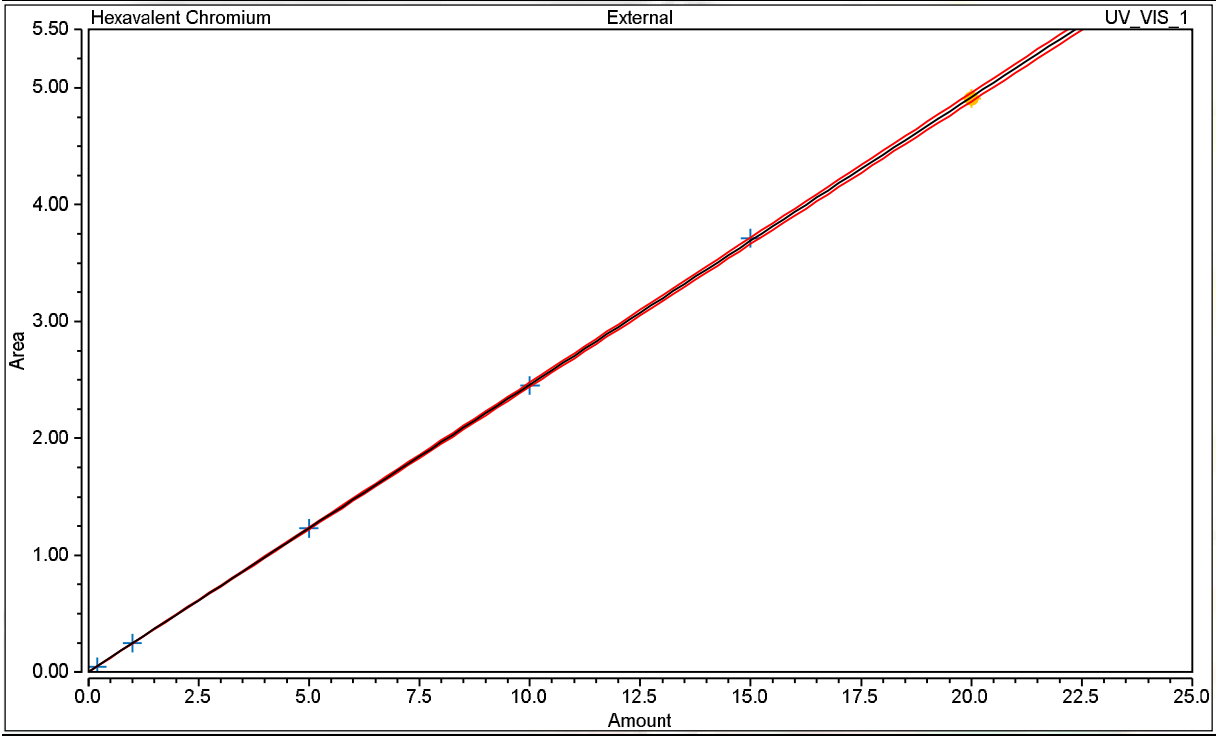
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	4.907	26.368	100.00	100.00	19.9419
Total:			**4.907**	**26.368**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2461
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

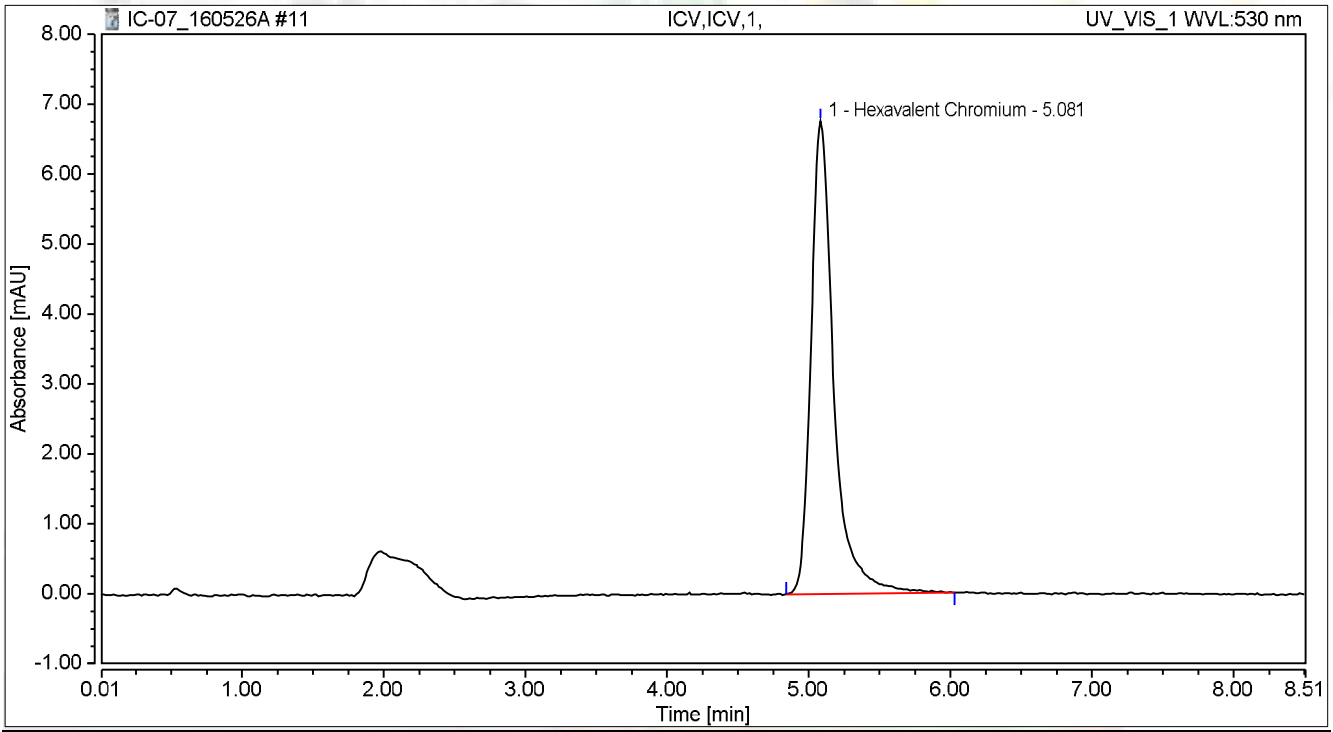
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
5	STD1-0.2 ppb	01	0.2000	0.0446	0.045	0.284
6	STD2-1.0 ppb	02	1.0000	0.2470	0.247	1.350
7	STD3-5.0 ppb	03	5.0000	1.2314	1.231	6.731
8	STD4-10.0 ppb	04	10.0000	2.4536	2.454	13.186
9	STD5-15.0 ppb	05	15.0000	3.7141	3.714	19.860
10	STD6-20.0 ppb	06	20.0000	4.9068	4.907	26.368

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

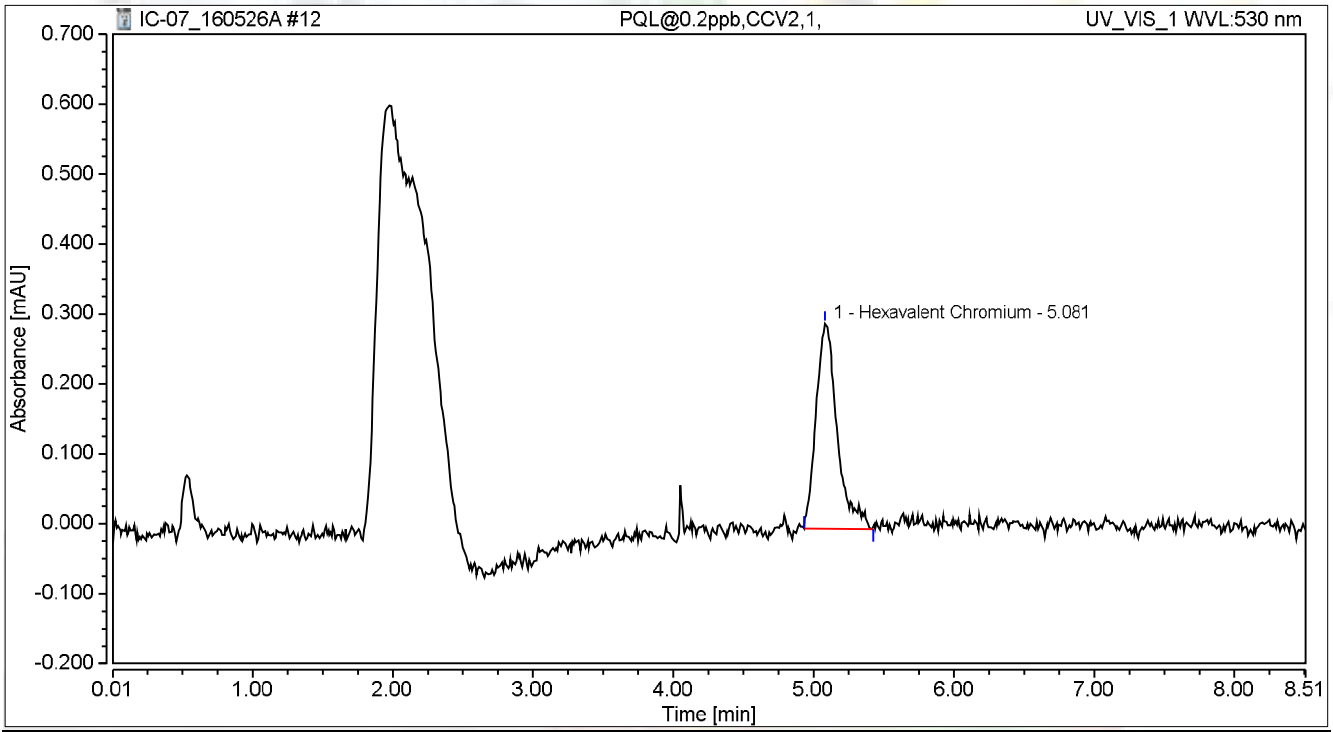
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	1.259	6.756	100.00	100.00	5.1157
Total:			**1.259**	**6.756**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 11:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

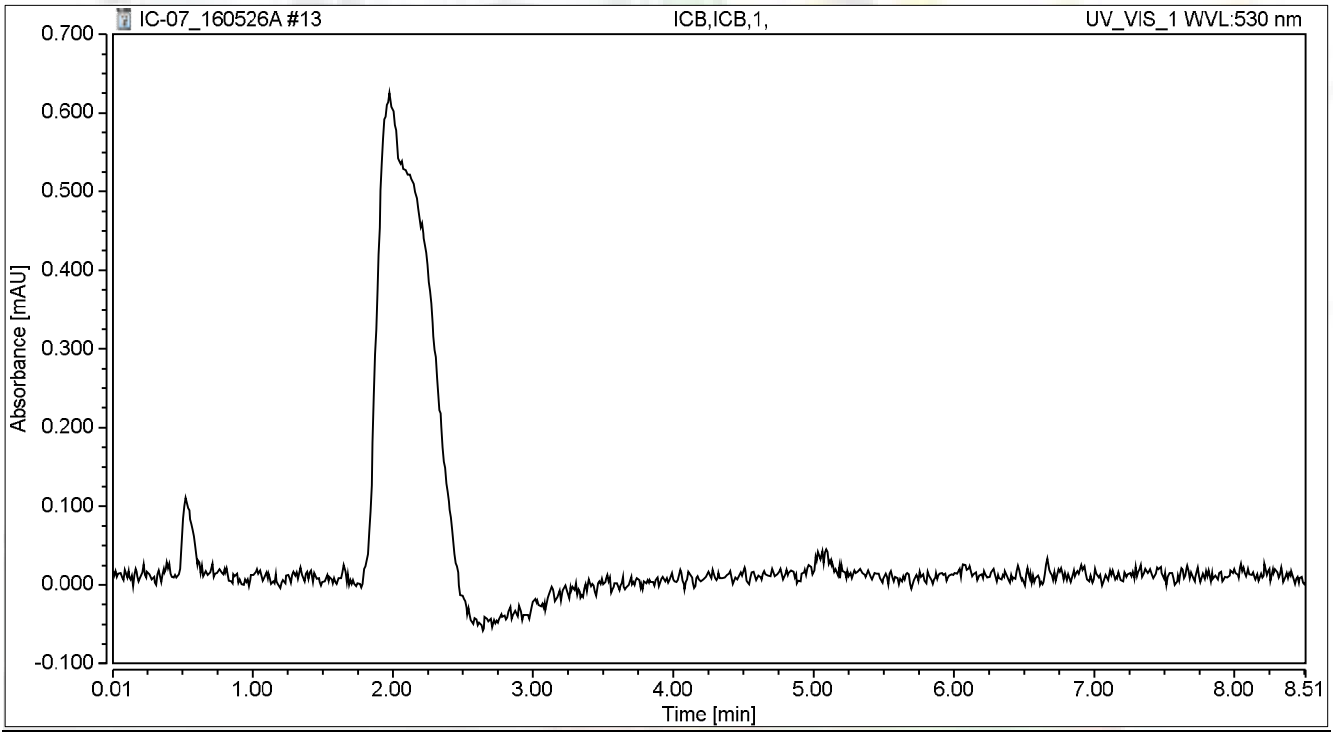
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.081	0.051	0.294	100.00	100.00	0.2084
Total:			**0.051**	**0.294**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/May/16 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 160608A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:41 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 9:52 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/26/16 10:01 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/26/16 10:11 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:20 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:30 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:39 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:49 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 10:58 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/26/16 11:08 AM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/08/16 11:56 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	06/08/16 12:07 PM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	06/08/16 12:17 PM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/08/16 12:26 PM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	06/08/16 12:36 PM	Reported
16	MB-R108868	MBLK	1	Hexavalent Chromium	06/08/16 12:45 PM	Reported
17	LCS-R108868	LCS	1	Hexavalent Chromium	06/08/16 12:55 PM	Reported
18	N020007-001B	SAMP	100	Hexavalent Chromium	06/08/16 1:04 PM	Reported
19	N020007-001BDUP	DUP	100	Hexavalent Chromium	06/08/16 1:14 PM	Reported
20	N020007-001BMS	MS	100	Hexavalent Chromium	06/08/16 1:23 PM	Reported
21	N020007-001BMSD	MSD	100	Hexavalent Chromium	06/08/16 1:33 PM	Reported
22	N020007-002B	SAMP	1	Hexavalent Chromium	06/08/16 1:42 PM	Reported
23	N020007-002BMS	MS	1	Hexavalent Chromium	06/08/16 1:52 PM	Reported
24	N020008-001A	SAMP	1	Hexavalent Chromium	06/08/16 2:01 PM	Reported
25	N020008-001AMS	MS	1	Hexavalent Chromium	06/08/16 2:10 PM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	06/08/16 2:20 PM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	06/08/16 2:29 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_160608A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**08/Jun/16 16:53:42**
No. of Injections:	**30**	*Updated By:*	**ics 5000**

Injection Details

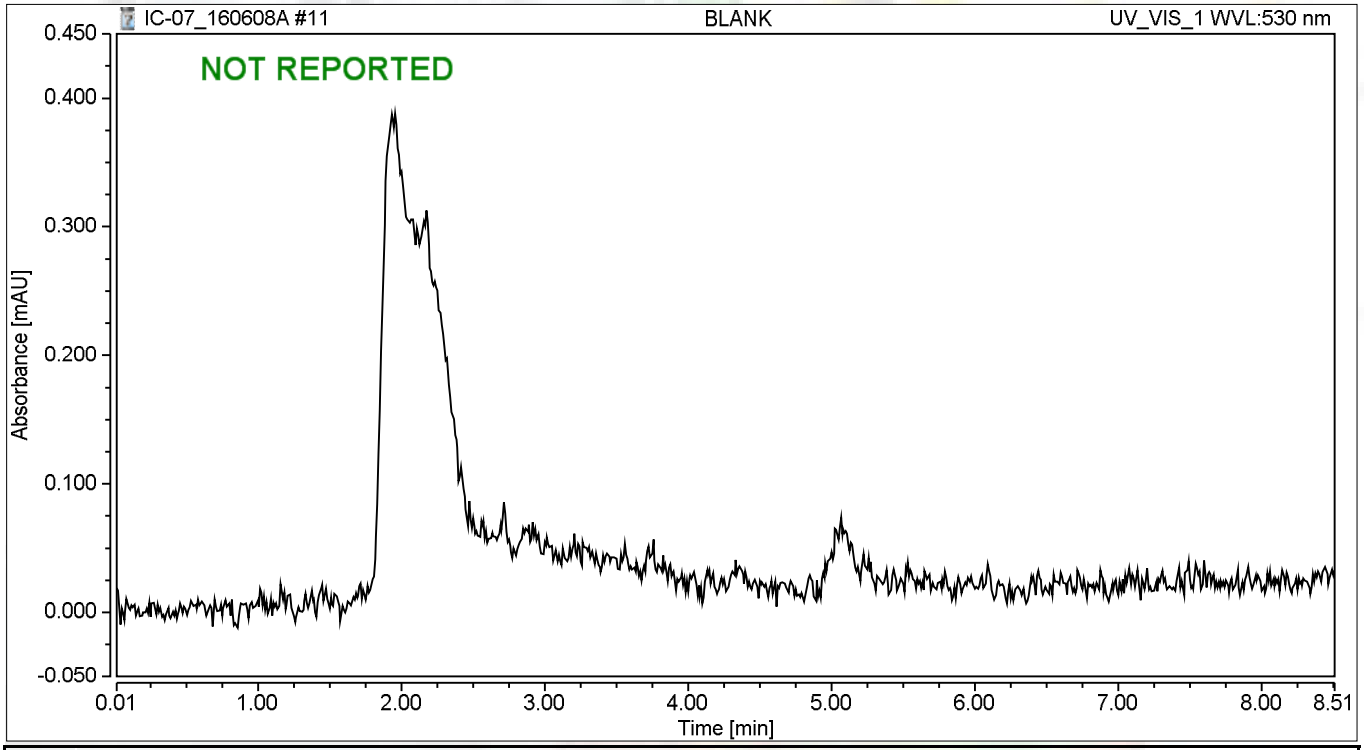
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/26/2016 09:41	Finished	
2	BLANK	2	1000	Unknown		05/26/2016 09:52	Finished	
3	BLANK	3	1000	Unknown		05/26/2016 10:01	Finished	
4	iBLANK	4	1000	Unknown		05/26/2016 10:11	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Calibration Standard	01	05/26/2016 10:20	Finished	0.2 ppb, IWST160401A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	05/26/2016 10:30	Finished	1.0 ppb, IWST160401A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	05/26/2016 10:39	Finished	5.0 ppb, IWST160401A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	05/26/2016 10:49	Finished	10 ppb, IWST160401A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	05/26/2016 10:58	Finished	15 ppb, IWST160401A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	05/26/2016 11:08	Finished	20 ppb, IWST160401A
11	BLANK	1	1000	Unknown		06/08/2016 11:56	Finished	
12	BLANK	2	1000	Unknown		06/08/2016 12:07	Finished	
13	CCV-1,CCV,1,	3	1000	Unknown		06/08/2016 12:17	Finished	CCV @5ppb, IWST-160401A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/08/2016 12:26	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		06/08/2016 12:36	Finished	CCB R160608C
16	MB-H2O,MBLK,1	6	1000	Unknown		06/08/2016 12:45	Finished	MB R160526A
17	LCS-H2O,LCS,1	7	1000	Unknown		06/08/2016 12:55	Finished	LCS, IWST-160401B
18	N020007-001B,SAMP	8	1000	Unknown		06/08/2016 13:04	Finished	SAMP, 0.1>10 mL
19	N020007-001BDUP,D	9	1000	Unknown		06/08/2016 13:14	Finished	DUP, 0.1>10 mL
20	N020007-001BMS,MS	10	1000	Unknown		06/08/2016 13:23	Finished	MS(5ppb), IWST-160401B, 0.1
21	N020007-001BMSD,M	11	1000	Unknown		06/08/2016 13:33	Finished	MSD(5ppb), IWST-160401B, 0.
22	N020007-002B,SAMP	12	1000	Unknown		06/08/2016 13:42	Finished	SAMP, 10 mL
23	N020007-002BMS,MS	13	1000	Unknown		06/08/2016 13:52	Finished	MS(1ppb), IWST-160401B, 10r
24	N020008-001A,SAMP	14	1000	Unknown		06/08/2016 14:01	Finished	SAMP, 10 mL
25	N020008-001AMS,MS	15	1000	Unknown		06/08/2016 14:10	Finished	MS(1ppb), IWST-160401B, 10r
26	CCV-2,CCV1,1,	16	1000	Unknown		06/08/2016 14:20	Finished	CCV @10ppb, IWST-160401A
27	CCB-2,CCB,1,	17	1000	Unknown		06/08/2016 14:29	Finished	CCB
28	SHUTDOWN	18	1000	Unknown		06/08/2016 14:49	Finished	
29	Eluent: R160603B	19	1000	Unknown		n.a.	Finished	Eluent
30	PCR: R160608B	20	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 11:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

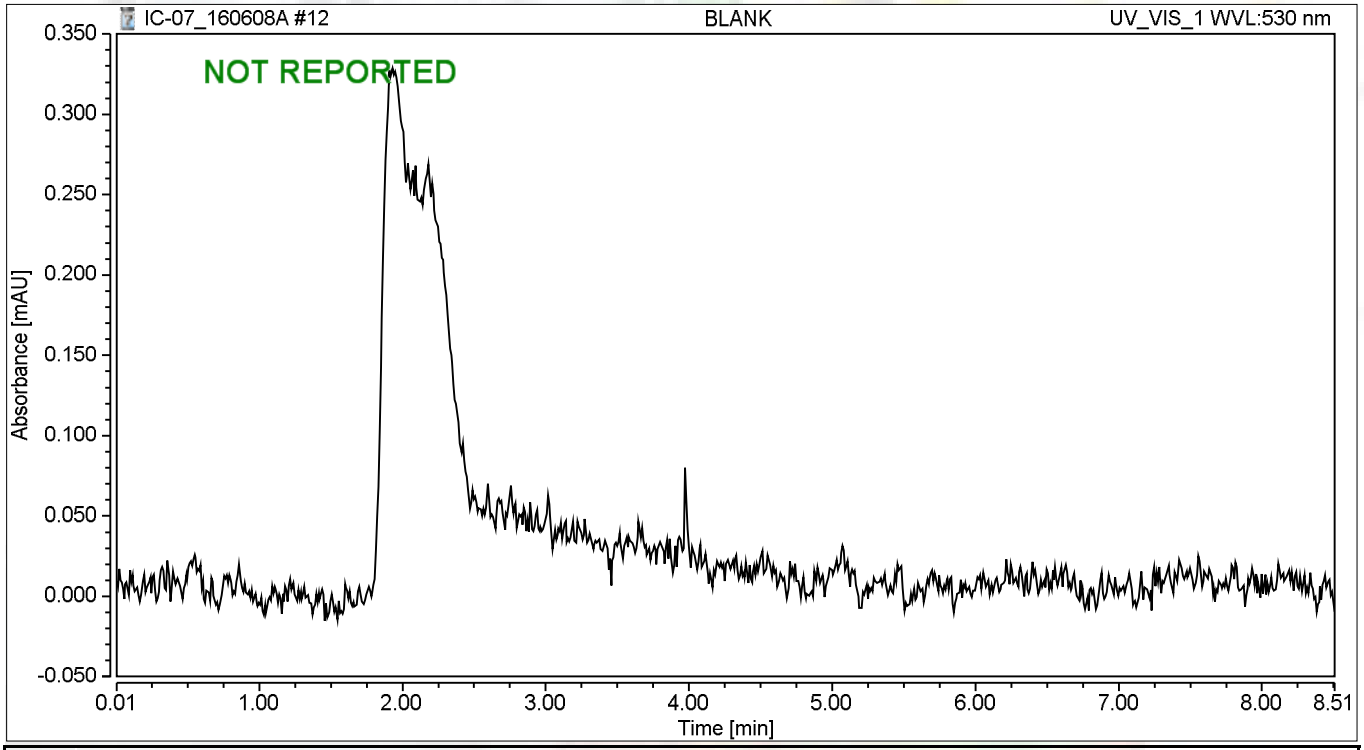
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

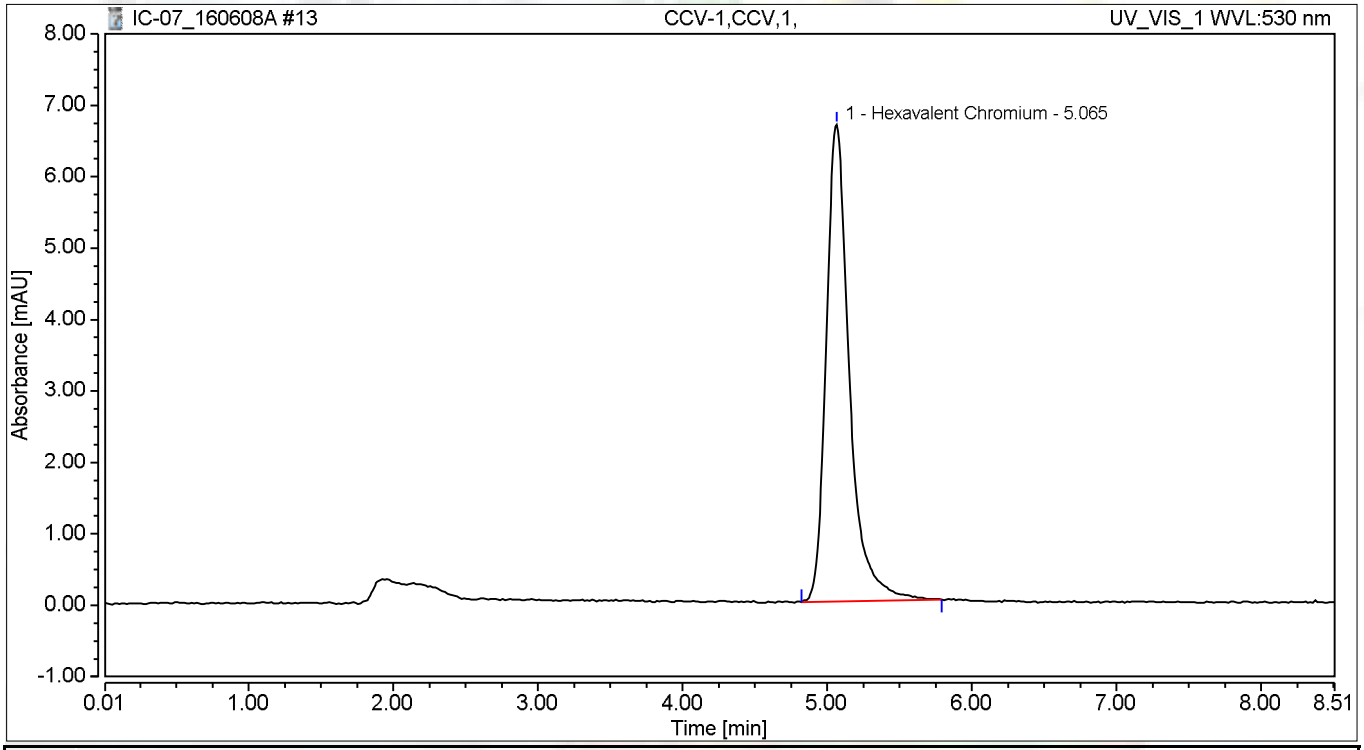
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

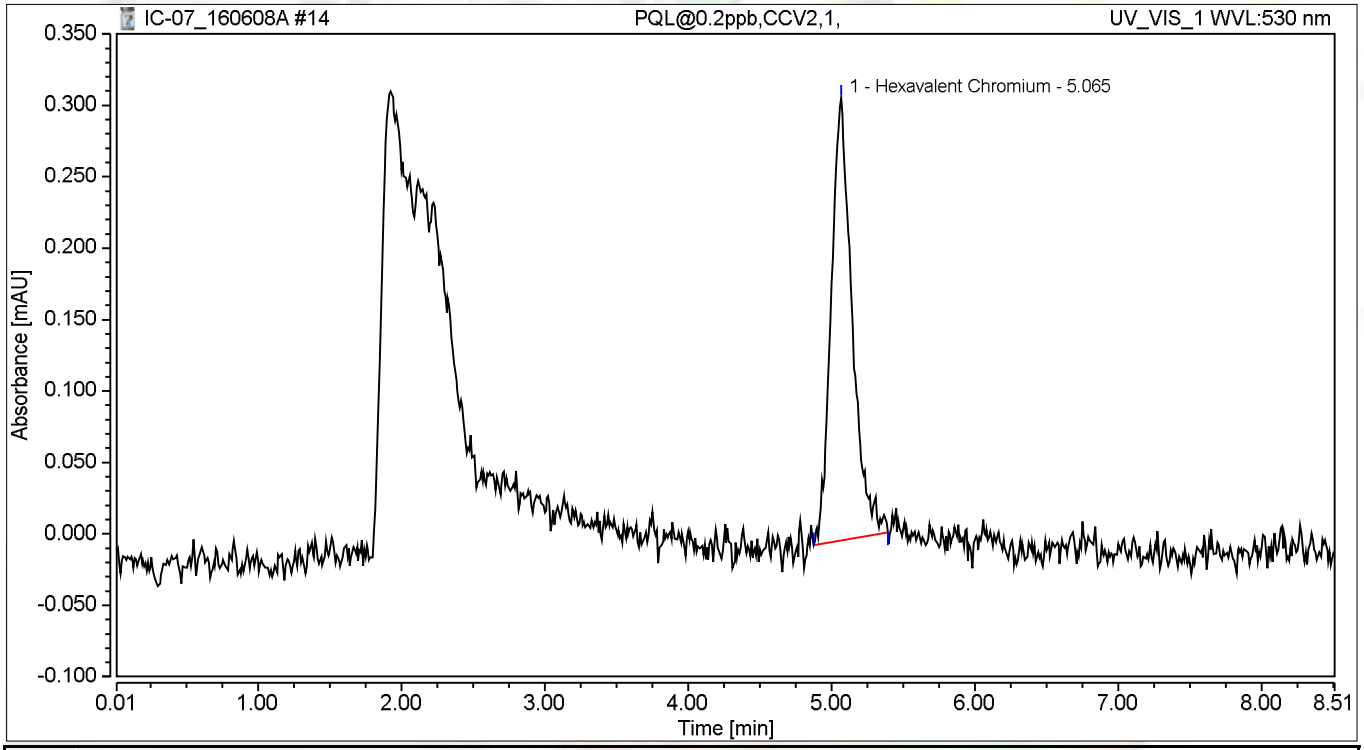
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.244	6.672	100.00	100.00	5.0539
Total:			**1.244**	**6.672**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

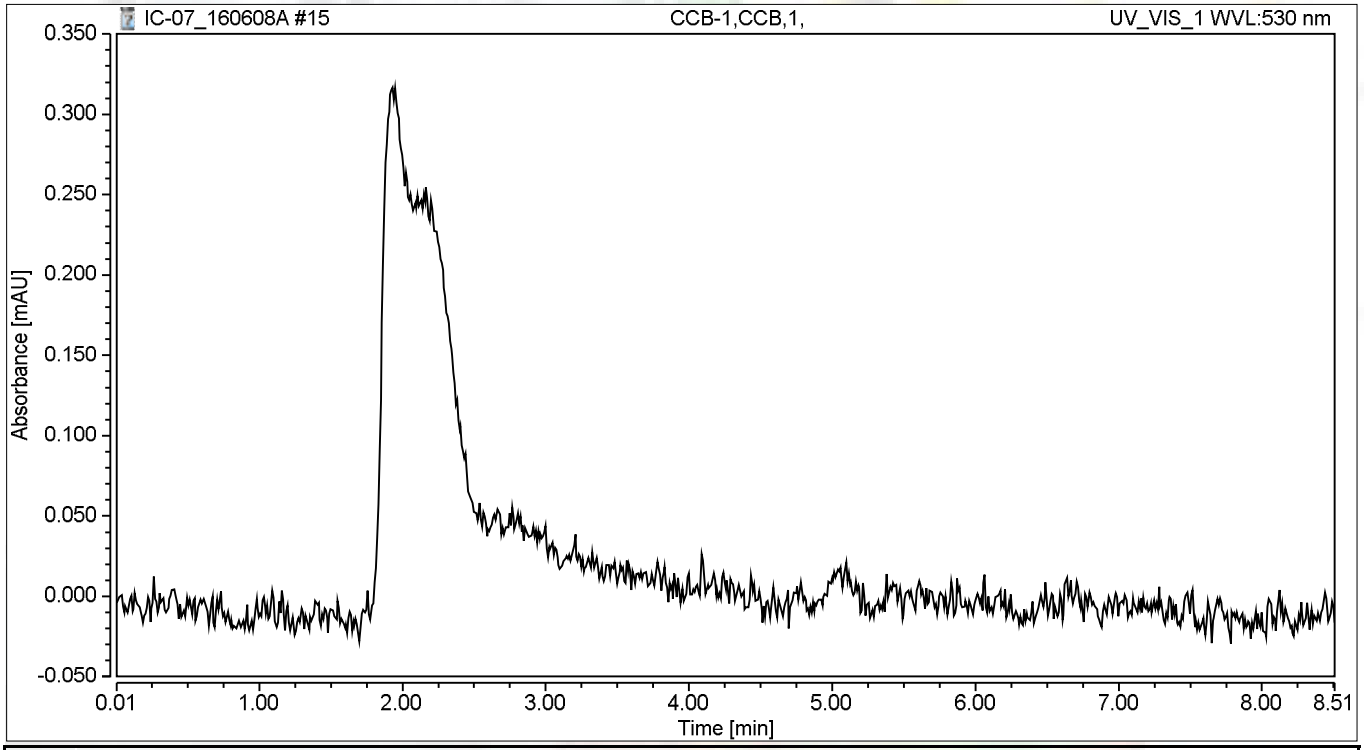
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.053	0.310	100.00	100.00	0.2137
Total:			**0.053**	**0.310**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

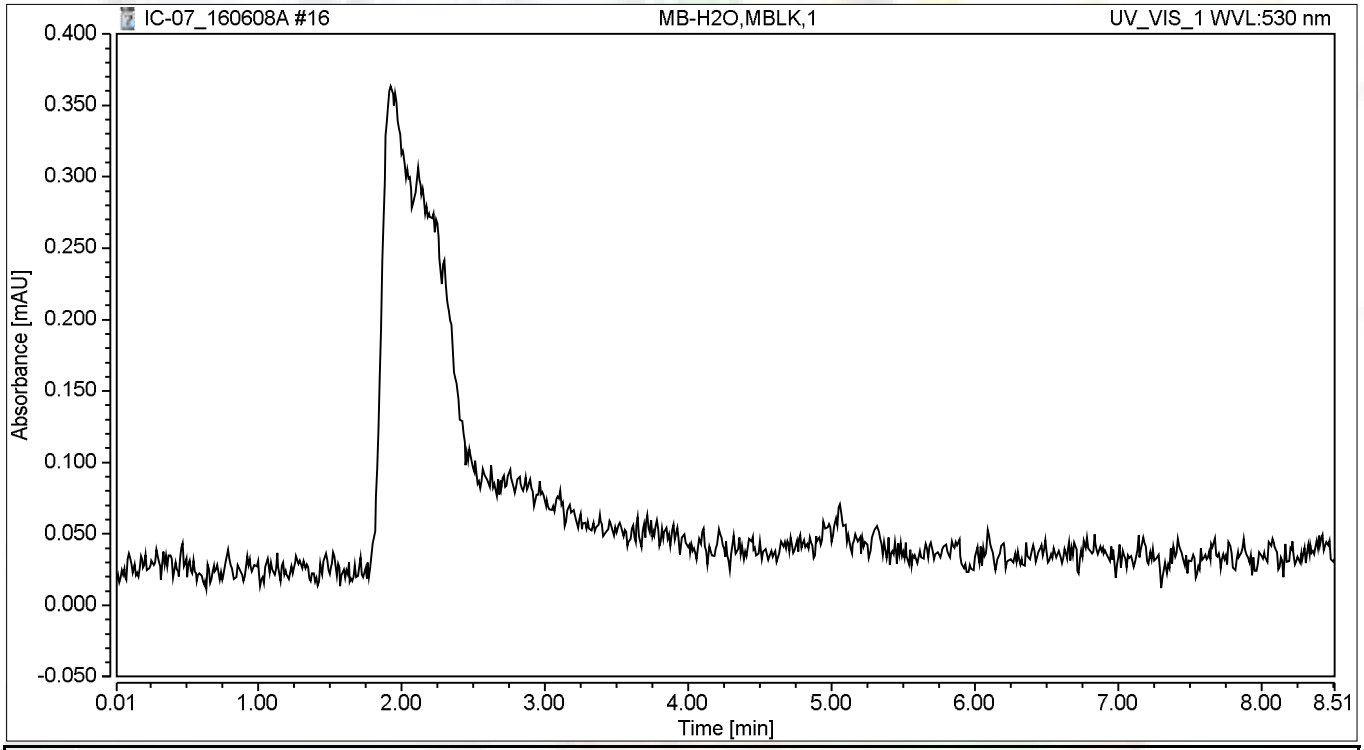
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

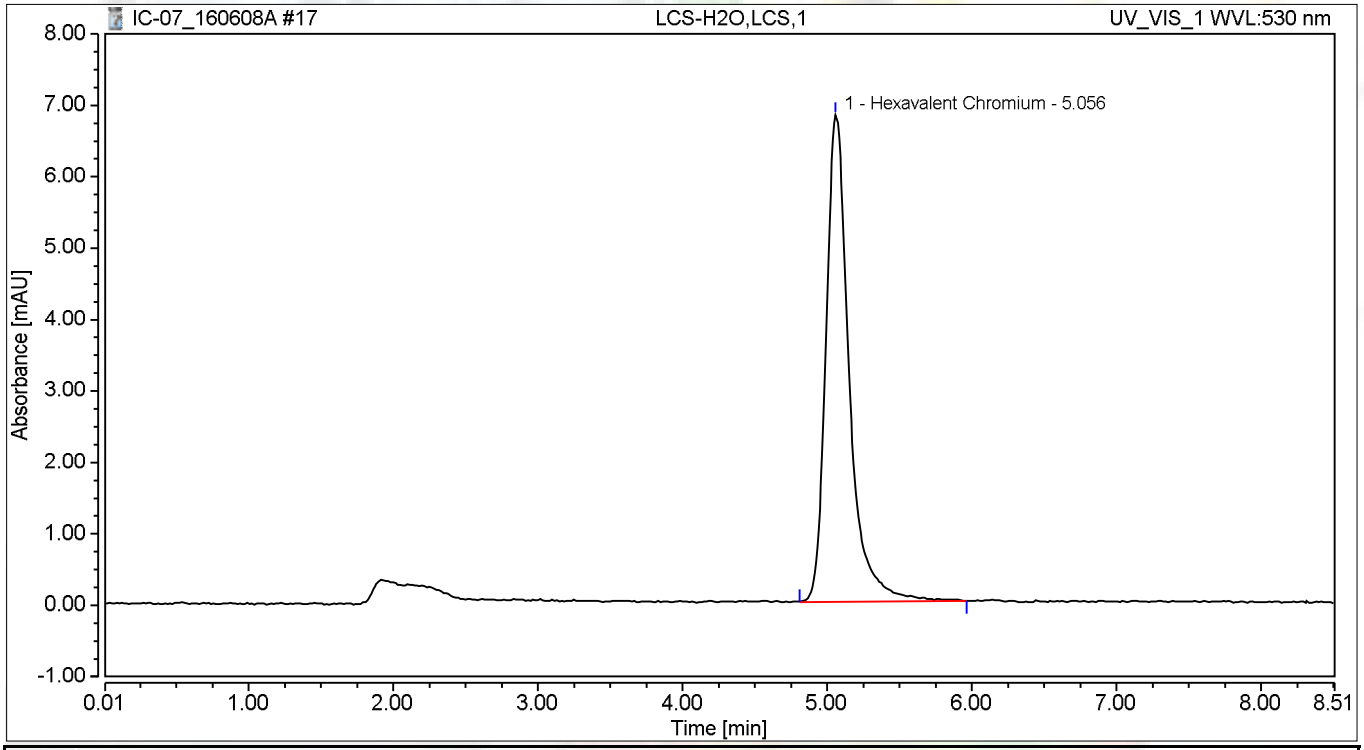
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

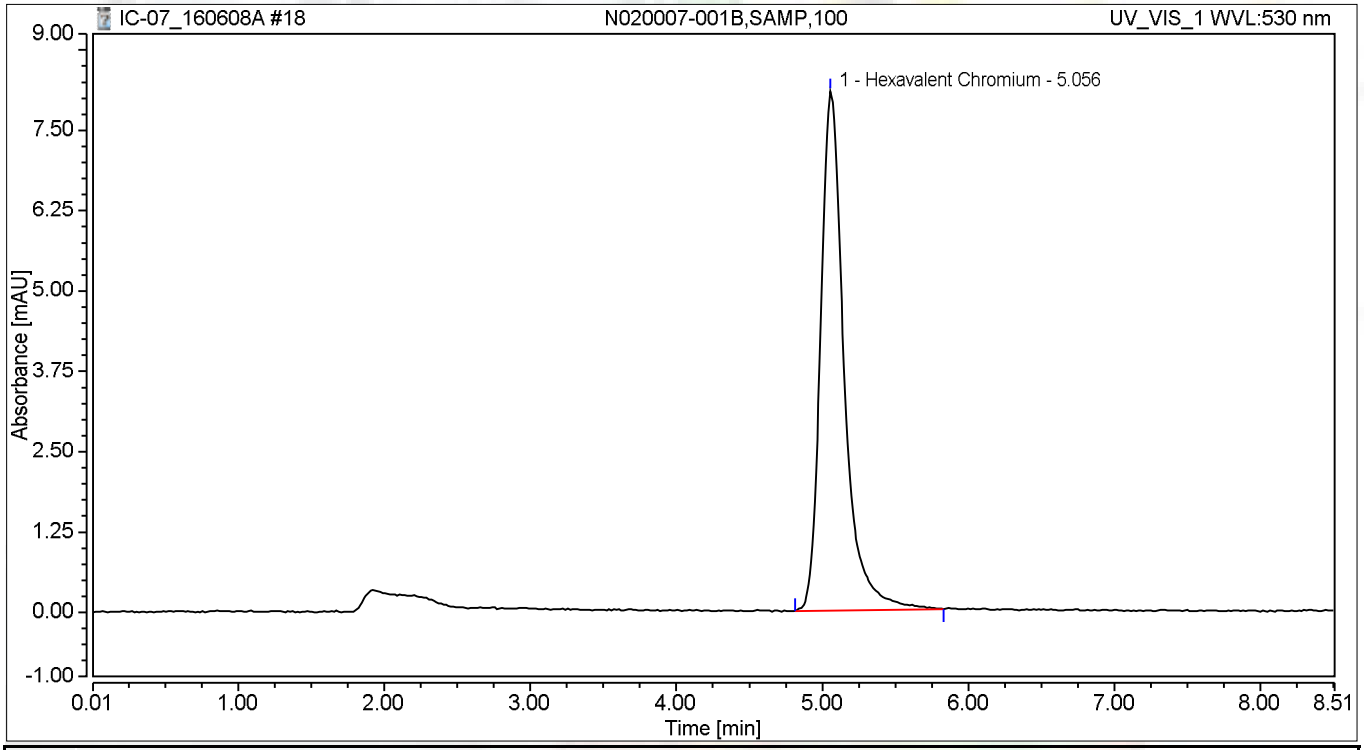
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.269	6.816	100.00	100.00	5.1588
Total:			**1.269**	**6.816**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-001B,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

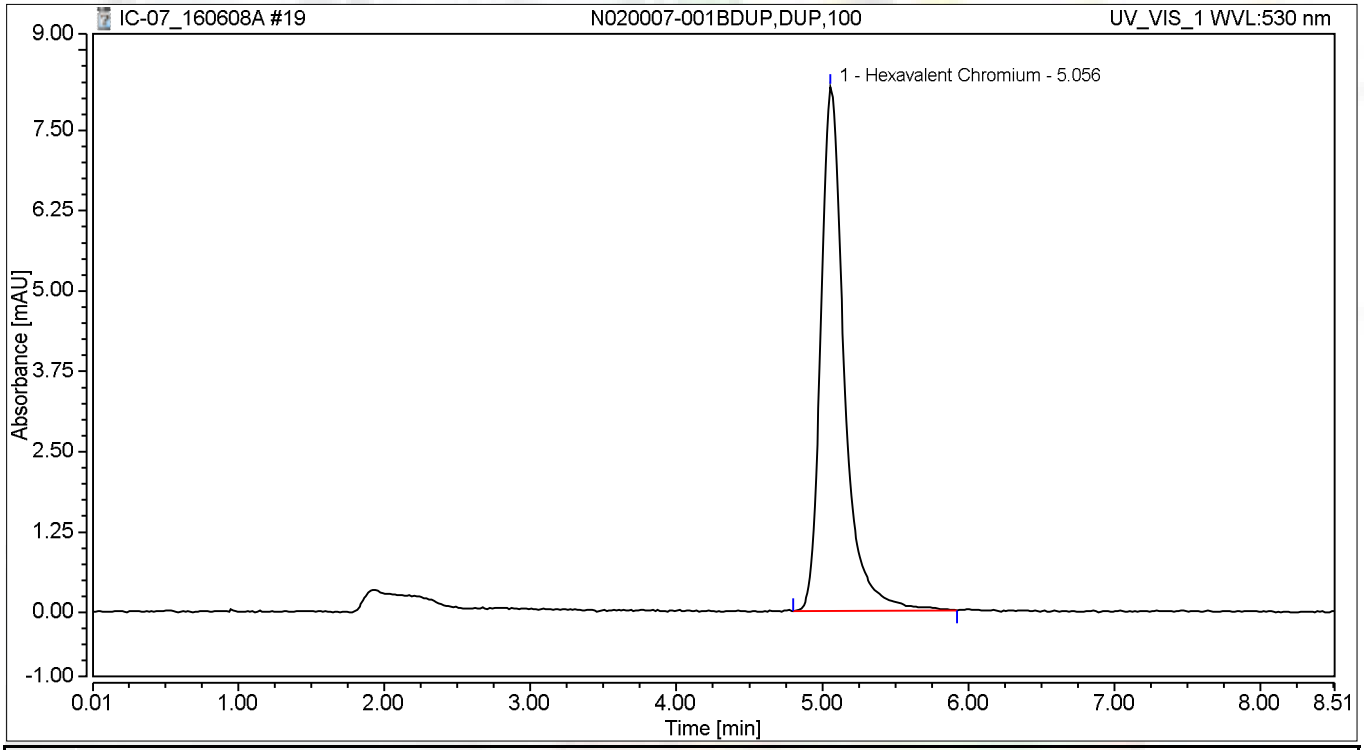
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.514	8.075	100.00	100.00	6.1527
Total:			**1.514**	**8.075**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-001BDUP,DUP,100**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

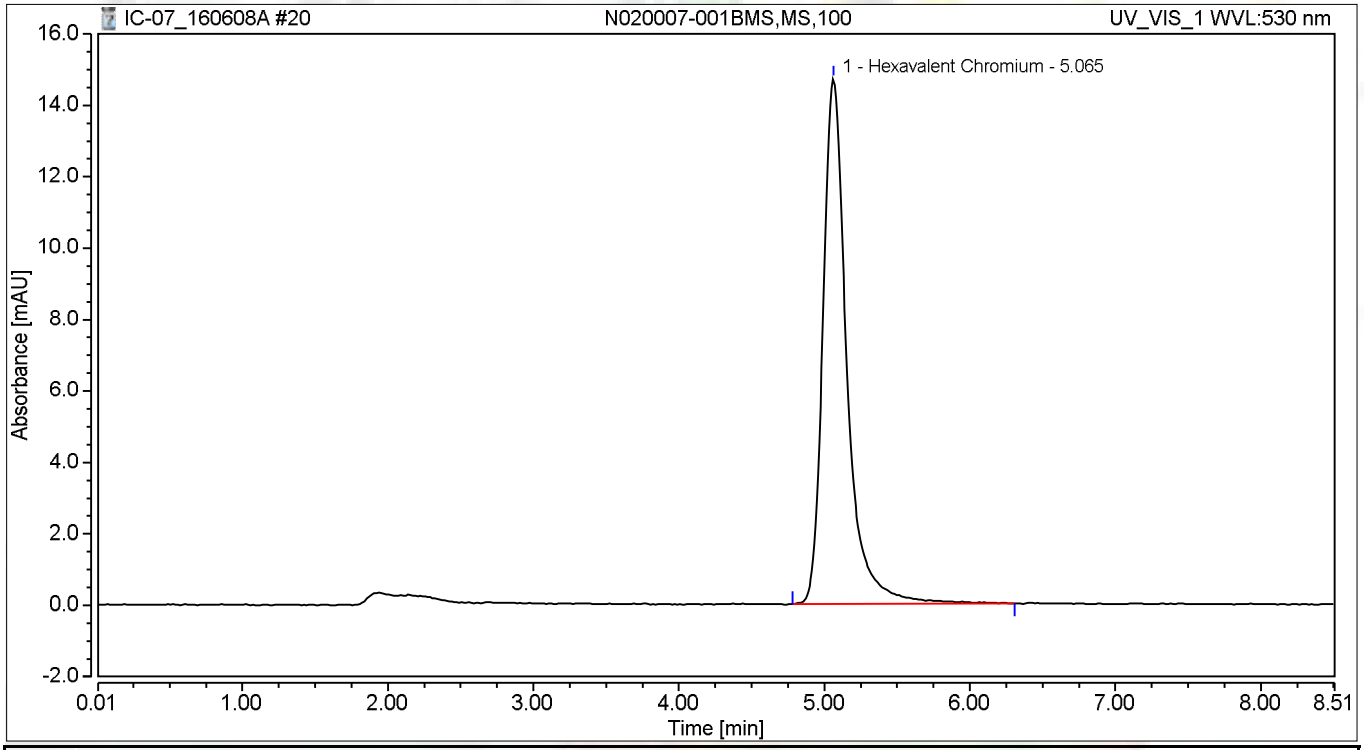
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	1.521	8.158	100.00	100.00	6.1796
Total:			**1.521**	**8.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-001BMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

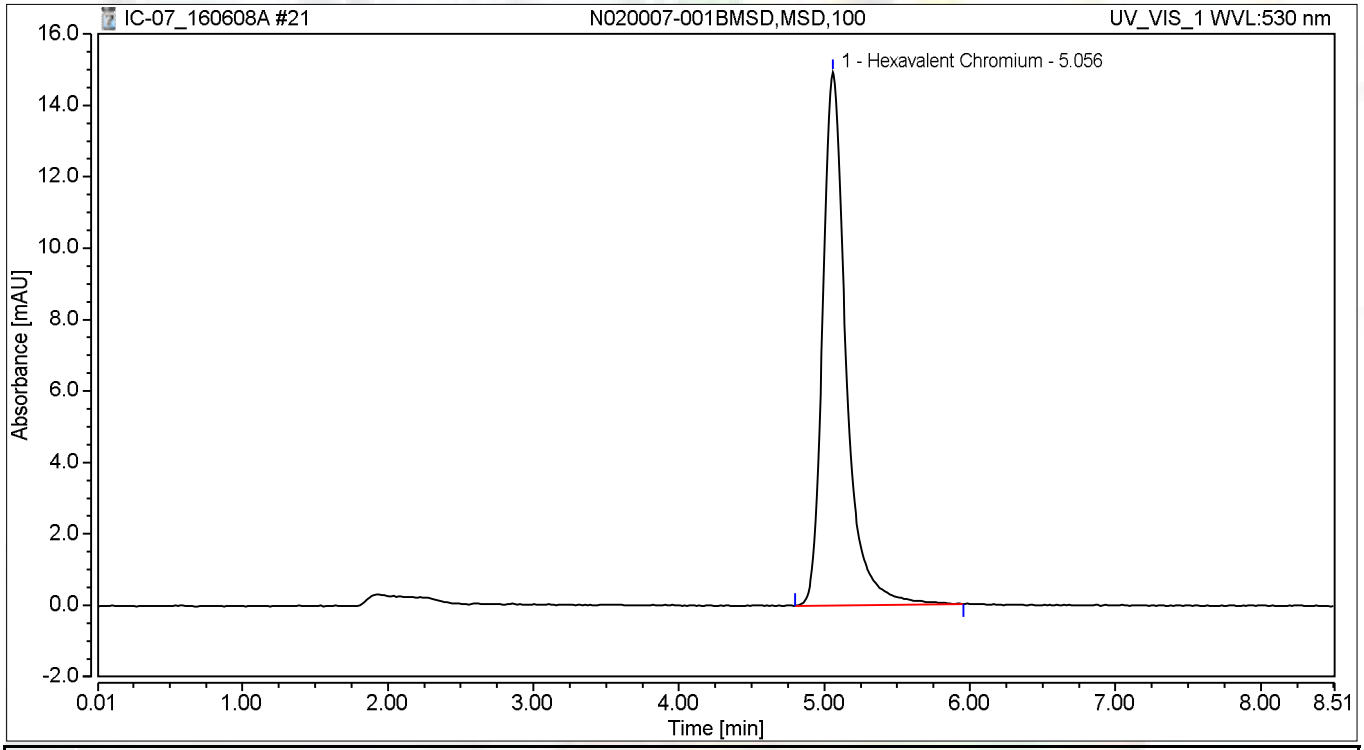
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.806	14.717	100.00	100.00	11.4021
Total:			**2.806**	**14.717**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-001BMSD,MSD,100**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

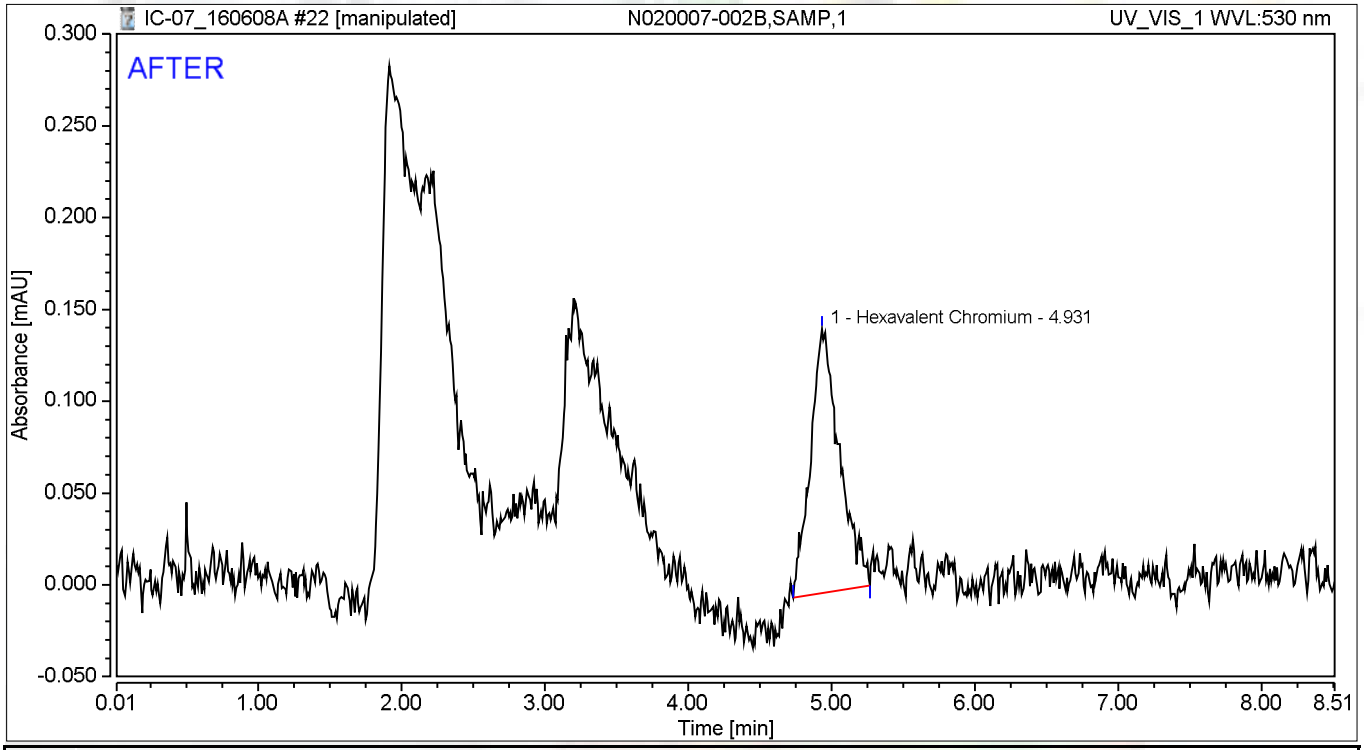
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.791	14.946	100.00	100.00	11.3436
Total:			**2.791**	**14.946**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020007-002B,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.931	0.034	0.144	100.00	100.00	0.1379
Total:			**0.034**	**0.144**	**100.00**	**100.00**	

6/9/2016

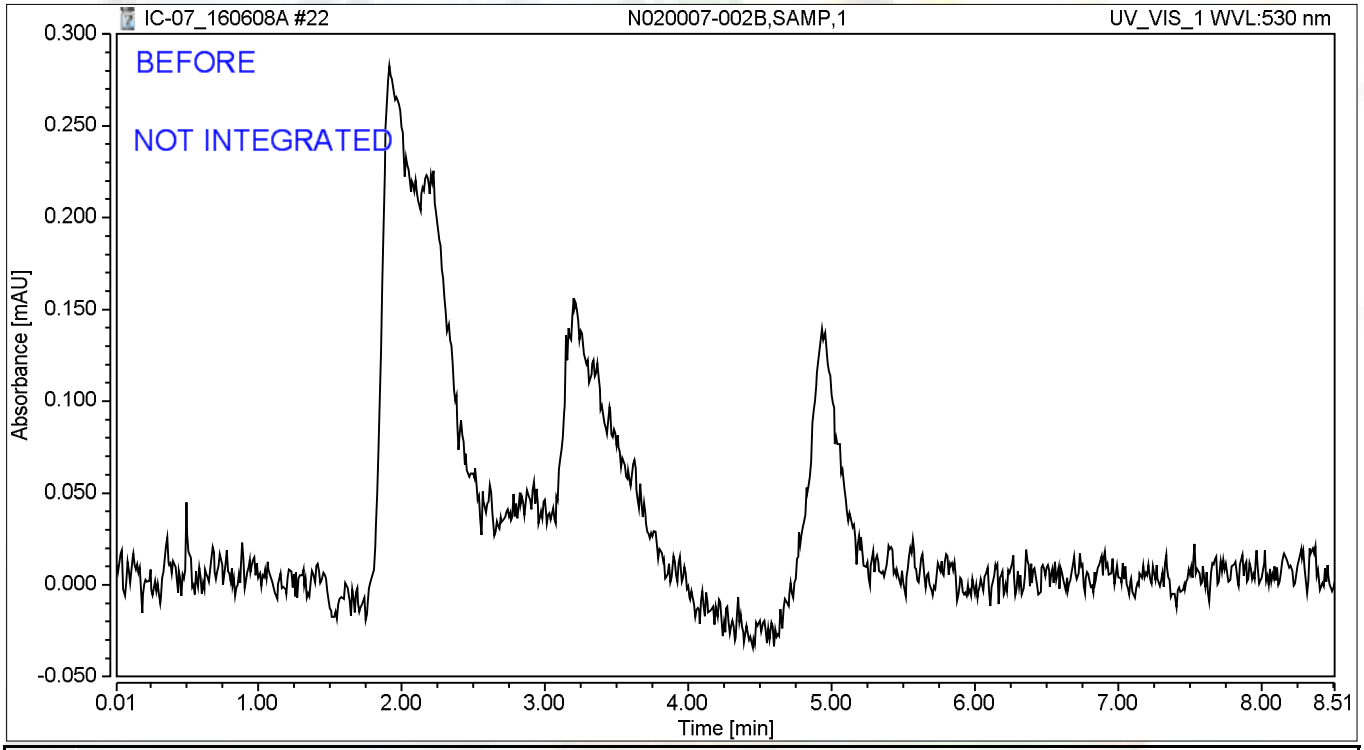
6/22/2016

Chromatogram and Results

Injection Details

Injection Name:	**N020007-002B,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

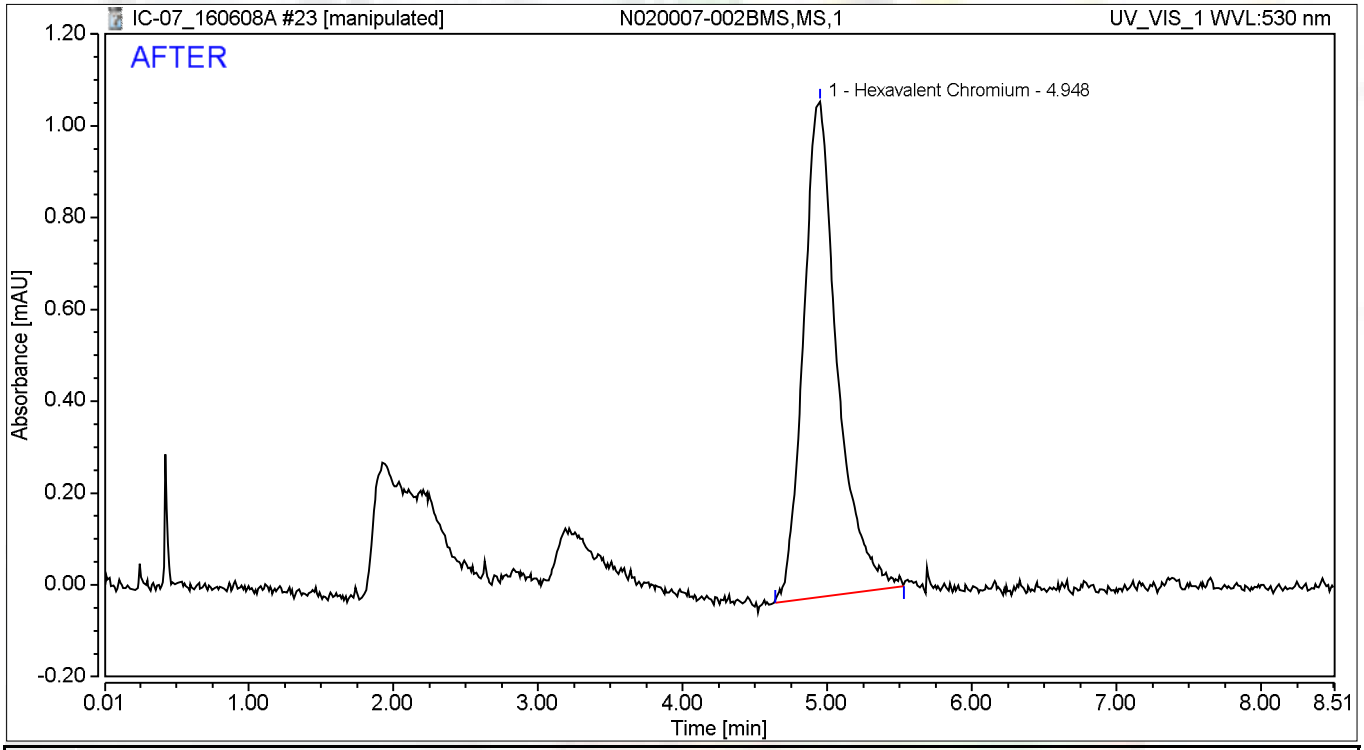
6/9/2016

Chromatogram and Results

Injection Details

Injection Name:	**N020007-002BMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.948	0.292	1.079	100.00	100.00	1.1883
Total:			**0.292**	**1.079**	**100.00**	**100.00**	

6/9/2016

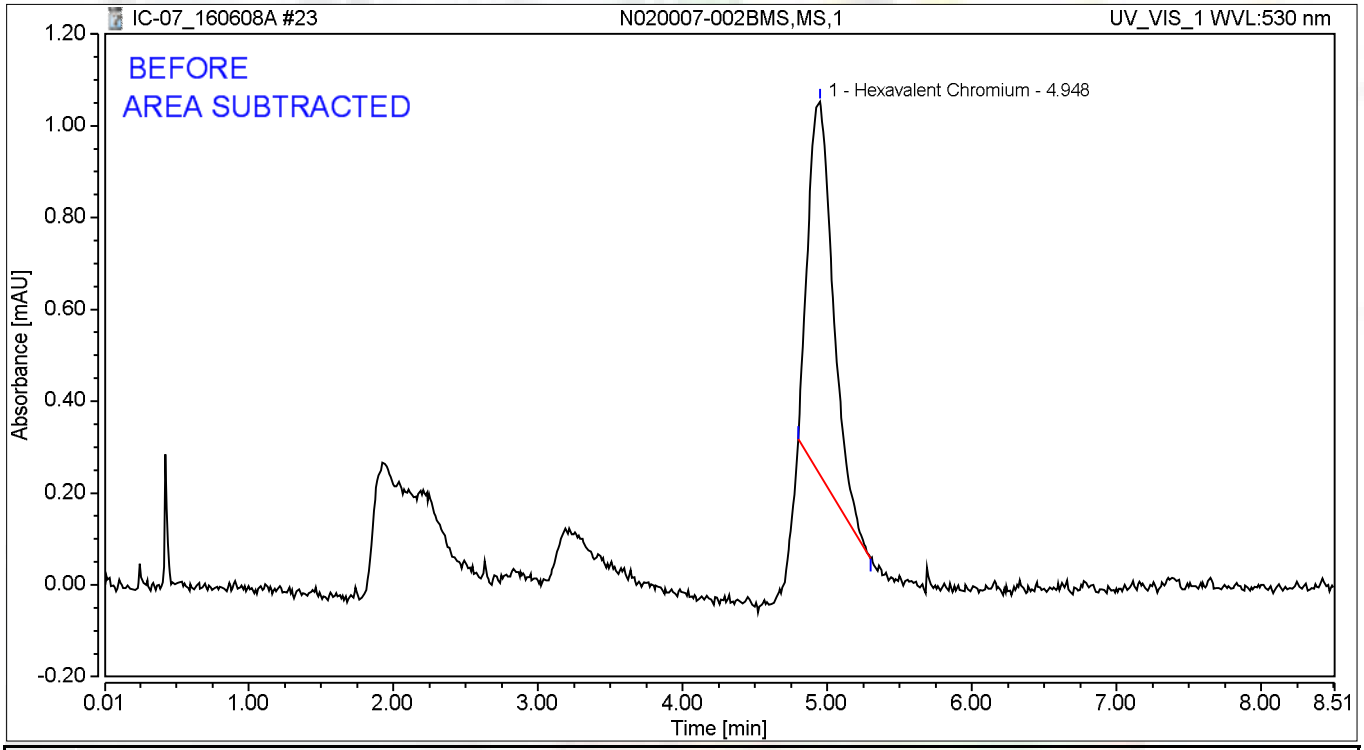
6/22/2016

Chromatogram and Results

Injection Details

Injection Name:	**N020007-002BMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.948	0.162	0.813	100.00	100.00	0.6599
Total:			**0.162**	**0.813**	**100.00**	**100.00**	

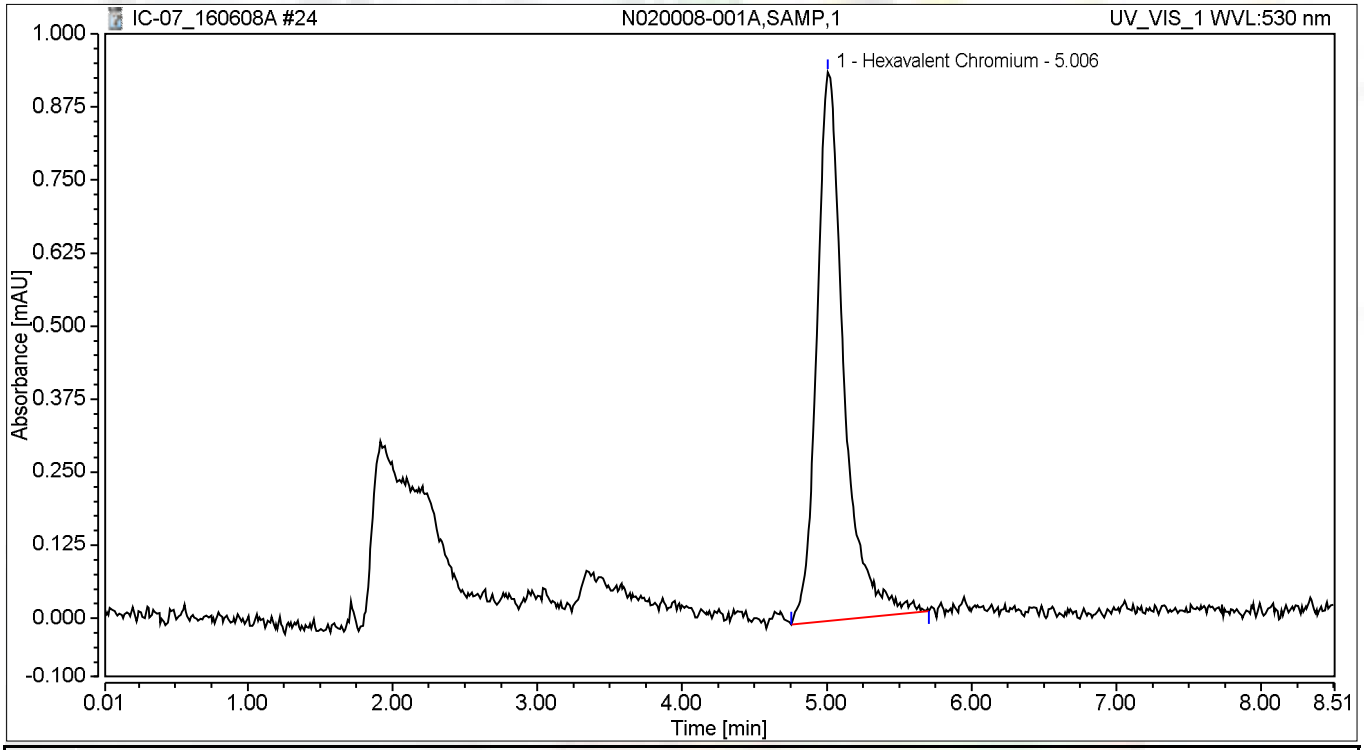
6/9/2016

Chromatogram and Results

Injection Details

Injection Name:	**N020008-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

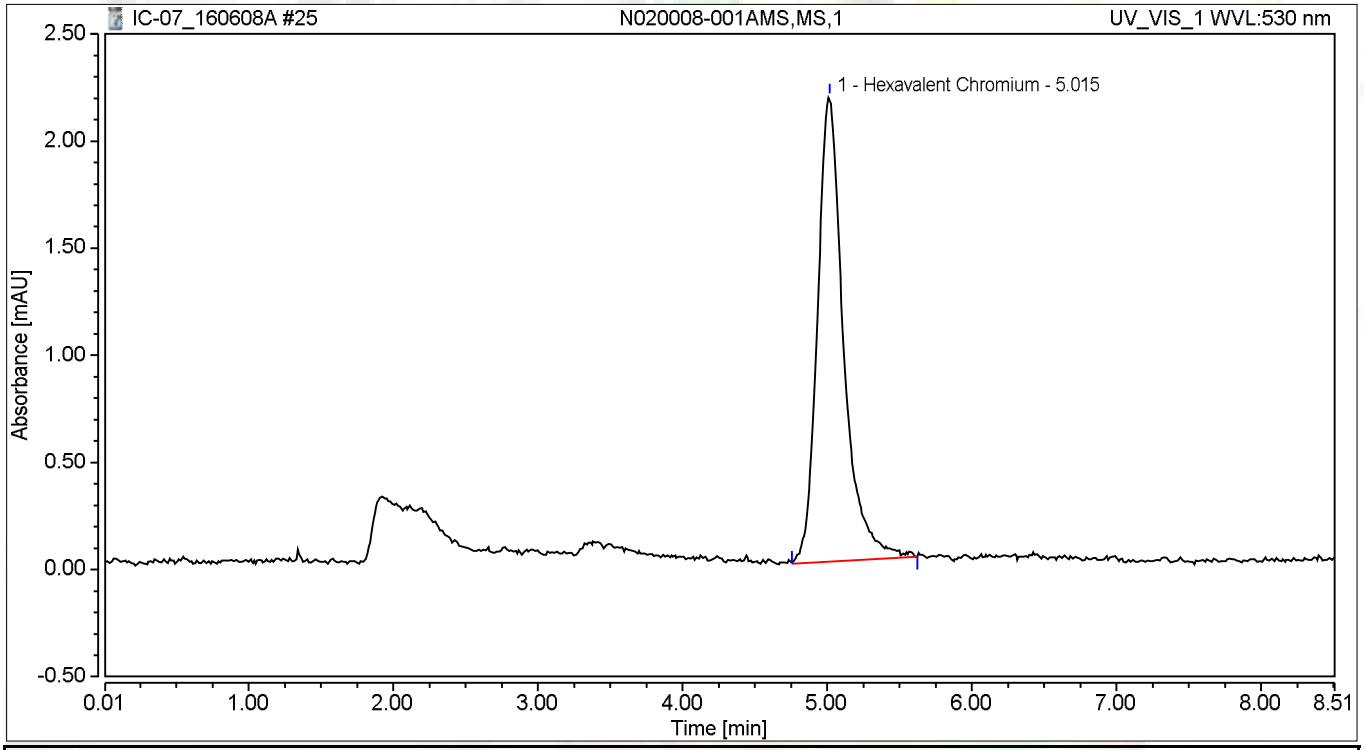
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.006	0.204	0.938	100.00	100.00	0.8271
Total:			**0.204**	**0.938**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N020008-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

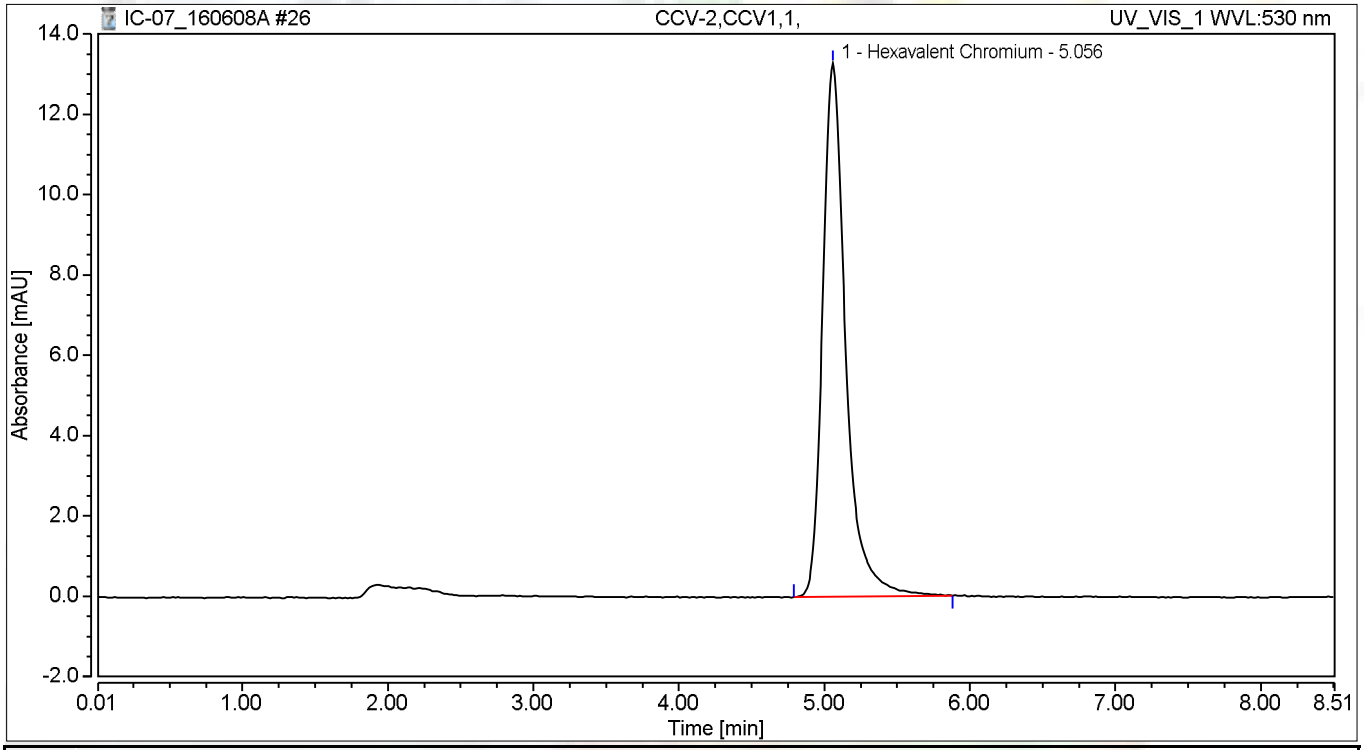
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.015	0.453	2.169	100.00	100.00	1.8401
Total:			**0.453**	**2.169**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

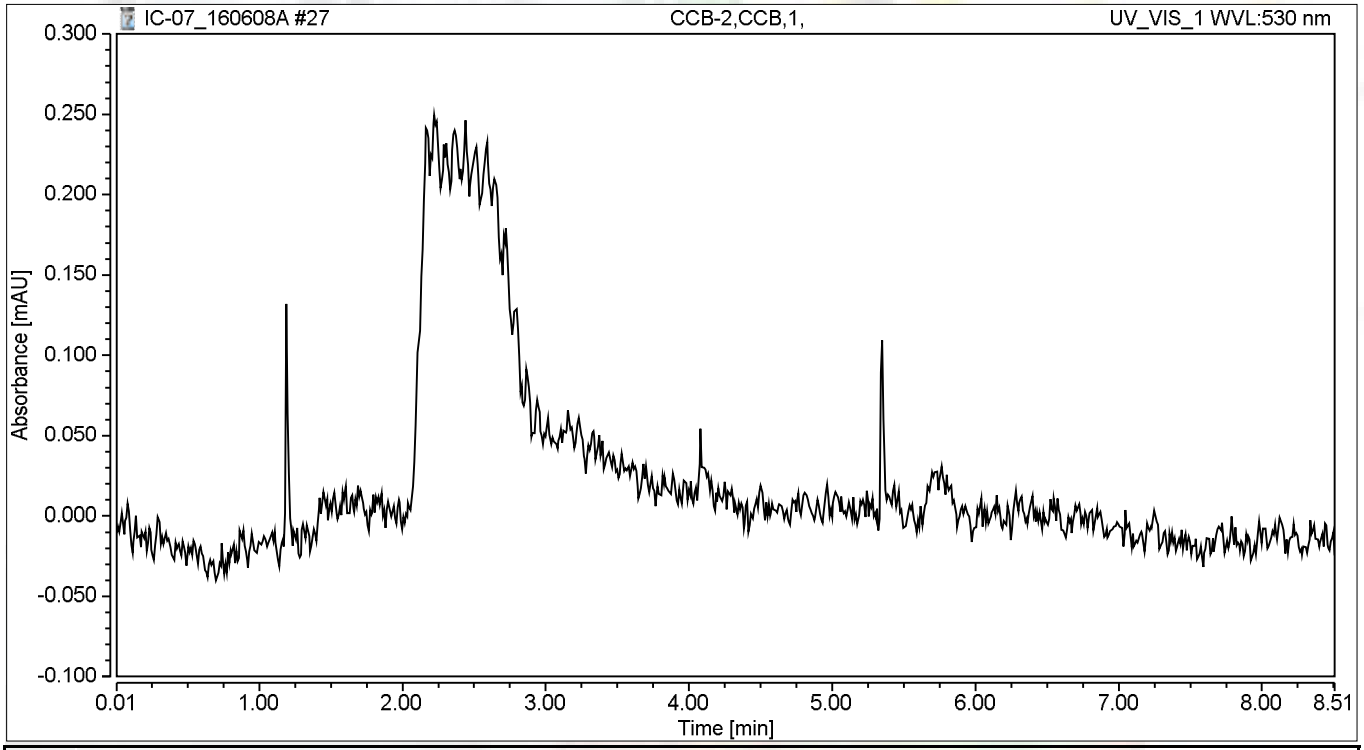
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.056	2.442	13.277	100.00	100.00	9.9253
Total:			**2.442**	**13.277**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**160526_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/16 14:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108873 **Analyst:** LSR

ASSET #: N020008 **Date Analyzed:** 6/8/2016

Method: EAPA 2320_W

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 6/9/2016

2nd Level Reviewer: 6/22/2016 Date: —

SAMPLE CALCULATION

N020008-001C

Sample ID: **N02~~000-~~001C @ pH 7.85**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (12.45 mL)

= **0.02008 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (11.70) (0.02008 N) (1) * 1000

= 234.9360 mg**/L**

Reporting results in two significant figures,

= **230 mg/L** as CaCO3

Julia Ramit 6/9/2016

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02008 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (11.70 mL) (0.02008) (1) * 1000

= 234.9360 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **234.9360 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **230 mg/L**

Julia Ramit 6/9/2016

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.28	50	0.00	0.050	MBLK
LCS-1	8.82	50	0.10	4.90	LCS
N020006-001A	7.98	50	0.00	11.40	SAMP
N020006-002A	7.50	50	0.00	7.80	SAMP
N020008-001C	7.85	50	0.00	11.70	SAMP
N020008-002C	7.65	50	0.00	7.90	SAMP
N020006-001ADUP	7.93	50	0.00	11.20	DUP
N020006-002AMS	7.86	50	0.00	13.10	MS
N020006-002AMSD	7.92	50	0.00	13.20	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**6/8/16**	
Time:	**3:00 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R160608A**	

Silvia Ramit 6/9/2016

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	6/8/16
Time:	3:00 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	4.02	94.38	98.39	98.39		P < 1/2 T
N020006-001A	0.00	0.00	228.92	228.92	228.92		P = 0
N020006-002A	0.00	0.00	156.63	156.63	156.63		P = 0
N020008-001C	0.00	0.00	234.94	234.94	234.94		P = 0
N020008-002C	0.00	0.00	158.63	158.63	158.63		P = 0
N020006-001ADUP	0.00	0.00	224.90	224.90	224.90		P = 0
N020006-002AMS	0.00	0.00	263.05	263.05	263.05		P = 0
N020006-002AMSD	0.00	0.00	265.06	265.06	265.06		P = 0

Julia Ramit 6/9/2016

Date Analyzed:	6/8/16		Reagents:					Standardization:					P = 0
Time Started:	3:00 PM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R160608A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.28				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.82				0.02008	0.10	4.80	4.90	1	2.01	98.39	
N020006-001A	50	7.98				0.02008	0.00	11.40	11.40	1	0.00	228.92	
N020006-002A	50	7.5				0.02008	0.00	7.80	7.80	1	0.00	156.63	
N020008-001C	50	7.85				0.02008	0.00	11.70	11.70	1	0.00	234.94	
N020008-002C	50	7.65				0.02008	0.00	7.90	7.90	1	0.00	158.63	
N020006-001ADU	50	7.93				0.02008	0.00	11.20	11.20	1	0.00	224.90	
N020006-002AMS	50	7.86				0.02008	0.00	13.10	13.10	1	0.00	263.05	
N020006-002AMS	50	7.92				0.02008	0.00	13.20	13.20	1	0.00	265.06	

Silvia Ramit 6/9/2016

Matrix: H_2O

Date Extracted: 6/8/16
Time Extracted: 1552
Extracted By: [illegible]

Date Analyzed: 6/8/16
Time Analyzed: 1500
Analyzed By: [illegible]

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-1601 25B
Hydrochloric Acid: —
Sulfuric Acid: R1606084
$NaHCO_3$: CINV1606 01A

pH meter CALIBRATION!
SLOPE: 98.4%
pH 4.402 - CINV160322A
7.701 - 160309A
10.000 - 160911D

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.55	IWST160601B	5 mL	0.05N	-	-	12.50	50/10	$N_{H_2SO_4} = \frac{(265\ g/L)(5\ mL)}{(53)(V\ titrant)}$	= 0.02
	#2	1	10.53	1	1	1	-	-	12.40	1		= 0.02016129
1)	MBLK	50 mL	5.28	-	-	-	0.02008	0	10.5	50/10		Ave = 0.02008645
2)	LCS		6.82	IWST160601C	1 mL	0.05N		0.10	4.90			
3)	ND20006-001A		7.98	-	-	-		0	11.40			
4)	1 2A		7.50	-	-	-		0	7.80			
5)	ND20006-001C		7.85	-	-	-		0	11.70			
6)	1 2C		7.65	-	-	-		0	7.90			
7)	ND20006-001A DUP		7.93	-	-	-		0	11.20			
8)	ND20006-002A MS		7.86	IWST160601C	1 mL	0.05N		0	13.10			
9)	1 2A MSD		7.92	1	1	1	1	0	13.20	1		
10)												
11)												
12)												
13)												
14)												
15)												
16)				$P = \frac{(V_{pH\,8.3})(N_{H_2SO_4})(50,000)}{V_{ox}}$								
17)												
18)												
19)				$T = \frac{(V_{pH\,4.5})(N_{H_2SO_4})(50,000)}{V_{ox}}$								
20)												
	MS											
	MSD											
	LCS											

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R108880
ASSET # N020008

Instrument ID: IC2
Analyst: QBM
Date Analyzed: 6/8/2016

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 6/10/2016

2nd Level Reviewer _____ Date: 6/16/2016

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

N020008_001C
For N020008_001C concentration in mg/L is calculated as follows:

Sulfate, mg/L = 6.82 * 50

= 341

Reporting result in two significant values,

Sulfate, mg/L = 340

ANALYSIS RUN LOG

DIONEX SCHEDULE - C:\DX\SCHEDULE\160518.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160518.M	..\16051901.D01	1	1	1
2	,BLANK,	..\160518.M	..\16051901.D01	1	1	1
3	AUTOCAL1R	..\160518.M	..\16051901.D01	1	1	1
4	AUTOCAL2R	..\160518.M	..\16051901.D01	1	1	1
5	AUTOCAL3R	..\160518.M	..\16051901.D01	1	1	1
6	AUTOCAL4R	..\160518.M	..\16051901.D01	1	1	1
7	AUTOCAL5R	..\160518.M	..\16051901.D01	1	1	1
8	AUTOCAL6R	..\160518.M	..\16051901.D01	1	1	1
9	,ICV,ICV,1,	..\160518.M	..\16051901.D01	1	1	1
10	,ICB,ICB,1,	..\160518.M	..\16051901.D01	1	1	1
11	,MB-H2O,MBLK,1,	..\160518.M	..\16051901.D01	1	1	1
12	,LCS-H2O,LCS,1,	..\160518.M	..\16051901.D01	1	1	1
13	,N019613-001A,SAMP,	..\160518.M	..\16051901.D13	1	1	1
14	,N019613-001A,SAMP,	..\160518.M	..\16051901.D14	1	1	1
15	,N019613-002A,SAMP,	..\160518.M	..\16051901.D15	1	1	1
16	,N019613-002A,SAMP,	..\160518.M	..\16051901.D16	1	1	1
17	,N019613-001ADUP,DU	..\160518.M	..\16051901.D17	1	1	1
18	,N019613-002AMS,MS,	..\160518.M	..\16051901.D18	1	1	1
19	,N019613-002AMSD,MS	..\160518.M	..\16051901.D19	1	1	1
20	,N019613-001ADUP,DU	..\160518.M	..\16051901.D20	1	1	1
21	,CCV-1,CCV,1,	..\160518.M	..\16051901.D21	1	1	1
22	,CCB-1,CCB,1,	..\160518.M	..\16051901.D22	1	1	1
23	,N019613-002AMS,MS,	..\160518.M	..\16051901.D23	1	1	1
24	,N019613-002AMSD,MS	..\160518.M	..\16051901.D24	1	1	1
25	,N019651-001A,SAMP,	..\160518.M	..\16051901.D25	1	1	1
26	,N019651-002A,SAMP,	..\160518.M	..\16051901.D26	1	1	1
27	,N019651-003C,SAMP,	..\160518.M	..\16051901.D27	1	1	1
28	,N019651-004C,SAMP,	..\160518.M	..\16051901.D28	1	1	1
29	,N019651-005B,SAMP,	..\160518.M	..\16051901.D29	1	1	1
30	,N019651-006B,SAMP,	..\160518.M	..\16051901.D30	1	1	1
31	,N019651-007B,SAMP,	..\160518.M	..\16051901.D31	1	1	1
32	,N019651-002ADUP,DU	..\160518.M	..\16051901.D32	1	1	1
33	,CCV-2,CCV,1,	..\160518.M	..\16051901.D33	1	1	1
34	,CCB-2,CCB,1,	..\160518.M	..\16051901.D34	1	1	1
35	,N019651-002AMS,MS,	..\160518.M	..\16051901.D35	1	1	1
36	,N019651-002AMSD,MS	..\160518.M	..\16051901.D36	1	1	1
37	,N019727-001A,SAMP,	..\160518.M	..\16051901.D37	1	1	1
38	,N019727-002A,SAMP,	..\160518.M	..\16051901.D38	1	1	1
39	,N019727-003A,SAMP,	..\160518.M	..\16051901.D39	1	1	1
40	,N019727-004A,SAMP,	..\160518.M	..\16051901.D40	1	1	1
41	,N019742-001A,SAMP,	..\160518.M	..\16051901.D41	1	1	1
42	,N019742-002A,SAMP,	..\160518.M	..\16051901.D42	1	1	1
43	,N019742-002AMS,MS,	..\160518.M	..\16051901.D43	1	1	1
44	,N019742-001A,SAMP,	..\160518.M	..\16051901.D44	1	1	1
45	,CCV-3,CCV,1,	..\160518.M	..\16051901.D45	1	1	1
46	,CCB-3,CCB,1,	..\160518.M	..\16051901.D46	1	1	1
47	,N019742-002A,SAMP,	..\160518.M	..\16051901.D47	1	1	1
48	,N019742-001A,SAMP,	..\160518.M	..\16051901.D48	1	1	1
49	,N019742-002A,SAMP,	..\160518.M	..\16051901.D49	1	1	1
50	,N019743-003A,SAMP,	..\160518.M	..\16051901.D50	1	1	1
51	,N019743-003A,SAMP,	..\160518.M	..\16051901.D51	1	1	1
52	,N019743-003A,SAMP,	..\160518.M	..\16051901.D52	1	1	1
53	,N019743-006A,SAMP,	..\160518.M	..\16051901.D53	1	1	1
54	,N019743-006A,SAMP,	..\160518.M	..\16051901.D54	1	1	1
55	,N019743-006A,SAMP,	..\160518.M	..\16051901.D55	1	1	1
56	,CCV-4,CCV,1,	..\160518.M	..\16051901.D56	1	1	1
57	,CCB-4,CCB,1,	..\160518.M	..\16051901.D57	1	1	1
58	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

5/19/2016

DIONEX SCHEDULE - C:\DX\SCHEDULE\160608.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\160518.M	..\16060801.D01	1	1	1
2	,CCV-1,CCV,1,	..\160518.M	..\16060801.D02	1	1	1
3	,CCB-1,CCB,1,	..\160518.M	..\16060801.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\160518.M	..\16060801.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\160518.M	..\16060801.D05	1	1	1
6	,N020006-001A,SAMP,	..\160518.M	..\16060801.D06	1	1	1
7	,N020006-001ADUP,DU	..\160518.M	..\16060801.D07	1	1	1
8	,N020006-002A,SAMP,	..\160518.M	..\16060801.D08	1	1	1
9	,N020006-002AMS,MS,	..\160518.M	..\16060801.D09	1	1	1
10	,N020006-002AMSD,MS	..\160518.M	..\16060801.D10	1	1	1
11	,N020006-001A,SAMP,	..\160518.M	..\16060801.D11	1	1	1
12	,N020006-001ADUP,DU	..\160518.M	..\16060801.D12	1	1	1
13	,N020006-002A,SAMP,	..\160518.M	..\16060801.D13	1	1	1
14	,CCV-2,CCV,1,	..\160518.M	..\16060801.D14	1	1	1
15	,CCB-2,CCB,1,	..\160518.M	..\16060801.D15	1	1	1
16	,N020006-002AMS,MS,	..\160518.M	..\16060801.D16	1	1	1
17	,N020006-002AMSD,MS	..\160518.M	..\16060801.D17	1	1	1
18	,N020007-002A,SAMP,	..\160518.M	..\16060801.D18	1	1	1
19	,N020007-002ADUP,DU	..\160518.M	..\16060801.D19	1	1	1
20	,N020007-002AMS,MS,	..\160518.M	..\16060801.D20	1	1	1
21	,N020007-002AMSD,MS	..\160518.M	..\16060801.D21	1	1	1
22	,N020007-002A,SAMP,	..\160518.M	..\16060801.D22	1	1	1
23	,N020008-001C,SAMP,	..\160518.M	..\16060801.D23	1	1	1
24	,N020008-001C,SAMP,	..\160518.M	..\16060801.D24	1	1	1
25	,N020008-002C,SAMP,	..\160518.M	..\16060801.D25	1	1	1
26	,CCV-3,CCV,1,	..\160518.M	..\16060801.D26	1	1	1
27	,CCB-3,CCB,1,	..\160518.M	..\16060801.D27	1	1	1
28	,N020008-002C,SAMP,	..\160518.M	..\16060801.D28	1	1	1
29	,CCV-4,CCV,1,	..\160518.M	..\16060801.D29	1	1	1
30	,CCB-4,CCB,1,	..\160518.M	..\16060801.D30	1	1	1
31	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST160211F, G, H, I, J, K and L

6/9/2016

INITIAL CALIBRATION DATA SUMMARY

DIONEX METHOD PARAMETERS - 160518.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS

Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\14120201.D02

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

5/19/2016

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

5/19/2016

Component Table -- Last Modified: 10:40 on Wed, 18 May 2016

Component # 1 Fluoride Retention Time 2.53
Reference Comp. Fluoride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 3.55722E-002
K1 = 2.87185E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	16218	1783
3	5.00000E-001	159154	15771
4	1.00000E+000	315880	33709
5	2.50000E+000	848683	89437
6	5.00000E+000	1737026	193582

Component # 2 Chloride Retention Time 3.75
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.23525E-002
K1 = 3.71879E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	136336	13309
3	1.00000E+000	253652	26331
4	2.50000E+000	629841	66684
5	5.00000E+000	1296522	140689
6	1.00000E+001	2692236	307986

Component # 3 Nitrite Retention Time 4.57
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 2.39496E-002
K1 = 2.08065E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	28601	2208
3	5.00000E-001	225551	18168
4	1.00000E+000	448317	36000
5	2.50000E+000	1175274	96093
6	5.00000E+000	2402805	206975

Component # 4 Bromide Retention Time 5.53
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -7.51719E-003
K1 = 8.58994E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	25977	2270
3	5.00000E-001	55950	4866
4	1.00000E+000	114862	9110
5	2.50000E+000	300032	23719
6	5.00000E+000	579450	46913

5/19/2016

Component # 5 Nitrate Retention Time 6.25
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 3.59213E-002
K1 = 1.46938E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	39630	2723
3	5.00000E-001	301106	22252
4	1.00000E+000	620536	47017
5	2.50000E+000	1654250	128202
6	5.00000E+000	3396858	270885

Component # 6 Phosphate Retention Time 8.15
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.79421E-002
K1 = 4.20410E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	23201	1531
3	5.00000E-001	115179	6567
4	1.00000E+000	229436	13046
5	2.50000E+000	580656	34328
6	5.00000E+000	1190475	68236

Component # 7 Sulfate Retention Time 9.27
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.51871E-001
K1 = 5.10384E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	101696	4950
3	2.00000E+000	369766	20169
4	5.00000E+000	905080	51248
5	1.00000E+001	1863321	105826
6	2.00000E+001	3929008	230257

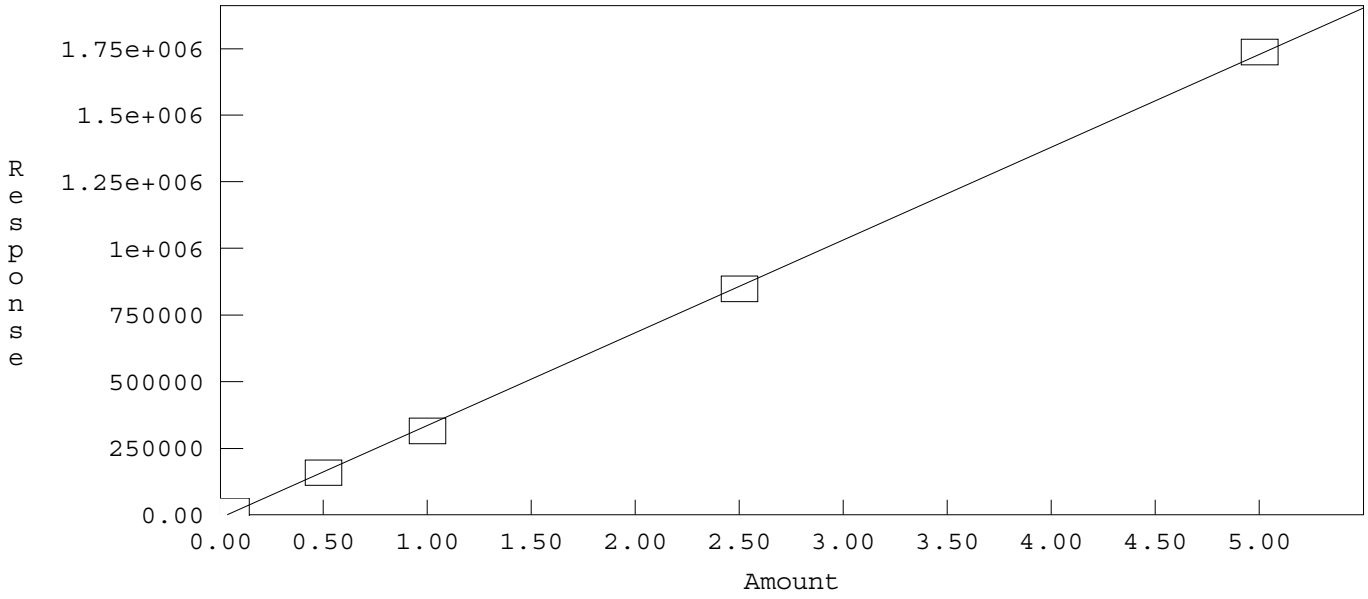
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

5/19/2016

Method: 160518.MET - Last Updated: 10:40 on Wed, 18 May 2016

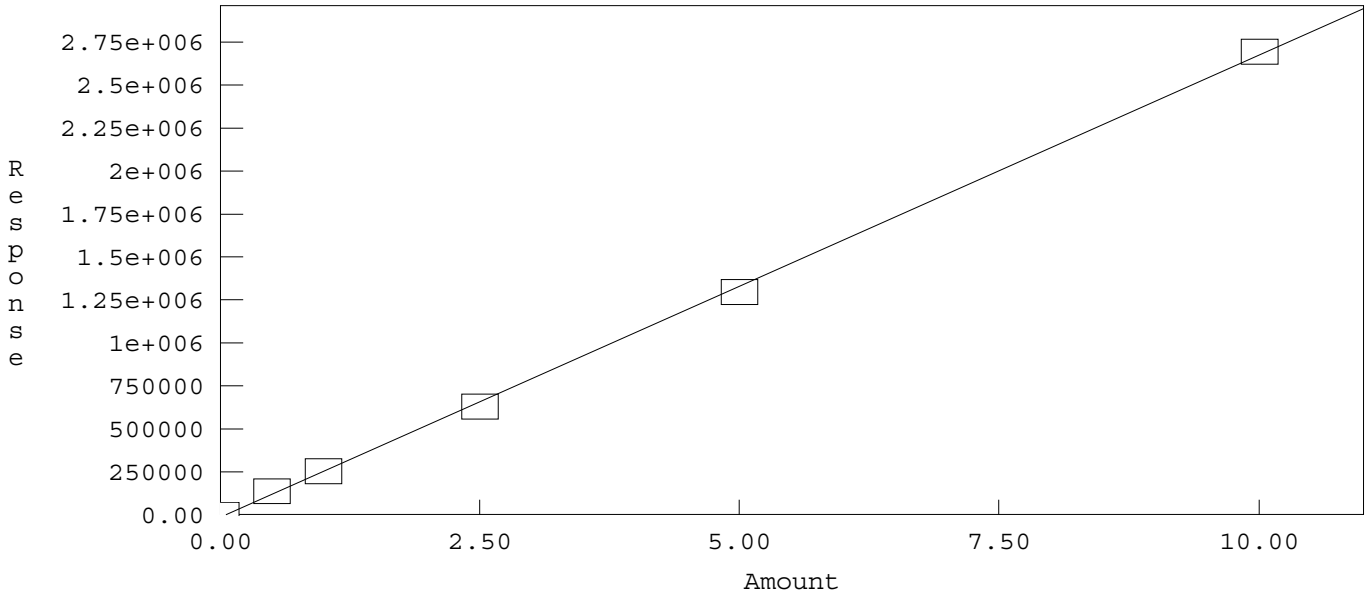
Component: Fluoride
Fit Type: Linear
r^2 = 0.999631
Amt = Resp * 2.872e-006 + 0.03557
Resp = Amt * 3.482e+005 + -1.239e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160518.MET

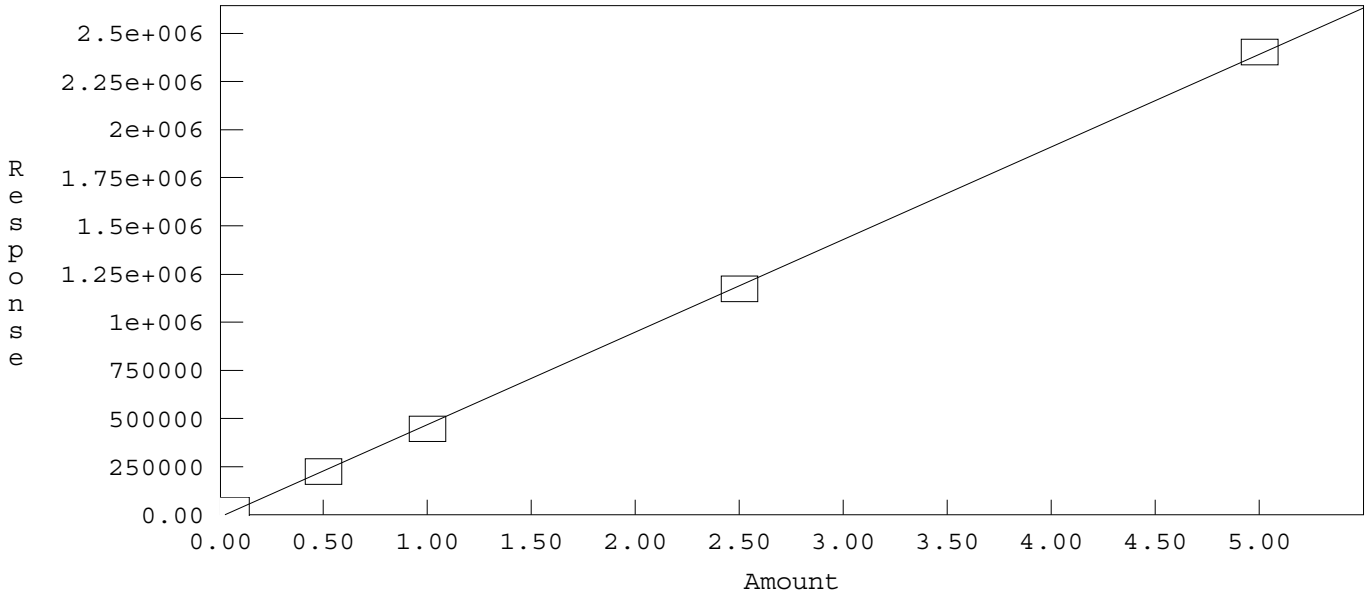
Component: Chloride
Fit Type: Linear
r^2 = 0.999491
Amt = Resp * 3.719e-006 + 0.06235
Resp = Amt * 2.689e+005 + -1.677e+004
Standardization: External
Calibration: Area

5/19/2016



Method: C:\DX\METHOD\160518.MET

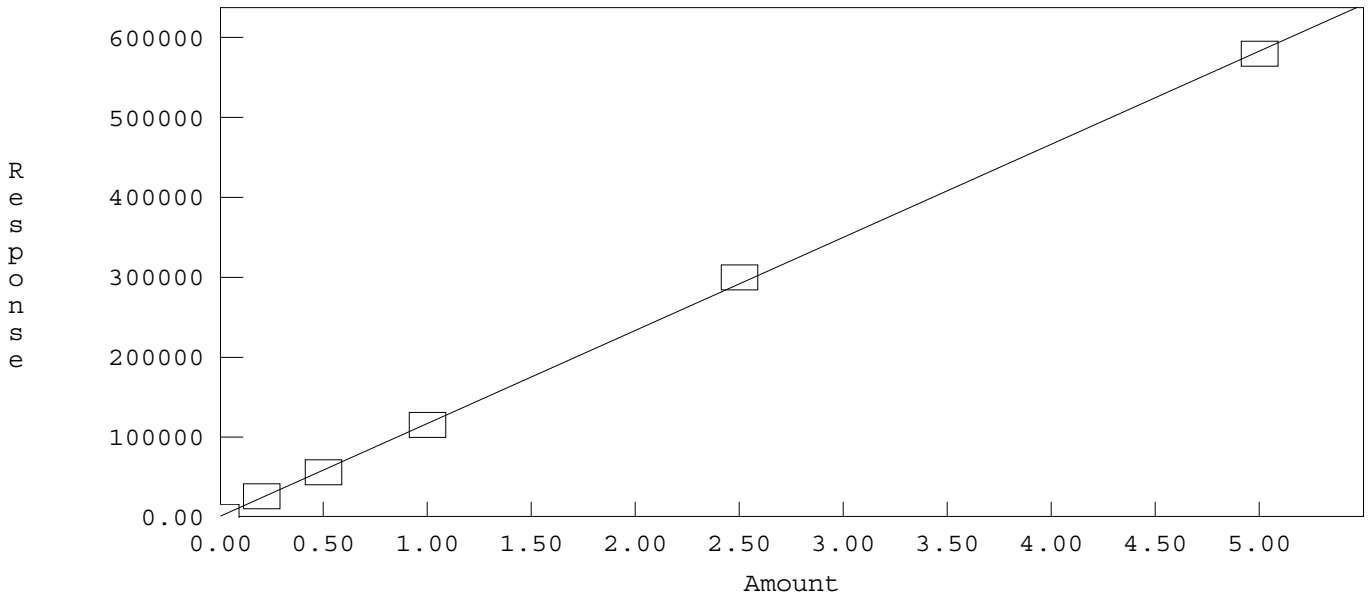
Component: Nitrite
Fit Type: Linear
r² = 0.999730
Amt = Resp * 2.081e-006 + 0.02395
Resp = Amt * 4.806e+005 + -1.151e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160518.MET

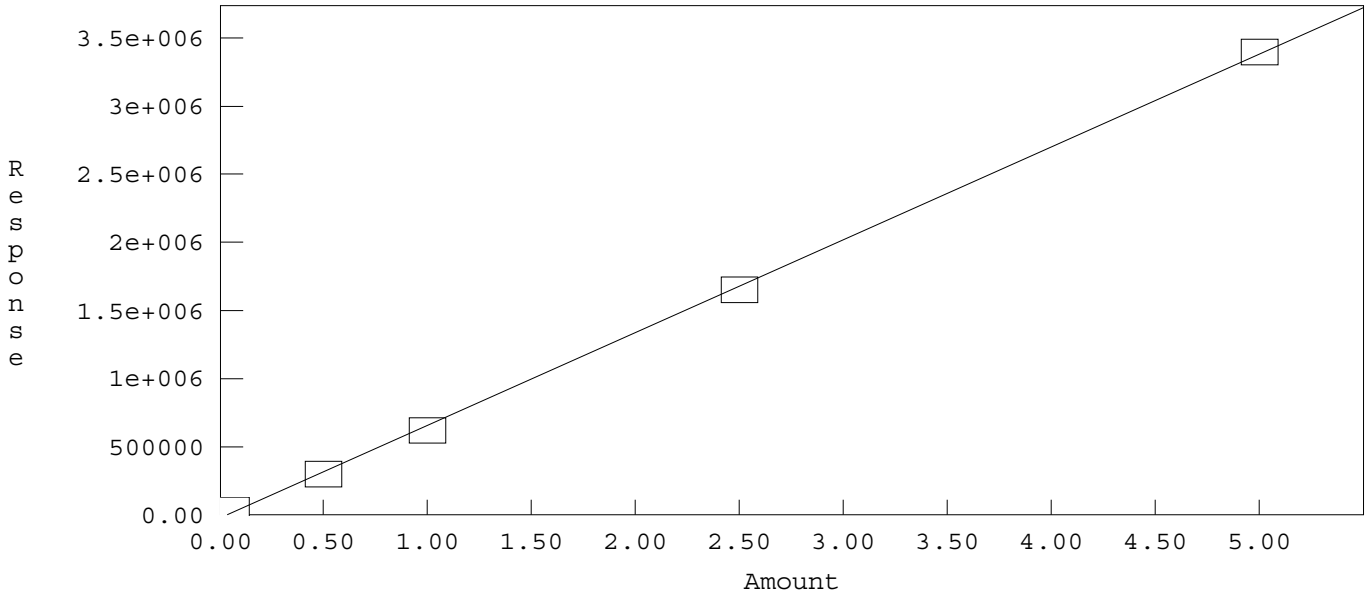
Component: Bromide
Fit Type: Linear
r² = 0.999608
Amt = Resp * 8.59e-006 + -0.007517
Resp = Amt * 1.164e+005 + 875.1
Standardization: External
Calibration: Area

2 5/19/2016



Method: C:\DX\METHOD\160518.MET

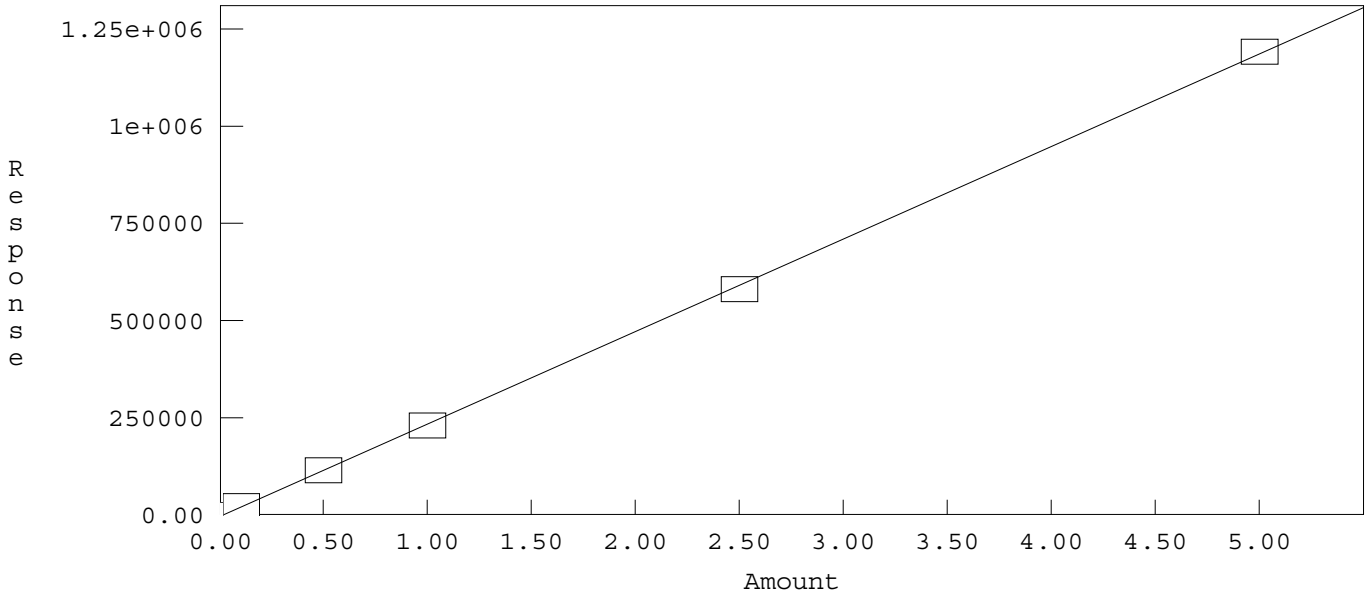
Component: Nitrate
Fit Type: Linear
r^2 = 0.999560
Amt = Resp * 1.469e-006 + 0.03592
Resp = Amt * 6.806e+005 + -2.445e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\160518.MET

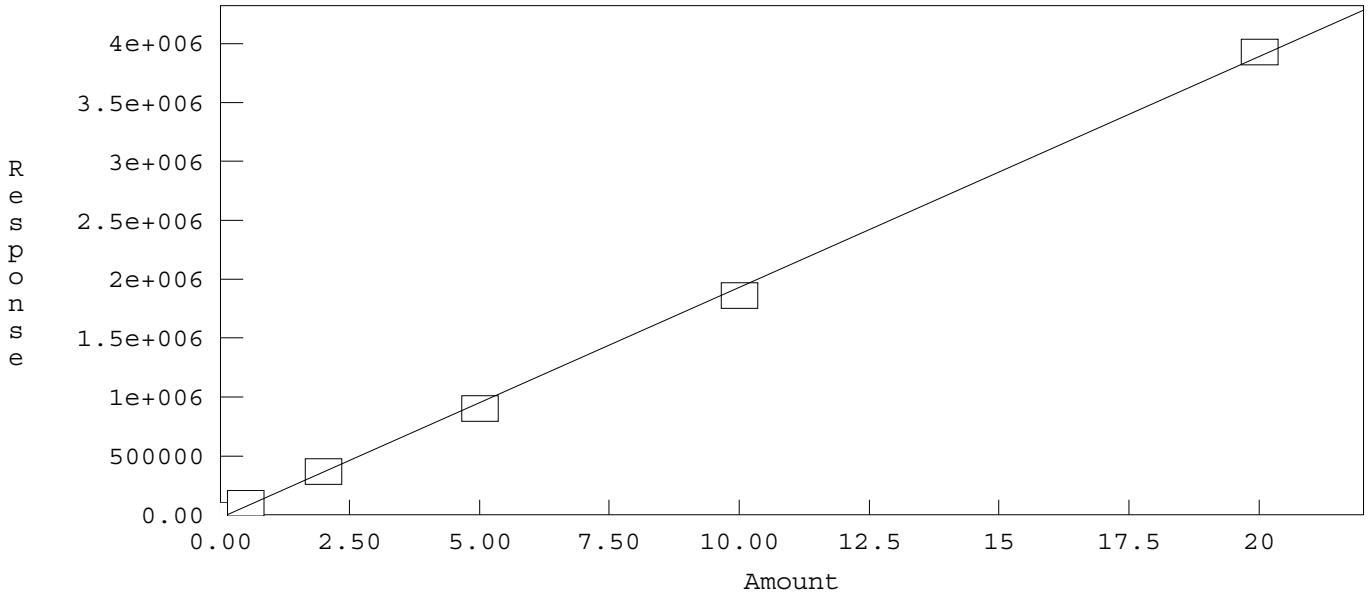
Component: Phosphate
Fit Type: Linear
r^2 = 0.999836
Amt = Resp * 4.204e-006 + 0.01794
Resp = Amt * 2.379e+005 + -4268
Standardization: External
Calibration: Area

5/19/2016



Method: C:\DX\METHOD\160518.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999110
Amt = Resp * 5.104e-006 + 0.1519
Resp = Amt * 1.959e+005 + -2.976e+004
Standardization: External
Calibration: Area



5/19/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **ICV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **5/18/2016**	SeqNo: **2348097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.495	0.50	2.500	0	99.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.515	0.50	2.500	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.429	0.50	2.500	0	97.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.514	0.50	2.500	0	101	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.435	0.50	2.500	0	97.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **ICV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **5/18/2016**	SeqNo: **2348116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.910	0.50	5.000	0	98.2	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.892	0.50	5.000	0	97.8	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.928	0.50	5.000	0	98.6	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.074	0.50	5.000	0	101	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCV**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.896	0.50	5.000	0	97.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **ICB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **5/18/2016**	SeqNo: **2348098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **108880**
Client ID: **CCB**	Batch ID: **R108880**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2016**	SeqNo: **2348115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	ICB	SampType:	ICB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	ICB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	5/18/2016	SeqNo:	2348117

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-1	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	CCB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348119

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-2	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	CCB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348128

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-3	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	CCB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348133

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-4	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	108880
Client ID:	CCB	Batch ID:	R108880	TestNo:	EPA 300.0			Analysis Date:	6/8/2016	SeqNo:	2348135

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 6/8/2016

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.75	
CCV-2	Chloride	3.75	
CCV-3	Chloride	3.74	
CCV-4	Chloride	3.68	
	Average	3.723	
	Lower Limit	3.523	
	Upper Limit	3.923	
MB-R108880_CL	Chloride	0	N.A
LCS-R108880_CL	Chloride	3.76	PASS
N020006-001ADUP	Chloride	3.74	PASS
N020006-002AMS	Chloride	3.70	PASS
N020006-002AMSD	Chloride	3.73	PASS
N020008-001C	Chloride	3.68	PASS
N020008-002C	Chloride	3.75	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 6/8/2016

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.21	
CCV-2	Sulfate	9.17	
CCV-3	Sulfate	9.18	
CCV-4	Sulfate	9.05	
	Average	9.133	
	Lower Limit	8.933	
	Upper Limit	9.333	
MB-R108880_SO4	Sulfate	0	N.A
LCS-R108880_SO4	Sulfate	9.23	PASS
N020006-001ADUP	Sulfate	9.22	PASS
N020006-002AMS	Sulfate	9.11	PASS
N020006-002AMSD	Sulfate	9.17	PASS
N020008-001C	Sulfate	9.22	PASS
N020008-002C	Sulfate	9.23	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

SM 3500-Cr B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R108989 **Analyst:** QBM

ASSET #: N020008 **Date Analyzed:** 6/16/16

Method: 3500_Cr

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)	X					
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 6/21/2016

2nd Level Reviewer _____ Date: 6/21/2016

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N020008-002A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 312.93 * 2

= 625.86 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 630

6/21/2016

INITIAL CALIBRATION DATA SUMMARY

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	6/16/2016
Organisation	(None Entered)	Time of Report	2:51:50
Information	(None Entered)		

Calibration - EPA 3500_CRB_06162016.fqc

Operator Name	(None Entered)
Instrument ID	152119

Calibration Method - EPA 3500_CRB_06162016.fqc

Description	Hexavalent Chromium by EPA 7196 (Colorimetric)		
Operator Name	QBM		
Quant Mode	Single Lambda	Standards	5
Lambda 1	540.0 nm	Replicates	1
Lambda 2	Off	Initial Curve Fit	Linear
Lambda 3	Off	Conc. Units	ug/L
Integ. Time	00:00:01	Conc. Dec. Places	3
Lamp Change	325.0 nm	Flier Detection	Off
Bandwidth	2.0 nm	Valid Until	6/16/2017
Method Status	Unlocked		

Standards Table - EPA 3500_CRB_06162016.fqc

Standard	Conc.	Use	540.0nm	Errors
Standard01				
	10.000	Yes	0.008	None
Standard02				
	50.000	Yes	0.042	None
Standard03				
	100.000	Yes	0.083	None
Standard04				
	250.000	Yes	0.203	None
Standard05				
	500.000	Yes	0.400	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

Errors Key

None	: No Errors Detected
I	: Invalid Data

Calibration Line / Curve Statistics

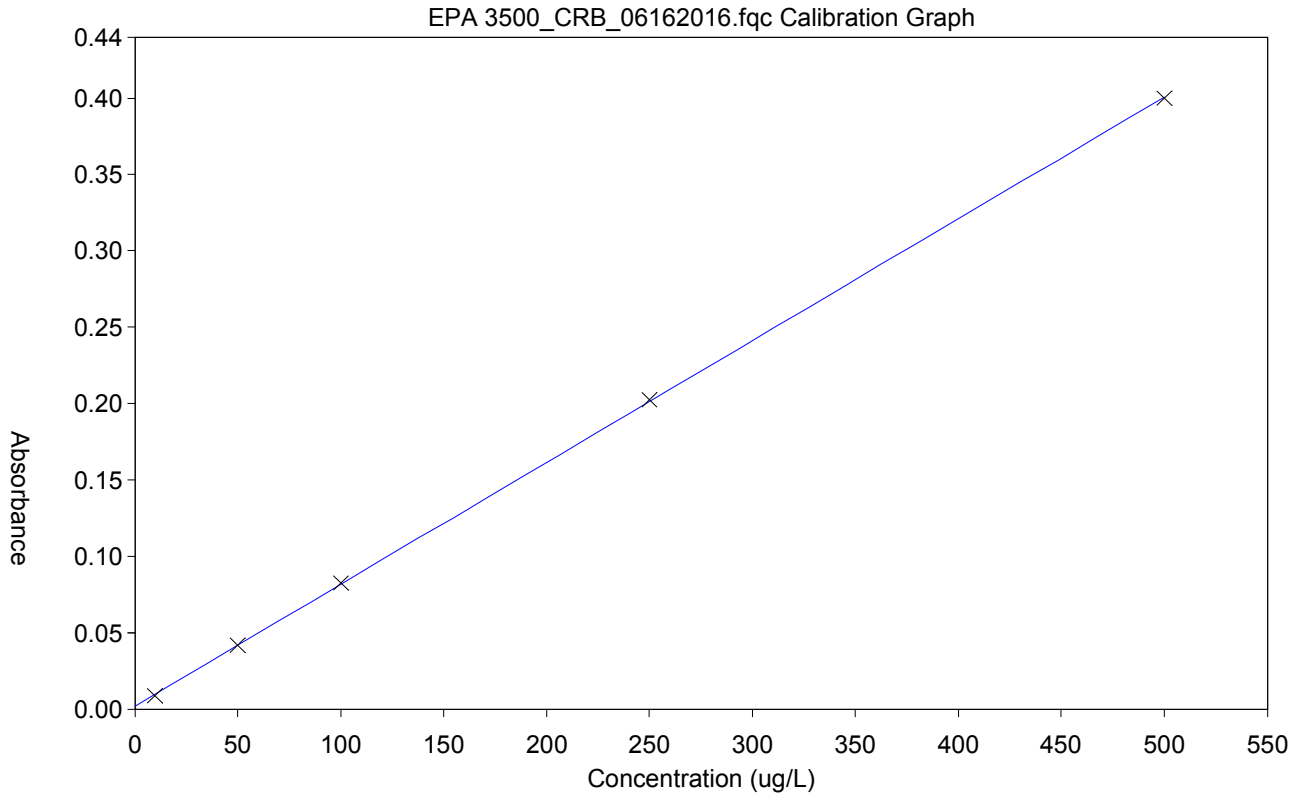
Equation	A = 0.0008 x Conc + 0.0019
Selected Fit	Linear

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	6/16/2016
Organisation	(None Entered)	Time of Report	2:51:50
Information	(None Entered)		

Coefficient	0.999948
Sum of Residuals	(<0.0001)

Calibration Graph



ICAL: IWST160310A
ICV/LCS/MS/MSD: IWST160119A
CCV: ISST150306A
10% H2SO4: R160512E
1,5-Diphenylcarbazide Solution: R160616A

6/21/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108989**
Client ID: **CCV**	Batch ID: **R108989**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/16/2016**	SeqNo: **2353614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	102.791	10	100.0	0	103	90	110				

Sample ID **ICV**	SampType: **ICV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108989**
Client ID: **ICV**	Batch ID: **R108989**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/16/2016**	SeqNo: **2353616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	250.910	10	250.0	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108989**
Client ID: **CCB**	Batch ID: **R108989**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/16/2016**	SeqNo: **2353613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.156	10									

Sample ID **ICB**	SampType: **ICB**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **108989**
Client ID: **ICB**	Batch ID: **R108989**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/16/2016**	SeqNo: **2353615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.399	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Calibration Method - EPA 3500_CRB_06162016.fqc

6/16/2016 15:00

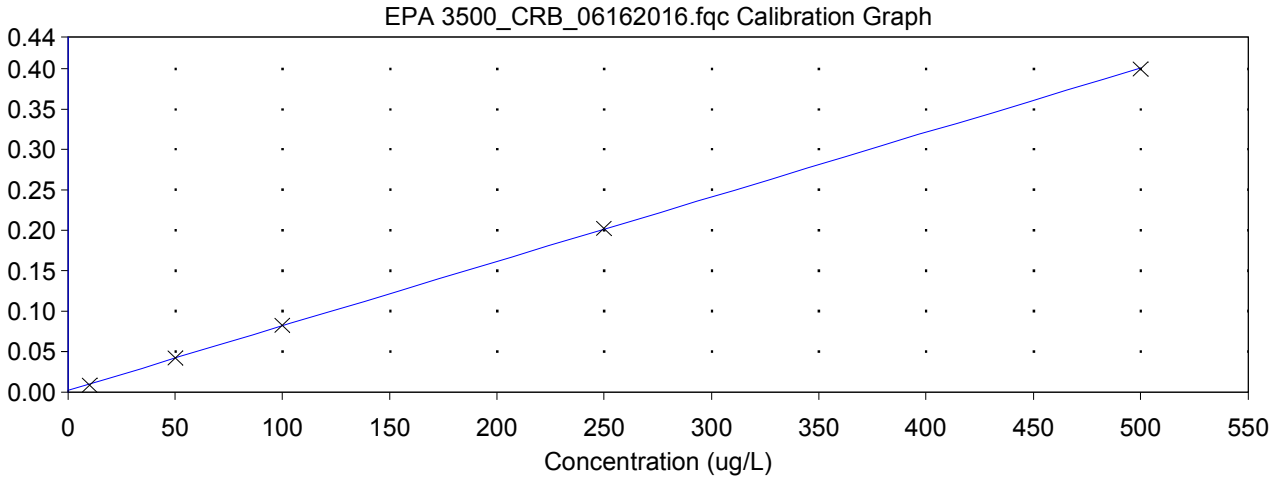
Description	Hexavalent Chromium by EPA 7196 (Colorimetric)		
Operator Name	QBM		
Quant Mode	Single Lambda	Standards	5
Lambda 1	540.0 nm	Replicates	1
Lambda 2	Off	Initial Curve Fit	Linear
Lambda 3	Off	Conc. Units	ug/L
Integ. Time	00:00:01	Conc. Dec. Places	3
Lamp Change	325.0 nm	Flier Detection	Off
Bandwidth	2.0 nm	Valid Until	6/16/2017
Method Status	Unlocked		

Calibration Line / Curve Statistics

Equation	A = 0.0008 x Conc + 0.0019
Selected Fit	Linear
Coefficient	0.999948
Sum of Residuals	(<0.0001)

Standard	Conc.	Use	540.0nm	Errors
Standard01	10.000	Yes	0.008	None
Standard02	50.000	Yes	0.042	None
Standard03	100.000	Yes	0.083	None
Standard04	250.000	Yes	0.203	None
Standard05	500.000	Yes	0.400	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.



Batch : Hexavalent Chromium_06162016001.qre

	Sample	540.0nm	Conc.	Errors
1	,ICV,ICV,1,	0.202	250.910	None
2	,ICB,ICB,1,	0.002	0.399	None
3	,MB-H2O,MBLK,1,	0.002	0.717	None
4	,LCS-H2O,LCS,1,	0.083	101.524	None
5	,N020006-001D,SAMP,1,	0.002	0.111	None
6	,N020006-002D,SAMP,2,	0.250	311.539	None
7	,N020006-002DDUP,DUP,2,	0.252	313.156	None
8	,N020008-002A,SAMP,2,	0.252	312.930	None
9	,N020008-002AMS,MS,2,	0.327	407.297	None
10	,N020008-002AMSD,MSD,2,	0.329	409.941	None
11	,CCV-1,CCV,1,	0.084	102.791	None
12	,CCB-1,CCB,1,	0.002	0.156	None

ICAL: IWST160310A
ICV/LCS/MS/MSD: IWST160119A
CCV: ISST150306A
10% H2SO4: R160512E
1,5-Diphenylcarbazide Solution: R160616A

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

6/21/2016

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R109043 **Analyst:** REB

ASSET #: N020008 **Date Analyzed:** 6/20/2016

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.		X				
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

CCV-2 failed, high bias. N020008-001D and 002D were re-run. CCV-3 and CCV-4 passed criteria.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Reb 06/21/2016 Date:

2nd Level Reviewer Date: 6/21/2016

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N020008-002D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5706*5

= 2.853 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 2.9

Reb 06/21/2016

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

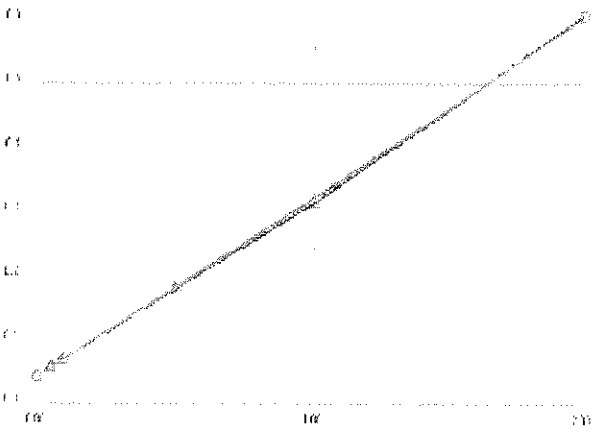
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.28x + 0.0422
Correlation	.999811

Calibrant	Energy	Set	Conc
1	0.0435	0.0000	0.0048
2	0.0586	0.0500	0.0587
3	0.0713	0.1000	0.1041
4	0.1810	0.5000	0.4959
5	0.3142	1.0000	0.9717
6	0.6062	2.0000	2.0147



Notes:

2% CuSO4- R160619A
R1 Buffer- R160619B
R2 Coloring reagent- R160620B

STD 1°- ISST160211J
STD 2°- ISST150730E

Reb 06/21/2016

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **ICV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.513	0.050	0.5000	0	103	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.483	0.050	0.5000	0	96.5	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.592	0.050	0.5000	0	118	90	110				S

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.485	0.050	0.5000	0	97.0	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCV**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.487	0.050	0.5000	0	97.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **ICB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **109043**
Client ID: **CCB**	Batch ID: **R109043**	TestNo: **SM4500-NO3**		Analysis Date: **6/20/2016**	SeqNo: **2355623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 06-20-2016 16:36
Time end: 06-20-2016 18:25

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:02:26	0.0105		0.0451
2	<BLANK>	18:03:26	0.0080		0.0444
3	<CAL1>	18:04:20	0.0048	[0]	0.0435
4	<CAL2>	18:05:21	0.0587	[0.05]	0.0586
5	<CAL3>	18:06:16	0.1041	[0.1]	0.0713
6	<CAL4>	18:07:12	0.4959	[0.5]	0.1810
7	<CAL5>	18:08:12	0.9717	[1]	0.3142
8	<CAL6>	18:09:07	2.0147	[2]	0.6062
9	,BLANK,BLANK,1,	18:09:56	0.0398		0.0533
10	,ICV,ICV,1,	18:10:38	0.5134		0.1859
11	,ICB,ICB,1,	18:11:28	0.0134		0.0459
12	,MB-H2O,MBLK,1,	18:12:10	0.0023		0.0428
13	,LCS-H2O,LCS,1,	18:12:59	0.4884		0.1789
14	,N020006-001C,SAMP,1,	18:13:42	0.0259		0.0494
15	,N020006-001CDUP,DUP,1,	18:14:24	0.0237		0.0488
16	,N020006-001CMS,MS,1,	18:15:13	0.5734		0.2027
17	,N020006-001CMSD,MSD,1,	18:15:55	0.5670		0.2009
18	,N020006-002C,SAMP,5,	18:16:38	0.6477		0.2235
19	,N020007-002D,SAMP,5,	18:17:26	0.5874		0.2066
20	,N020008-001D,SAMP,5,	18:18:10	0.0209		0.0480
21	,BLANK,BLANK,1	18:18:59	0.0094		0.0448
22	,CCV-1,CCV,1,	18:19:41	0.4827		0.1773
23	,CCB-1,CCB,1,	18:20:24	0.0123		0.0456
24	,N020008-002D,SAMP,5,	18:21:12	0.5492		0.1959
25	,BLANK,BLANK,1	18:21:55	0.0059		0.0438

Reb 06/21/2016

			EPA 353.2 NO3 as N ppm	Flags	OD
26	,CCV-2,CCV,1,	18:22:37	0.5924		0.2080
27	,CCB-2,CCB,1,	18:23:27	0.0066		0.0440

Reb 06/21/2016

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Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.ati-labs.com

Time start: 06-20-2016 18:35
Time end: 06-20-2016 19:19

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	19:12:27	-0.0099		0.0394
2	,CCV-3,CCV,1,	19:13:16	0.4849		0.1779
3	,CCB-3,CCB,1,	19:13:57	-0.0070		0.0402
4	,N020008-001D,SAMP,1,	19:14:46	0.0084		0.0445
5	,N020008-002D,SAMP,5,	19:15:30	0.5706		0.2019
6	,BLANK,BLANK,1	19:16:11	-0.0041		0.0410
7	,CCV-4,CCV,1,	19:17:00	0.4874		0.1786
8	,CCB-4,CCB,1,	19:17:42	-0.0049		0.0408

Reb 06/21/2016

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 06/20/2016
Time Analyzed: 16:36PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R160619B
Color reagent: R160620B
2% Copper Sulfate: R160619A
Ammonium Hydroxide: CINV-160406F

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N020006-001C		8.32						
2)	N020006-002C		8.54						
3)	N020007-002D		8.38						
4)	N020008-001D		8.11						
5)	N020008-002D		8.30						
6)									
7)									
8)									
9)									
10)									
11)									
12)									
13)									
14)									
15)									
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

Reb 06/21/2016

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58740
ASSET #: N020008

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 6/20/2016

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Ca in N020008-001B MS/MSD failed, low bias. However LCS passed criteria. DT passed.
%Rec of Al in ICSA2 failed (~120.34%). However, Al is not a target analyte.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 6/22/2016

2nd Level Reviewer _____ Date: 6/23/2016

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58740
ASSET #: N020008

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 6/20/2016

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 6/22/2016 Date: _____

2nd Level Reviewer _____ Date: 6/23/2016

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N020008-001B** , the concentration in ug/L is calculated as follows:

Calcium , ug/L = 119.927 * 1 * (25/25) *1000

Calcium , ug/L = 119927

Reporting results in two significant figures,

Calcium , ug/L = 120000

% RSD SUMMARY

RSD SUMMARY: 160620A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	49.62	15	<PQL
Standard1	ICAL	1	Ca	0.2	14.99	15	PASS
Standard2	ICAL	1	Ca	1	2.32	15	PASS
Standard3	ICAL	1	Ca	2	1.69	15	PASS
Standard4	ICAL	1	Ca	5	0.71	15	PASS
Standard5	ICAL	1	Ca	7.5	0.32	15	PASS
Standard6	ICAL	1	Ca	10	0.89	15	PASS
Standard7	ICAL	1	Ca	20	0.5	15	PASS
ICV	ICV	1	Ca	5.26	122.89	15	NR!
LLICV	CCV1	1	Ca	0.24	23.68	20	<PQL
ICV	ICV	1	Ca	9.98	0.27	15	PASS
LLICV	CCV1	1	Ca	0.22	14.12	20	PASS
ICB	ICB	1	Ca	0.037	27.23	15	<PQL
ICSA1	ICSA	1	Ca	506.45	0.55	15	PASS
ICSAB1	ICSAB	1	Ca	569.88	0.49	15	PASS
MB-58740	MBLK	1	Ca	0.033	141.42	15	<PQL
LCS1-58740	LCS	1	Ca	9.85	0.51	15	PASS
N020008-001B	SAMP	1	Ca	119.93	0.29	15	PASS
N020008-002B	SAMP	1	Ca	199.05	0.14	15	PASS
N020008-001B	SAMP	5	Ca	25.27	0.59	15	PASS
N020008-001B-PS	PS	1	Ca	128.9	0.11	15	PASS
N020008-001B-MS1	MS	1	Ca	124.83	0.24	15	PASS
N020008-001B-MSD1	MSD	1	Ca	124.99	0.29	15	PASS
CCV1	CCV	1	Ca	10.24	0.15	15	PASS
LLCCV1	CCV2	1	Ca	0.24	9.42	20	PASS
CCB1	CCB	1	Ca	0.026	151.25	15	<PQL
ICSA2	ICSA	1	Ca	508.84	0.13	15	PASS
ICSAB2	ICSAB	1	Ca	574.12	0.47	15	PASS
CalBlk	IBLK	1	Fe	0	5.31	15	PASS
Standard1	ICAL	1	Fe	0.02	1.67	15	PASS
Standard2	ICAL	1	Fe	0.05	0.22	15	PASS
Standard3	ICAL	1	Fe	2	0.61	15	PASS
Standard4	ICAL	1	Fe	5	0.32	15	PASS
Standard5	ICAL	1	Fe	7.5	0.27	15	PASS
Standard6	ICAL	1	Fe	10	0.54	15	PASS
Standard7	ICAL	1	Fe	20	0.045	15	PASS
ICV	ICV	1	Fe	7.57	78.6	15	NR!
LLICV	CCV1	1	Fe	0.023	2.74	20	PASS
ICV	ICV	1	Fe	9.81	0.033	15	PASS
LLICV	CCV1	1	Fe	0.022	3.71	20	PASS
ICB	ICB	1	Fe	0.00036	76	15	<PQL
ICSA1	ICSA	1	Fe	215.63	0.051	15	PASS

RSD SUMMARY: 160620A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB1	ICSAB	1	Fe	187.42	0.19	15	PASS
MB-58740	MBLK	1	Fe	0.0086	17.11	15	<PQL
LCS1-58740	LCS	1	Fe	0.098	0.9	15	PASS
N020008-001B	SAMP	1	Fe	0.00009	99.65	15	<PQL
N020008-002B	SAMP	1	Fe	0.01	14.52	15	PASS
N020008-001B	SAMP	5	Fe	0.0015	5.41	15	PASS
N020008-001B-PS	PS	1	Fe	0.12	1.16	15	PASS
N020008-001B-MS1	MS	1	Fe	0.11	0.66	15	PASS
N020008-001B-MSD1	MSD	1	Fe	0.11	0.55	15	PASS
CCV1	CCV	1	Fe	10.37	0.096	15	PASS
LLCCV1	CCV2	1	Fe	0.023	2.62	20	PASS
CCB1	CCB	1	Fe	0.00078	27.76	15	<PQL
ICSA2	ICSA	1	Fe	217.21	0.17	15	PASS
ICSAB2	ICSAB	1	Fe	188.44	0.2	15	PASS
CalBlk	IBLK	1	Mg	0	13.16	15	PASS
Standard1	ICAL	1	Mg	0.1	0.9	15	PASS
Standard2	ICAL	1	Mg	1	0.45	15	PASS
Standard3	ICAL	1	Mg	2	0.61	15	PASS
Standard4	ICAL	1	Mg	5	0.34	15	PASS
Standard5	ICAL	1	Mg	7.5	0.28	15	PASS
Standard6	ICAL	1	Mg	10	0.59	15	PASS
Standard7	ICAL	1	Mg	20	0.063	15	PASS
ICV	ICV	1	Mg	7.31	85.98	15	NR!
LLICV	CCV1	1	Mg	0.12	0.59	20	PASS
ICV	ICV	1	Mg	9.83	0.029	15	PASS
LLICV	CCV1	1	Mg	0.11	1.47	20	PASS
ICB	ICB	1	Mg	0.00048	104.019	15	<PQL
ICSA1	ICSA	1	Mg	483.33	0.12	15	PASS
ICSAB1	ICSAB	1	Mg	531.87	0.17	15	PASS
MB-58740	MBLK	1	Mg	0.0094	11.17	15	PASS
LCS1-58740	LCS	1	Mg	10.26	0.14	15	PASS
N020008-001B	SAMP	1	Mg	26.12	0.14	15	PASS
N020008-002B	SAMP	1	Mg	24.94	0.16	15	PASS
N020008-001B	SAMP	5	Mg	5.74	0.19	15	PASS
N020008-001B-PS	PS	1	Mg	35.29	0.14	15	PASS
N020008-001B-MS1	MS	1	Mg	34.58	0.22	15	PASS
N020008-001B-MSD1	MSD	1	Mg	34.6	0.16	15	PASS
CCV1	CCV	1	Mg	10.34	0.024	15	PASS
LLCCV1	CCV2	1	Mg	0.12	0.4	20	PASS
CCB1	CCB	1	Mg	0.0031	22.085	15	<PQL
ICSA2	ICSA	1	Mg	484.68	0.29	15	PASS
ICSAB2	ICSAB	1	Mg	532.78	0.18	15	PASS

RSD SUMMARY: 160620B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	37.039	15	<PQL
Standard1	ICAL	1	Na	0.1	2.66	15	PASS
Standard2	ICAL	1	Na	1	0.31	15	PASS
Standard3	ICAL	1	Na	5	0.71	15	PASS
Standard4	ICAL	1	Na	10	0.17	15	PASS
Standard5	ICAL	1	Na	20	0.49	15	PASS
Standard6	ICAL	1	Na	40	0.32	15	PASS
ICV	ICV	1	Na	10.082	0.34	15	PASS
ICB	ICB	1	Na	0.0062	51.062	15	<PQL
ICSA1	ICSA	1	Na	-0.0003	1409.047	15	<PQL
ICSAB1	ICSAB	1	Na	10.041	0.25	15	PASS
MB-58740	MBLK	1	Na	0.0093	90.99	15	<PQL
LCS2-58740	LCS	1	Na	19.68	0.44	15	PASS
N020008-001B	SAMP	5	Na	132.82	0.15	15	PASS
N020008-002B	SAMP	5	Na	290.12	0.98	15	PASS
N020008-001B 25x	SAMP	~~50~~	Na	27.11	0.11	15	PASS
N020008-002B	SAMP	50	Na	28.66	0.21	15	PASS
CCV1	CCV	1	Na	9.78	0.38	15	PASS
CCB1	CCB	1	Na	0.014	21.48	15	<PQL
N020008-00~~1B~~ 2B	SAMP	250	Na	5.78	0.36	15	PASS
N020008-002B-PS	PS	50	Na	29.036	0.11	15	PASS
N020008-002B-MS2	MS	50	Na	29.12	0.22	15	PASS
N020008-002B-MSD2	MSD	50	Na	29.1	0.27	15	PASS
CCV2	CCV	1	Na	9.86	0.23	15	PASS
CCB2	CCB	1	Na	0.013	25.95	15	<PQL
ICSA2	ICSA	1	Na	0.017	20.38	15	<PQL
ICSAB2	ICSAB	1	Na	10.095	0.33	15	PASS

6/22/2016

ANALYSIS RUN LOG

INJECTION LOG: 160620A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-160608A,0.5<50mL
Standard2	MWST-160608F
Standard3	MWST-160608J,5<50mL
Standard4	MWST-160608J,12.5<50mL
Standard5	MWST-160608J,15<40mL
Standard6	MWST-160608J,25<50mL
Standard7	MWST-160608J
ICV	MWST-160531E
CCV	MWST-160608J,25<50mL
ICSA/ICSAB	MWST-160523A/MWST-160608K
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-160201G/ H, MWST-160531G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/20/2016	12:30:56 PM
2	Standard1	ICAL	1	06/20/2016	12:35:16 PM
3	Standard2	ICAL	1	06/20/2016	12:40:06 PM
4	Standard3	ICAL	1	06/20/2016	12:44:55 PM
5	Standard4	ICAL	1	06/20/2016	12:49:47 PM
6	Standard5	ICAL	1	06/20/2016	12:54:38 PM
7	Standard6	ICAL	1	06/20/2016	12:59:27 PM
8	Standard7	ICAL	1	06/20/2016	01:04:17 PM
9	ICV	ICV	1	06/20/2016	01:09:37 PM
2	LLICV	CCV1	1	06/20/2016	01:15:28 PM
9	ICV	ICV	1	06/20/2016	01:20:29 PM
2	LLICV	CCV1	1	06/20/2016	01:24:51 PM
1	ICB	ICB	1	06/20/2016	01:29:39 PM
4	ICSA1	ICSA	1	06/20/2016	01:33:57 PM
5	ICSAB1	ICSAB	1	06/20/2016	01:39:53 PM
48	MB-58740	MBLK	1	06/20/2016	01:45:51 PM
49	LCS1-58740	LCS	1	06/20/2016	01:50:13 PM
50	N020008-001B	SAMP	1	06/20/2016	01:55:05 PM
51	N020008-002B	SAMP	1	06/20/2016	02:00:27 PM
52	N020008-001B	SAMP	5	06/20/2016	02:05:48 PM
53	N020008-001B-PS	PS	1	06/20/2016	02:10:08 PM
54	N020008-001B-MS1	MS	1	06/20/2016	02:15:28 PM
55	N020008-001B-MSD1	MSD	1	06/20/2016	02:20:50 PM
56	N019979-002C	SAMP	1	06/20/2016	02:26:11 PM
57	N019979-003C	SAMP	1	06/20/2016	02:31:33 PM
7	CCV1	CCV	1	06/20/2016	02:37:24 PM
2	LLCCV1	CCV2	1	06/20/2016	02:43:17 PM
1	CCB1	CCB	1	06/20/2016	02:48:06 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
4	ICSA2	ICSA	1	06/20/2016	02:52:24 PM
5	ICSAB2	ICSAB	1	06/20/2016	02:58:20 PM

INJECTION LOG: 160620B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-160608L,0.025<50mL
Standard2	MWST-160608L,0.25<50mL
Standard3	MWST-160608L,1.25<50mL
Standard4	MWST-160608L,2.5<50mL
Standard5	MWST-160608L,5<50mL
Standard6	MWST-160608L,10<50mL
ICV	MWST-160608M
CCV	MWST-160608L,2.5<50mL
ICSA/ICSAB	MWST-160523A/MWST-160608N
Int. Std. (Y)	MSST-160323B
PS Spike	MSST-130329D/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/20/2016	03:03:09 PM
2	Standard1	ICAL	1	06/20/2016	03:06:26 PM
3	Standard2	ICAL	1	06/20/2016	03:09:43 PM
4	Standard3	ICAL	1	06/20/2016	03:13:33 PM
5	Standard4	ICAL	1	06/20/2016	03:17:25 PM
6	Standard5	ICAL	1	06/20/2016	03:21:18 PM
7	Standard6	ICAL	1	06/20/2016	03:25:12 PM
8	ICV	ICV	1	06/20/2016	03:28:02 PM
1	ICB	ICB	1	06/20/2016	03:31:54 PM
3	ICSA1	ICSA	1	06/20/2016	03:35:12 PM
4	ICSAB1	ICSAB	1	06/20/2016	03:38:29 PM
38	MB-58740	MBLK	1	06/20/2016	03:42:23 PM
39	LCS2-58740	LCS	1	06/20/2016	03:45:41 PM
40	N020008-001B	SAMP	5	06/20/2016	03:48:59 PM
41	N020008-002B	SAMP	5	06/20/2016	03:53:50 PM
42	MB-58785	MBLK	1	06/20/2016	03:58:42 PM
43	LCS-58785	LCS	1	06/20/2016	04:01:59 PM
44	N020104-001A	SAMP	5	06/20/2016	04:05:48 PM
45	N020104-002A	SAMP	5	06/20/2016	04:09:52 PM
46	N020008-001B 25X	SAMP	~~50~~	06/20/2016	04:13:12 PM
47	N020008-002B	SAMP	50	06/20/2016	04:16:31 PM
5	CCV1	CCV	1	06/20/2016	04:19:51 PM
1	CCB1	CCB	1	06/20/2016	04:23:46 PM
48	N020008-~~001B~~ 2B	SAMP	250	06/20/2016	04:27:04 PM
49	N020008-002B-PS	PS	50	06/20/2016	04:30:25 PM
50	N020008-002B-MS2	MS	50	06/20/2016	04:33:45 PM
51	N020008-002B-MSD2	MSD	50	06/20/2016	04:37:05 PM
52	N020104-001A	SAMP	25	06/20/2016	04:40:23 PM
53	N020104-001A-PS	PS	5	06/20/2016	04:44:16 PM

6/22/2016

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N020104-001A-MS	MS	5	06/20/2016	04:48:21 PM
55	N020104-001A-MSD	MSD	5	06/20/2016	04:52:27 PM
56	N020104-002A	SAMP	1	06/20/2016	04:56:31 PM
5	CCV2	CCV	1	06/20/2016	04:59:52 PM
1	CCB2	CCB	1	06/20/2016	05:03:46 PM
3	ICSA2	ICSA	1	06/20/2016	05:07:03 PM
4	ICSAB2	ICSAB	1	06/20/2016	05:10:21 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/15/2016 8:25:03 A**
Prep End Date: **6/15/2016 1:03:00 P**

Initials/ Date: FOR 6/22/2016

Prep Factor Units: **mL / mL**

Prep Batch **58740** Prep Code: **3010_W_DISS** Technician: **Amy Mata**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-58740	Aqueous		25	☐	0	0	25	1.000		
LCS2-58740	Aqueous		25	☐	0	0	25	1.000		
MB-58740	Aqueous		25	☐	0	0	25	1.000		
N020008-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8409	HYDROCHLORIC ACID
8447	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.05
MWST-160201G	ICP Solution A	LCS/MS/MSD	0.5
MWST-160201H	ICP Solution B	LCS/MS/MSD	0.5
MWST-160531G	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160620A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	06/20/2016	12:30:56 PM	Mg	279.079	-174	0.00	mg/L	
Standard1	06/20/2016	12:35:16 PM	Mg	279.079	1792	0.1000	mg/L	
Standard2	06/20/2016	12:40:06 PM	Mg	279.079	15257	1.000	mg/L	
Standard3	06/20/2016	12:44:55 PM	Mg	279.079	32089	2.000	mg/L	
Standard4	06/20/2016	12:49:47 PM	Mg	279.079	80251	5.000	mg/L	
Standard5	06/20/2016	12:54:38 PM	Mg	279.079	119473	7.500	mg/L	
Standard6	06/20/2016	12:59:27 PM	Mg	279.079	157553	10.000	mg/L	
Standard7	06/20/2016	01:04:17 PM	Mg	279.079	302172	20.000	mg/L	0.9997
Calcium								
CalBlk	06/20/2016	12:30:56 PM	Ca	227.546	-24	0.00	mg/L	
Standard1	06/20/2016	12:35:16 PM	Ca	227.546	63	0.2000	mg/L	
Standard2	06/20/2016	12:40:06 PM	Ca	227.546	276	1.000	mg/L	
Standard3	06/20/2016	12:44:55 PM	Ca	227.546	592	2.000	mg/L	
Standard4	06/20/2016	12:49:47 PM	Ca	227.546	1465	5.000	mg/L	
Standard5	06/20/2016	12:54:38 PM	Ca	227.546	2185	7.500	mg/L	
Standard6	06/20/2016	12:59:27 PM	Ca	227.546	2878	10.000	mg/L	
Standard7	06/20/2016	01:04:17 PM	Ca	227.546	5610	20.000	mg/L	0.9999
Iron								
CalBlk	06/20/2016	12:30:56 PM	Fe	273.953	-79	0.00	mg/L	
Standard1	06/20/2016	12:35:16 PM	Fe	273.953	264	0.0200	mg/L	
Standard2	06/20/2016	12:40:06 PM	Fe	273.953	609	0.050	mg/L	
Standard3	06/20/2016	12:44:55 PM	Fe	273.953	25316	2.000	mg/L	
Standard4	06/20/2016	12:49:47 PM	Fe	273.953	63134	5.000	mg/L	
Standard5	06/20/2016	12:54:38 PM	Fe	273.953	93972	7.500	mg/L	
Standard6	06/20/2016	12:59:27 PM	Fe	273.953	123911	10.000	mg/L	
Standard7	06/20/2016	01:04:17 PM	Fe	273.953	236081	20.000	mg/L	0.9997

INITIAL CALIBRATION SUMMARY: 160620B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	06/20/2016	03:03:09 PM	Na	589.594	-36	0.00	mg/L	
Standard1	06/20/2016	03:06:26 PM	Na	589.594	388	0.1000	mg/L	
Standard2	06/20/2016	03:09:43 PM	Na	589.594	4009	1.000	mg/L	
Standard3	06/20/2016	03:13:33 PM	Na	589.594	20062	5.000	mg/L	
Standard4	06/20/2016	03:17:25 PM	Na	589.594	40060	10.000	mg/L	
Standard5	06/20/2016	03:21:18 PM	Na	589.594	80796	20.000	mg/L	
Standard6	06/20/2016	03:25:12 PM	Na	589.594	161932	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICV** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9978.681	500	10000	0	99.8	90	110				
Iron	9807.570	20	10000	0	98.1	90	110				
Magnesium	9825.610	100	10000	0	98.3	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ZZZZZZ** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	224.834	500	200.0	0	112	80	120				
Iron	22.413	20	20.00	0	112	80	120				
Magnesium	113.924	100	100.0	0	114	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **CCV** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10240.133	500	10000	0	102	90	110				
Iron	10371.458	20	10000	0	104	90	110				
Magnesium	10336.887	100	10000	0	103	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ZZZZZZ** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	235.686	500	200.0	0	118	70	130				
Iron	22.727	20	20.00	0	114	70	130				
Magnesium	115.040	100	100.0	0	115	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICV**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10081.570	500	10000	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **CCV**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9778.323	500	10000	0	97.8	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **CCV**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9856.172	500	10000	0	98.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109035**
Client ID: **ICB**	Batch ID: **R109035**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	36.530	500									
Iron	0.356	20									
Magnesium	0.485	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109035**
Client ID: **CCB**	Batch ID: **R109035**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.486	500									
Iron	0.776	20									
Magnesium	3.142	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	6.236	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **CCB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	13.544	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **CCB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	13.200	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **ICSA1** SampType: **ICSA** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICSA** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	596902.724	50	500000	0	119	80	120				
Calcium	506451.774	500	500000	0	101	80	120				
Iron	215625.249	20	200000	0	108	80	120				
Magnesium	483333.379	100	500000	0	96.7	80	120				

Sample ID: **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICSAB** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	559176.763	50	500000	0	112	80	120				
Calcium	569883.148	500	500000	0	114	80	120				
Iron	187422.026	20	200000	0	93.7	80	120				
Magnesium	531866.309	100	500000	0	106	80	120				

Sample ID: **ICSA2** SampType: **ICSA** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICSA** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	601718.366	50	500000	0	120	80	120				S
Calcium	508842.261	500	500000	0	102	80	120				
Iron	217210.662	20	200000	0	109	80	120				
Magnesium	484681.049	100	500000	0	96.9	80	120				

Sample ID: **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ICSAB** Batch ID: **R109035** TestNo: **EPA 6010B** Analysis Date: **6/20/2016** SeqNo: **2355270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	563482.741	50	500000	0	113	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109035**
Client ID: **ICSAB**	Batch ID: **R109035**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	574116.932	500	500000	0	115	80	120				
Iron	188436.541	20	200000	0	94.2	80	120				
Magnesium	532778.643	100	500000	0	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICSA**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-0.299958	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICSAB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10041.413	500	10000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICSA**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	16.966	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **109039**
Client ID: **ICSAB**	Batch ID: **R109039**	TestNo: **EPA 6010B**		Analysis Date: **6/20/2016**	SeqNo: **2355516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10095.106	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160620A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0016	100.16	65-125	PASS
Standard2	ICAL	1	1.028	102.79	65-125	PASS
Standard3	ICAL	1	1.12	111.95	65-125	PASS
Standard4	ICAL	1	0.99	99.33	65-125	PASS
Standard5	ICAL	1	1	99.58	65-125	PASS
Standard6	ICAL	1	1.0034	100.34	65-125	PASS
Standard7	ICAL	1	0.99	99.44	65-125	PASS
ICV	ICV	1	0.71	71.34	65-125	PASS
LLICV	CCV1	1	1.0097	100.97	65-125	PASS
ICV	ICV	1	1.026	102.65	65-125	PASS
LLICV	CCV1	1	0.99	99.22	65-125	PASS
ICB	ICB	1	1.017	101.66	65-125	PASS
ICSA1	ICSA	1	0.98	98.087	65-125	PASS
ICSAB1	ICSAB	1	0.88	87.98	65-125	PASS
MB-58740	MBLK	1	1.009	100.9	65-125	PASS
LCS1-58740	LCS	1	1.032	103.15	65-125	PASS
N020008-001B	SAMP	1	0.95	95.24	65-125	PASS
N020008-002B	SAMP	1	0.89	88.63	65-125	PASS
N020008-001B	SAMP	5	0.98	97.73	65-125	PASS
N020008-001B-PS	PS	1	0.94	93.88	65-125	PASS
N020008-001B-MS1	MS	1	0.93	93.034	65-125	PASS
N020008-001B-MSD1	MSD	1	0.93	93.35	65-125	PASS
CCV1	CCV	1	1.012	101.25	65-125	PASS
LLCCV1	CCV2	1	1.008	100.8	65-125	PASS
CCB1	CCB	1	1.01	101.05	65-125	PASS
ICSA2	ICSA	1	1	99.73	65-125	PASS
ICSAB2	ICSAB	1	0.89	89.32	65-125	PASS

INTERNAL STANDARD: 160620B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.014	101.4	65-125	PASS
Standard2	ICAL	1	1.012	101.2	65-125	PASS
Standard3	ICAL	1	1.021	102.06	65-125	PASS
Standard4	ICAL	1	1.011	101.12	65-125	PASS
Standard5	ICAL	1	1.022	102.22	65-125	PASS
Standard6	ICAL	1	1.03	102.97	65-125	PASS
ICV	ICV	1	1.017	101.66	65-125	PASS
ICB	ICB	1	1.0025	100.25	65-125	PASS
ICSA1	ICSA	1	1	99.68	65-125	PASS
ICSAB1	ICSAB	1	1.012	101.16	65-125	PASS
MB-58740	MBLK	1	1	99.56	65-125	PASS
LCS2-58740	LCS	1	1.057	105.74	65-125	PASS
N020008-001B	SAMP	5	1.0074	100.74	65-125	PASS
N020008-002B	SAMP	5	1.0008	100.08	65-125	PASS
N020008-001B 25x	SAMP	~~50~~	1.0078	100.78	65-125	PASS
N020008-002B	SAMP	50	1.011	101.06	65-125	PASS
CCV1	CCV	1	1.02	101.95	65-125	PASS
CCB1	CCB	1	1.0086	100.86	65-125	PASS
N020008-~~001B~~ 2B	SAMP	250	1.01	101.02	65-125	PASS
N020008-002B-PS	PS	50	1.0009	100.09	65-125	PASS
N020008-002B-MS2	MS	50	1.0017	100.17	65-125	PASS
N020008-002B-MSD2	MSD	50	1.0062	100.62	65-125	PASS
CCV2	CCV	1	1.014	101.35	65-125	PASS
CCB2	CCB	1	1	99.83	65-125	PASS
ICSA2	ICSA	1	1	99.53	65-125	PASS
ICSAB2	ICSAB	1	1.0059	100.59	65-125	PASS


6/22/2016

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N020008
Test Method: EPA 6010B
Analysis Date: 6/20/2016

Matrix: Groundwater
Batch No.: 58740

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Ca & Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N020008-001B DT 5X	Calcium	ug/L	126354.7	~~NA~~ PASS	119926.9	5.36%	10
N020008-001B DT 5X	Iron	ug/L	0	NA	0		10
N020008-001B DT 5X	Magnesium	ug/L	28689.73	PASS	26121.59	9.83%	10

Note: NA - Not applicable

6/23/2016

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N020008
Test Method: EPA 6010B
Analysis Date: 6/20/2016

Matrix: Groundwater
Batch No.: 58740

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N020008-002B DT 250X	Sodium	ug/L	1444156	PASS	1432980	0.78%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N020008-001B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109035**
Client ID: **ZZZZZZ** Batch ID: **58740** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/20/2016** SeqNo: **2355261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	128903.576	500	10000	119900	89.8	80	120				
Iron	118.077	20	100.0	0	118	80	120				
Magnesium	35291.538	100	10000	26120	91.7	80	120				

Sample ID: **N020008-002B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **109039**
Client ID: **ZZZZZZ** Batch ID: **58740** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/20/2016** SeqNo: **2355505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1451779.536	25000	20000	1433000	94.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 58656
ASSET #: N020008

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 6/9/2016

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 6/22/2016 Date:

2nd Level Reviewer _____ Date: 6/22/2016

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N020008-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 121.164 * 5 * (25/25)

Chromium , ug/L = 605.820000

Reporting results in two significant figures,

Chromium , ug/L = 610

% RSD SUMMARY

PERCENT RSD SUMMARY: 160609A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.15	43.43	15	<PQL	0.12	12.41	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	7.0048	15	PASS	0.49	2.55	15	PASS
Std3-5/50 ppb	ICAL	1	5.15	0.51	15	PASS	5.11	1.11	15	PASS
Std4-10/100 ppb	ICAL	1	10.37	1.23	15	PASS	10.5	1.023	15	PASS
Std5-20/200 ppb	ICAL	1	20.4	1.11	15	PASS	20.4	0.27	15	PASS
Std6-40/400 ppb	ICAL	1	40.51	1.2	15	PASS	40.57	1.14	15	PASS
Std7-100/1000 ppb	ICAL	1	100.58	0.81	15	PASS	100.7	0.92	15	PASS
Std8-200/2000 ppb	ICAL	1	199.55	0.98	15	PASS	199.47	0.73	15	PASS
ICV	ICV	1	10.0066	0.089	15	PASS	98.66	1.21	15	PASS
ICB	ICB	1	0.059	26.22	15	<PQL	0.0081	165.14	15	<PQL
LLICV	CCV1	1	1.16	2.15	20	PASS	0.56	4.58	20	PASS
ICSA1	ICSA	1	0.2	14.4	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.092	1.79	15	PASS	20.33	2.026	15	PASS
LLICV	CCV1	1	1.092	2.87	20	PASS	0.51	6.44	20	PASS
MB-58656	MBLK	1	0.039	38.95	15	<PQL	<0.000	N/A	15	<PQL
LCS-58656	LCS	1	10.05	1.95	15	PASS	98.071	0.71	15	PASS
N020009-001C	SAMP	1	<0.000	N/A	15	<PQL	38.75	0.71	15	PASS
N020009-001C	SAMP	5	0.041	40.22	15	<PQL	8.25	2.22	15	PASS
N020009-001C-PS	PS	1	9.53	0.53	15	PASS	135.25	0.71	15	PASS
N020009-001C-MS	MS	1	9.44	0.27	15	PASS	133.7	0.36	15	PASS
N020009-001C-MSD	MSD	1	9.42	1.9	15	PASS	134.14	0.73	15	PASS
N020008-001B	SAMP	1	0.69	5.25	15	PASS	71.81	1.76	15	PASS
N020008-002B	SAMP	1	527.6	0.86	15	PASS	12.3	1.42	15	PASS
N020009-001C	SAMP	25	0.15	3.18	15	PASS	1.67	3.1	15	PASS
CCV1	CCV	1	19.89	1.27	15	PASS	19.69	2.34	15	PASS
CCB1	CCB	1	0.011	173.89	15	<PQL	0.0056	100.15	15	<PQL
N020008-002B	SAMP	1	535.49	2.84	15	PASS	12.42	3.16	15	PASS
N020009-001C	SAMP	25	0.18	16.59	15	<PQL	1.61	0.7	15	PASS
N020009-001C-PS	PS	5	2.12	3.082	15	PASS	28.59	0.91	15	PASS
N020009-001C-MS	MS	5	2.046	4.17	15	PASS	28.032	1.48	15	PASS
N020009-001C-MSD	MSD	5	2.033	0.65	15	PASS	27.95	0.55	15	PASS
N020008-001B	SAMP	5	0.18	5.14	15	PASS	15.9	0.99	15	PASS
N020008-002B	SAMP	5	121.16	0.19	15	PASS	2.73	3.73	15	PASS
CCV2	CCV	1	20.43	2.2	15	PASS	20.84	2.17	15	PASS
CCB2	CCB	1	0.038	50.12	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.075	3.91	20	PASS	0.57	5.66	20	PASS
LLCCV1	CCV2	1	1.18	1.84	20	PASS	0.55	7.53	20	PASS
ICSA2	ICSA	1	0.24	21.77	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.07	0.59	15	PASS	20.36	2.18	15	PASS
CCV3	CCV	1	20.082	3.57	15	PASS	21	1.61	15	PASS

PERCENT RSD SUMMARY: 160609A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0012	1592.19	15	<PQL
LLCCV2	CCV2	1	1.092	3.94	20	PASS	0.54	6.046	20	PASS
ICSA3	ICSA	1	0.23	9.74	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.72	2.17	15	PASS	20.48	2.32	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 160609A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0609001.D	RINSE	RINSE	1	06/09/16 8:39 AM
A0609002.D	Cal Blank	IBLK	1	06/09/16 8:45 AM
A0609003.D	Std1-0.1/1 ppb	ICAL	1	06/09/16 8:51 AM
A0609004.D	Std2-0.5/5 ppb	ICAL	1	06/09/16 8:56 AM
A0609005.D	Std3-5/50 ppb	ICAL	1	06/09/16 9:02 AM
A0609006.D	Std4-10/100 ppb	ICAL	1	06/09/16 9:07 AM
A0609007.D	Std5-20/200 ppb	ICAL	1	06/09/16 9:13 AM
A0609008.D	Std6-40/400 ppb	ICAL	1	06/09/16 9:19 AM
A0609009.D	Std7-100/1000 ppb	ICAL	1	06/09/16 9:24 AM
A0609010.D	Std8-200/2000 ppb	ICAL	1	06/09/16 9:30 AM
A0609011.D	ICV	ICV	1	06/09/16 9:35 AM
A0609012.D	ICB	ICB	1	06/09/16 9:59 AM
A0609013.D	LLICV	CCV1	1	06/09/16 10:05 AM
A0609014.D	ICSA1	ICSA	1	06/09/16 10:10 AM
A0609015.D	ICSAB1	ICSAB	1	06/09/16 10:16 AM
A0609016.D	LLICV	CCV1	1	06/09/16 10:21 AM
A0609017.D	MB-58656	MBLK	1	06/09/16 10:27 AM
A0609018.D	LCS-58656	LCS	1	06/09/16 10:32 AM
A0609019.D	N020009-001C	SAMP	1	06/09/16 10:38 AM
A0609020.D	N020009-001C	SAMP	5	06/09/16 10:44 AM
A0609021.D	N020009-001C-PS	PS	1	06/09/16 10:49 AM
A0609022.D	N020009-001C-MS	MS	1	06/09/16 10:55 AM
A0609023.D	N020009-001C-MSD	MSD	1	06/09/16 11:00 AM
A0609024.D	N020008-001B	SAMP	1	06/09/16 11:06 AM
A0609025.D	N020008-002B	SAMP	1	06/09/16 11:11 AM
A0609026.D	N020009-001C	SAMP	25	06/09/16 11:17 AM
A0609027.D	CCV1	CCV	1	06/09/16 11:36 AM
A0609028.D	CCB1	CCB	1	06/09/16 11:42 AM
A0609029.D	N020008-002B	SAMP	1	06/09/16 11:48 AM
A0609030.D	N020009-001C	SAMP	25	06/09/16 11:53 AM
A0609031.D	N020009-001C-PS	PS	5	06/09/16 11:59 AM
A0609032.D	N020009-001C-MS	MS	5	06/09/16 12:05 PM
A0609033.D	N020009-001C-MSD	MSD	5	06/09/16 12:10 PM
A0609034.D	N020008-001B	SAMP	5	06/09/16 12:16 PM
A0609035.D	N020008-002B	SAMP	5	06/09/16 12:21 PM
A0609036.D	N019987-002B	SAMP	1	06/09/16 12:27 PM
A0609037.D	N019987-002A	SAMP	1	06/09/16 12:32 PM
A0609038.D	CCV2	CCV	1	06/09/16 12:38 PM
A0609039.D	CCB2	CCB	1	06/09/16 12:44 PM
A0609040.D	LLCCV1	CCV2	1	06/09/16 12:48 PM
A0609041.D	LLCCV1	CCV2	1	06/09/16 1:00 PM
A0609042.D	ICSA2	ICSA	1	06/09/16 1:06 PM

INJECTION LOG: 160609A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0609043.D	ICSAB2	ICSAB	1	06/09/16 1:11 PM
A0609044.D	MB-58574	MBLK	1	06/09/16 1:22 PM
A0609045.D	LCS-58574	LCS	1	06/09/16 1:28 PM
A0609046.D	N019929-001B-MS	MS	1	06/09/16 1:40 PM
A0609047.D	N019929-001B-MSD	MSD	1	06/09/16 1:46 PM
A0609048.D	N019929-001B-PS	PS	1	06/09/16 1:52 PM
A0609049.D	N019929-001B	SAMP	1	06/09/16 1:57 PM
A0609050.D	N019929-001B	SAMP	5	06/09/16 2:03 PM
A0609051.D	CCV3	CCV	1	06/09/16 2:08 PM
A0609052.D	CCB3	CCB	1	06/09/16 2:14 PM
A0609053.D	LLCCV2	CCV2	1	06/09/16 2:20 PM
A0609054.D	ICSA3	ICSA	1	06/09/16 2:25 PM
A0609055.D	ICSAB3	ICSAB	1	06/09/16 2:31 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/8/2016 8:00:00 A**
Prep End Date: **6/8/2016 12:30:00**

Initials/ Date: 6/22/2016

Prep Batch **58656** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-15**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-58656	Aqueous		25	☐	0	0	25	1.000		
MB-58656	Aqueous		25	☐	0	0	25	1.000		
N019900-001B	Water	<2	25	☐	0	0	25	1.000		
N020008-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N020008-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N020009-001C	Aqueous	<2	25	☐	0	0	25	1.000		
N020009-001C-MS	Aqueous	<2	25	☐	0	0	25	1.000		
N020009-001C-MS	Aqueous	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8441	HYDROCHLORIC ACID
8442	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-160201	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-160606	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-160606	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-160606	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 9 Jun 2016 07:55:45 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	64351.70	0.00	
24	Mg	377086.00	0.00	
25	Mg	49418.10	0.00	
26	Mg	57385.90	0.00	
59	Co	347758.00	0.00	
115	In	801023.00	0.00	
206	Pb	280222.00	0.00	
207	Pb	244725.00	0.00	
208	Pb	601962.00	0.00	

RSD (%)

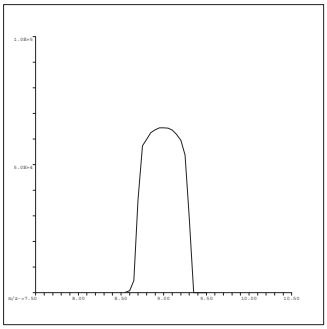
Element		Actual	Required	Flag
9	Be	1.06	5.00	
24	Mg	0.44	5.00	
25	Mg	0.81	5.00	
26	Mg	0.85	5.00	
59	Co	0.52	5.00	
115	In	0.31	5.00	
206	Pb	0.99	5.00	
207	Pb	0.81	5.00	
208	Pb	0.82	5.00	

Ion Ratio

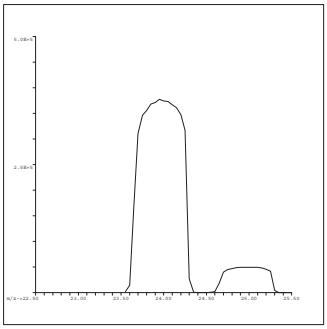
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

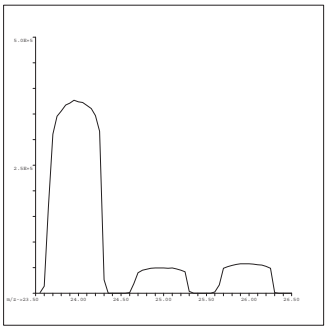
Element	Actual	Required	Flag



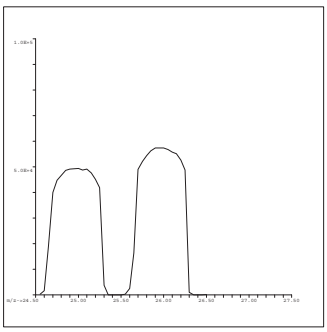
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



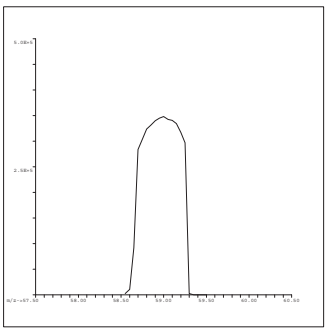
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



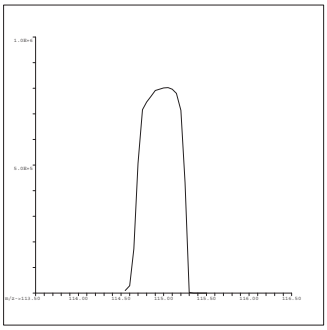
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



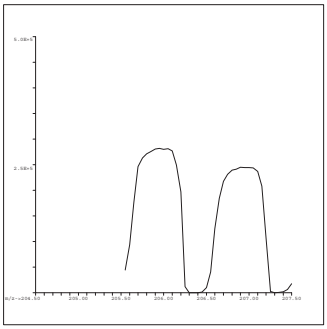
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



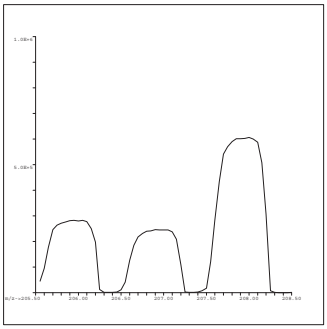
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



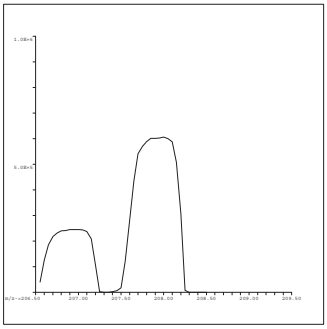
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 160609A

Instrument ID: ICPMS-02

Analyte	Data File	A0609002.D	A0609004.D	A0609005.D	A0609006.D	A0609007.D	A0609008.D	A0609009.D	A0609010.D	
	Acq. Date-Time	06/09/2016 08:45 AM	06/09/2016 08:56 AM	06/09/2016 09:02 AM	06/09/2016 09:07 AM	06/09/2016 09:13 AM	06/09/2016 09:19 AM	06/09/2016 09:24 AM	06/09/2016 09:30 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	54045.3	55039.8	53792.1	53022.9	53334.2	52527.3	53081	52620.8	
55 Mn [2]	CPS	86.3	1173.2	11193.3	22597.1	44073.2	86228.6	216148.2	424390.6	1.0000
52 Cr [2]	CPS	648.9	2722.5	21775.8	42609.3	83685.7	163061.4	408175.7	802133.7	1.0000

Standard Code
ICAL: 2MSST-151207C
ICAL: 2MSST-151207D
ICAL: 2MWST-151207A
IS Mix: 2MWST-160401A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.656	0.50	100.0	0	98.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.560	0.50	0.5000	0	112	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.694	0.50	20.00	0	98.5	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.840	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.550	0.50	0.5000	0	110	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.007	1.0	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.158	1.0	1.000	0	116	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.893	1.0	20.00	0	99.5	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCV**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.426	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ZZZZZZ**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.183	1.0	1.000	0	118	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.059	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **CCB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.038	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**ICSA1**	SampType:	**ICSA**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ICSA**	Batch ID:	**R108878**	TestNo:	**EPA 6020**			Analysis Date:	**6/9/2016**	SeqNo:	**2348753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	**ICSAB1**	SampType:	**ICSAB**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ICSAB**	Batch ID:	**R108878**	TestNo:	**EPA 6020**			Analysis Date:	**6/9/2016**	SeqNo:	**2348754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.331	0.50	20.00	0	102	80	120				

Sample ID	**ICSA2**	SampType:	**ICSA**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ICSA**	Batch ID:	**R108878**	TestNo:	**EPA 6020**			Analysis Date:	**6/9/2016**	SeqNo:	**2348781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	**ICSAB2**	SampType:	**ICSAB**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ICSAB**	Batch ID:	**R108878**	TestNo:	**EPA 6020**			Analysis Date:	**6/9/2016**	SeqNo:	**2348782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.362	0.50	20.00	0	102	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICSA**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.195	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICSAB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.092	1.0	20.00	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICSA**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.238	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID: **ICSAB**	Batch ID: **R108878**	TestNo: **EPA 6020**		Analysis Date: **6/9/2016**	SeqNo: **2348737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.070	1.0	20.00	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 160609A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	54045.3	54045.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	54068.7	54045.3	100.04	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	55039.8	54045.3	101.84	PASS	70-130
Std3-5/50 ppb	ICAL	1	53792.1	54045.3	99.53	PASS	70-130
Std4-10/100 ppb	ICAL	1	53022.9	54045.3	98.11	PASS	70-130
Std5-20/200 ppb	ICAL	1	53334.2	54045.3	98.68	PASS	70-130
Std6-40/400 ppb	ICAL	1	52527.3	54045.3	97.19	PASS	70-130
Std7-100/1000 ppb	ICAL	1	53081	54045.3	98.22	PASS	70-130
Std8-200/2000 ppb	ICAL	1	52620.8	54045.3	97.36	PASS	70-130
ICV	ICV	1	55772.3	54045.3	103.2	PASS	70-130
ICB	ICB	1	53402.3	54045.3	98.81	PASS	70-130
LLICV	CCV1	1	50808.4	54045.3	94.011	PASS	70-130
ICSA1	ICSA	1	57533.5	54045.3	106.45	PASS	70-130
ICSAB1	ICSAB	1	64437.6	54045.3	119.23	PASS	70-130
LLICV	CCV1	1	60689.1	54045.3	112.29	PASS	70-130
MB-58656	MBLK	1	56582.4	54045.3	104.69	PASS	70-130
LCS-58656	LCS	1	56535.7	54045.3	104.61	PASS	70-130
N020009-001C	SAMP	1	58173.9	54045.3	107.64	PASS	70-130
N020009-001C	SAMP	5	55713.1	54045.3	103.09	PASS	70-130
N020009-001C-PS	PS	1	58979.6	54045.3	109.13	PASS	70-130
N020009-001C-MS	MS	1	58894	54045.3	108.97	PASS	70-130
N020009-001C-MSD	MSD	1	59566.2	54045.3	110.22	PASS	70-130
N020008-001B	SAMP	1	58763.5	54045.3	108.73	PASS	70-130
N020008-002B	SAMP	1	70909.4	54045.3	131.2	NR!	70-130
N020009-001C	SAMP	25	79939	54045.3	147.91	NR!	70-130
CCV1	CCV	1	50546.6	54045.3	93.53	PASS	70-130
CCB1	CCB	1	45572.3	54045.3	84.32	PASS	70-130
N020008-002B	SAMP	1	60979.1	54045.3	112.83	PASS	70-130
N020009-001C	SAMP	25	76121.9	54045.3	140.85	NR!	70-130
N020009-001C-PS	PS	5	71815.7	54045.3	132.88	NR!	70-130
N020009-001C-MS	MS	5	66535.7	54045.3	123.11	PASS	70-130
N020009-001C-MSD	MSD	5	63663.4	54045.3	117.8	PASS	70-130
N020008-001B	SAMP	5	59535	54045.3	110.16	PASS	70-130
N020008-002B	SAMP	5	60115.9	54045.3	111.23	PASS	70-130
CCV2	CCV	1	52757.8	54045.3	97.62	PASS	70-130
CCB2	CCB	1	46205.1	54045.3	85.49	PASS	70-130
LLCCV1	CCV2	1	53813.5	54045.3	99.57	PASS	70-130
LLCCV1	CCV2	1	51617.7	54045.3	95.51	PASS	70-130
ICSA2	ICSA	1	58876.2	54045.3	108.94	PASS	70-130
ICSAB2	ICSAB	1	63835.2	54045.3	118.11	PASS	70-130
CCV3	CCV	1	42839.5	54045.3	79.27	PASS	70-130

INTERNAL STANDARD: 160609A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCB3	CCB	1	37887.6	54045.3	70.1	PASS	70-130
LLCCV2	CCV2	1	49342.7	54045.3	91.3	PASS	70-130
ICSA3	ICSA	1	49778.9	54045.3	92.11	PASS	70-130
ICSAB3	ICSAB	1	49418.8	54045.3	91.44	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N020008
Test Method: EPA 6020
Analysis Date: 6/9/2016

Matrix: Groundwater
Batch No.: 58656

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N020009-001C DT 5X	Chromium	ug/L	0	NA	0		10
N020009-001C DT 5X	Manganese	ug/L	41.24833	PASS	38.75001	6.45%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N020009-001C-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **108878**
Client ID:	**ZZZZZZ**	Batch ID: **58656**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/9/2016**	SeqNo: **2348760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	135.253	0.50	100.0	38.75	96.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N020008
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N020009-001C-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**108878**
Client ID:	**ZZZZZZ**	Batch ID:	**58656**	TestNo:	**EPA 6020**	**EPA 3010A**		Analysis Date:	**6/9/2016**	SeqNo:	**2348715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.533	1.0	10.00	0	95.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Detection Limit
Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

ACCEPTANCE CRITERIA: MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	MDL*10	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0313	0.3133	0.3000	0.187	0.50	0.515	103
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0248	0.2485	0.3000	0.049	0.10	0.103	103
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699	0.6986	0.3000	0.403	1.00	1.245	125
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0430	0.4304	0.3000	0.185	0.50	0.524	105
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0473	0.4734	0.3000	0.174	0.50	0.501	100
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0192	0.1925	0.3000	0.321	1.00	0.973	97
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263	0.2630	0.3000	0.163	0.50	0.475	95
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2626	2.6262	0.3000	0.328	1.00	1.062	106
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7517	7.5170	0.3000	0.605	10.00	11.338	113
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367	0.3670	0.3000	0.343	1.00	1.018	102
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0554	0.5543	0.3000	0.193	0.50	0.605	121
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0385	0.3853	0.3000	0.247	0.50	0.660	132
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0395	0.3954	0.3000	0.341	1.00	1.002	100
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276	0.2760	0.3000	0.170	0.50	0.502	100
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590	0.5899	0.3000	0.247	1.00	1.029	103
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296	0.2961	0.3000	0.186	0.50	0.549	110
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0327	0.3272	0.3000	0.181	0.50	0.533	107
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213	0.2133	0.3000	0.221	1.00	0.873	87
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2678	2.6780	0.3000	3.286	10.00	10.085	101